

Spring 2012

The Rural City Sustainability Challenge

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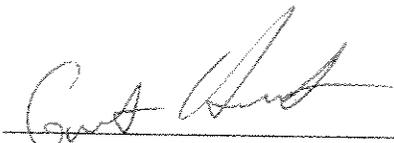
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The Rural City Sustainability Challenge

Recycling Programs in Helena, MT and Moses Lake, Washington

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Honors Thesis

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Abstract: Recycling programs are an essential part of waste management within a city; however, many rural and small cities have a difficult time implementing a recycling program. Through a qualitative analysis of Moses Lake, Washington and Helena, Montana, I have studied the necessary components for a successful recycling program. Education, participation, and costs are the three areas that must be addressed in order for a city to implement a sustainable recycling program. Moses Lake, WA program, though only a year old in 2012, has all successfully achieved all three components. The last chapter provides a public policy for Helena, MT modeled after Moses Lake, WA and the findings throughout the paper.

Acknowledgements: Thank you first to my amazing parents Kelly and Jackie Brown for providing support, advice, and encouragement throughout the entire process. Dr. Bill Parsons, thank you for reading my thesis too many times to count and letting me ask you questions about the paper on a daily basis. I would not have been able to finish the thesis without your motivation. To Moses Lake, WA and Helena, MT, thank you for being so hospitable and inquire about your recycling programs. I have learned so much about recycling and it has inspired me to pursue a career in sustainability.

Table of Contents

Chapter 1: The Necessity of Recycling Programs.....	Page 5
Chapter 2: The Analysis and Comparison of the Cities.....	Page 30
Chapter 3: The Proposed Public Policy to Implement a Recycling Program.....	Page 69
Chapter 4: Conclusion.....	Page 92
Appendix A: Questionnaire.....	Page 98
Appendix B: Helena Sanitation Policy.....	Page 101

Chapter 1: The Necessity of Recycling Programs

Americans want to conserve resources; however, conflict has arisen over the best means to conserve. Significant disagreements have occurred about which programs are most successful at mitigating the effects of pollution, with relatively little cost to the consumer. The Environmental Protection Agency, created in 1970, was the beginning of a government movement recognizing the importance and dangers that humans posed to the environment,¹ but the garbage crisis of 1987 forced Americans to realize that garbage concerns were causing significant problems for cities, resources, and the environment.² Recycling was one of the solutions proposed to mitigate the effects of growing consumerism, increased trash, and global warming. Instead of wasting valuable resources by throwing them away, resources could be reused and landfill space could be saved.³ This paper begins by offering a history of the trash problem, and follows by explaining why alternatives to recycling are unacceptable. Then, it shall present the history of the recycling programs, and seek to answer the following question: what are the impediments to creating a viable recycling program in a small city?

¹ United States Environmental Protection Agency . *History of EPA*. June 28, 2011 .

<http://www.epa.gov/history/> (accessed September 1 , 2011).

² Daniel Benjamin. "The Eight Myths of Recycling." In *Garbage and Recycling*, by Mitchell Young, 76-83. Farmington Hills: Greenhaven Press , 2007, 77.

³ Reusing materials also reduces the need to mine for raw materials. Mining materials as a negative effect on the environment, such as clear-cutting which uses large amounts of petroleum, and poor management of resource sites.

Recycling programs began after the “trash crisis” of 1987, when “the garbage barge *Mobro* 4000 had to spend two months touring the Atlantic and the Gulf of Mexico before it found a home for its load.”⁴ The United States was filling up old landfills and not creating new landfills.⁵ Communities no longer wanted to have a landfill near their property, due to the health hazards and decrease in property value; the “not in my backyard principle” was applied to the creation of new ones.⁶

However, trash production in the United States had increased exponentially. Every year, Americans bury 251 million tons of trash, with the average American producing up to 1,600 pounds of waste each year.⁷ A third of the trash produced is containers and packaging waste.⁸ Not surprisingly, “plastic packaging grew five times faster by weight than plastic recovered for recycling” between 1990 and 1997, reports a study done by the Grass Roots Recycling Network.⁹ Trash had become a problem that was too large to handle. If items were not being recycled, they were sent to either an

⁴ Daniel Benjamin. "The Eight Myths of Recycling." 77.

⁵ Daniel Benjamin. "The Eight Myths of Recycling." 78.

⁶ Daniel Benjamin. "The Eight Myths of Recycling." 77.

⁷ Daniel Imhoff. *Paper or Plastic: Searching for a Soltuion in an Overpackaged World* .
Los Angeles : Sierra Club Books, 2005, 10.

⁸ Daniel Imhoff. *Paper or Plastic: Searching for a Soltuion in an Overpackaged World*.
20.

⁹ Daniel Imhoff. *Paper or Plastic: Searching for a Soltuion in an Overpackaged World* .
10.

incinerator or landfill.¹⁰ Therefore, communities began to search for a solution to limit the amount of trash being produced.

While both incinerators and landfills are promoted as safe and effective methods for waste management, they have major flaws. First, the corporations that produce and design the items that are thrown away own many of the incinerators and landfills.¹¹ Corporations produce and advertise obsolete merchandise to earn more money, both from selling their items, and from their items being deposited in their landfill or incinerator.¹² Another issue is the environmental hazard caused by incinerators and landfills. While the methods proclaim to be environmentally sound, they are still hazardous to people and the environment.¹³ Modern incinerators and landfills are designed to capture more gases and leakage than previous models; the reality, however, is that it is impossible for all toxic materials to be captured.¹⁴ Materials that are not captured enter the air and ground water, and pose a serious health risk to citizens and animal species living nearby.¹⁵ In addition, items such as Styrofoam can take hundreds, if not thousands of years to decompose.

¹⁰ Mitchell Young. *Garbage and Recycling*. Farmington Hills: Greenhaven Press , 2007. 199.

¹¹ Heather Rogers. "Titans of Trash." In *Garbage and Recycling*, by Mitchell Young, 201-208 . Farmington Hills: Greenhaven Press , 2007. 204

¹² Heather Rogers. "Titans of Trash." 204. This is a flaw of American waste management and capitalism in general.

¹³ Heather Rogers. "Titans of Trash." 203.

¹⁴ Heather Rogers. "Titans of Trash." 203.

¹⁵ Heather Rogers. "Titans of Trash." 203.

Scientists, therefore, still do not know the harmful effects that could result from its decomposition.¹⁶ Another concern of incinerators and landfills is that the resources are lost and are not reused. While recycling does use energy, it uses significantly smaller amounts of toxic chemicals, energy, and water to create new items.¹⁷ An example is aluminum, which requires twenty-times less energy to recycle than to create from using raw materials.¹⁸ Finally, incinerators and landfills encourage the waste stream to continue at alarming rate, rather than trying to solve the problem of waste. Recycling, while having some flaws, explained below, does reduce the raw material that must be harvested, transported, and used each year for Americans' ever-growing packaging and consumption needs.

Heather Rogers explains that while mega-landfills were designed to handle a substantial amount of garbage, Americans realized that burying or burning their garbage was not a solution.¹⁹ Therefore, different solutions were presented as viable alternatives to the old landfills. Recycling programs began by collecting metal cans, like soup and soda cans, and high grade plastic, type 1 or 2, like milk jugs and water bottles.²⁰ Since then, programs have grown, especially in larger cities, to include more grades of plastic

¹⁶ Daniel Imhoff. *Paper or Plastic: Searching for a Soltuion in an Overpackaged World*. 10.

¹⁷ Daniel Imhoff. *Paper or Plastic: Searching for a Soltuion in an Overpackaged World*. 11.

¹⁸ Daniel Imhoff. *Paper or Plastic: Searching for a Soltuion in an Overpackaged World*. 15.

¹⁹ Heather Rogers . "Titans of Trash." 202.

²⁰ Daniel Imhoff. *Paper or Plastic: Searching for a Soltuion in an Overpackaged World* .

and yard debris.²¹ The number of programs and amount of trash recycled peaked in 1998 and have either plateaued or declined since then.²² U.S. EPA reports “the number of curbside recycling programs from 2001 to 2002 declined from 9,700 to 8,865 programs across the nation.”²³ Much of the decline was due to city budget cuts and cost saving maneuvers. In 2000, in the United States, the household recycling rate, which includes steel, aluminum, paper and cardboard, glass, and plastic, was 39 percent, and rates have not risen dramatically in the last decade, reports the U.S. Environmental Protection Agency.²⁴

Impediments to Recycling

There are multiple impediments to creating or sustaining a recycling program: costs, size, citizen involvement, and government involvement. Currently, recycled items have a volatile price, which affects how many cities sell recycled material and how many companies buy the items.²⁵ The recycling industry hires 1.1 million people nationwide

²¹ Yard debris are leaves, soil, small branches, and yard clippings.

²² Douglas Clement. "Recycling- Righteous or Rubbish?" In *Garbage and Recycling*, by Mitchell Young, 84-92. Farmington Hills: Greenhaven Press , 2007. 84.

²³ Helen Spiegelman and Bill Sheehan, "The Next Frontier for MSW," *BioCycle*, February 2006, p. 30.

²⁴ United States Environmental Protection Agency. *Municipal Solid Waste in the United States: 2000 Facts and Figures*. Executive Summary , United States Environmental Protection Agency, 2000.

²⁵ Kivi Leroux Miller. "Is Recycling Disposable." In *Garbage and Recycling* , by Mitchell Young, 68-75. Farmington Hills : Greenhaven Press, 2007.

and generates \$236 billion in annual sales.²⁶ Aluminum and steel are the most valuable of the recyclables because it is cheaper and easier to melt down, which allows it to bring in a higher price that is more stable.²⁷ Plastic grade one and two are higher grades and can therefore be used for more items, and yard debris can produce a revenue stream for the city, but their market prices are more volatile.²⁸ Other recyclables, such as paper and other types of plastic, have a very volatile market, which discourages cities from collecting these recyclables. Any of the items collected poses a risk for cities to lose money on the return. Long-term contracts with processors are one of the solutions available to cities to avoid loss of revenue. However, many processors worry about losing money in the end due to committing to high contract rates.²⁹

Recycling programs are also costly to the cities, due to the costs of crews, trucks, gas, public relations, and many other items.³⁰ When a city does not have a large revenue stream separate from recycling, or the price of recyclables declines sharply, cities can no longer afford the program. Thus, recycling, while capable of bringing in a substantial revenue stream for large cities, is often one of the first programs to be eliminated in smaller cities. It is difficult to determine what size of city is necessary for recycling

²⁶ Kivi Leroux Miller. "Is Recycling Disposable." 69.

²⁷ Daniel Imhoff. *Paper or Plastic: Searching for a Solution in an Overpackaged World*. 18.

²⁸ Kivi Leroux Miller. "Is Recycling Disposable." 74.

²⁹ Kivi Leroux Miller. "Is Recycling Disposable." 69.

³⁰ Kivi Leroux Miller. "Is Recycling Disposable." 80.; Clement, Douglas. "Recycling- Righteous or Rubbish?" 84.

programs to thrive, because there has been little research on small town recycling. The majority of research has been conducted on the most populous cities within America; however, 82% of the United States population lives within a city rather than rural towns.³¹ Therefore, more analysis must be conducted on all types of cities. Larger cities are able to create economies of scale, in which the efficiency of increases as the number of goods being produced increases.³² Therefore, larger cities can make the program cheaper and produce larger profits when the market allows.³³ It has been proven that richer cities, due to higher tax bases and income of citizens, can spend more money on environmental programs. Larger cities also have an advantage of having a substantial revenue stream to cover extra costs.³⁴ Having a dependable revenue stream for the program is critical to the continuation of the program.³⁵

Creating a larger supply of recyclables within America will create a market for recyclable goods, thus stabilizing the market.³⁶ The more recycled material that is

³¹ Economist Intelligence Unit. "US and Canada Green City Index." *Siemens* . 2010.

http://www.siemens.com/entry/cc/features/greencityindex_international/all/en/pdf/report_northamerica_en.pdf (accessed October 1, 2011).

³² Investopedia . *Economies of Scale* . 2011. <http://www.investopedia.com/terms/e/economiesofscal.asp#ixzz1ZrG5cmXM> (accessed September 1, 2011).

³³ Douglas Clement. "Recycling- Righteous or Rubbish?" 85.

³⁴ Asa Janney. "Mandatory Recycling." In *Garbage and Recycling*, by Mitchell Young, 93-99. Farmington Hills: Greenhaven Press, 2007. 95.

³⁵ Douglas Clement. "Recycling- Righteous or Rubbish?" 85.

³⁶ Douglas Clement. "Recycling- Righteous or Rubbish?" 87.

available, the lower the price of the recycled material, allowing more corporations to buy and use recycled items.³⁷ If more corporations want recycled material in their products, a more stable market will be created, helping not only corporations, but cities as well.

While prices for recycled material may be cheaper, the decrease in volatility will benefit cities. Another benefit of recycling is the revenue stream and savings created for cities. Cities can receive large yields from recyclables, while avoiding costs of landfill disposal, solid waste collection costs, and transfer costs.³⁸ Recycling programs can also create new jobs and attract citizens to the city, increasing property value and tax revenue collected.³⁹

While some cities decreased or eliminated their recycling efforts beginning in 2000, other cities began to better manage their programs to ensure that recycling still existed.⁴⁰ “By 1995, the majority of Americans thought trash was America’s number one environmental problem-with 77 percent reporting that increased recycling of household rubbish was the solution.”⁴¹ While many people support recycling, increasing participation can be challenging. A major problem for recycling programs is maintaining the excitement that occurred during the 1990’s trash crisis. Many cities have had difficulty increasing the number of citizens who recycle.⁴² An example is Philadelphia,

³⁷ Douglas Clement. "Recycling- Righteous or Rubbish?" 87.

³⁸ Richard Porter. "The Economics of Waste." In *Garbage and Recycling*, by Mitchell Young, 100-106. Farmington Hills: Greenhaven Press, 2007. 101-102.

³⁹ Richard Porter. "The Economics of Waste."102.

⁴⁰ Kivi Leroux Miller. "Is Recycling Disposable." 70.

⁴¹ Daniel Benjamin. "The Eight Myths of Recycling."77.

⁴² Kivi Leroux Miller. "Is Recycling Disposable."69.

which “has provided curbside recycling for more than ten years, yet its residential recycling rate has never surpassed 7 percent.”⁴³ Even though recycling rates may be low, larger cities that have recycling programs are less inclined to cut the recycling program because individuals who do recycle are strong supporters.⁴⁴

Different levels of government have attempted to address resource conservation and recycling with varying success. The United States does not have an over-arching federal program for recycling; therefore, states and cities must initiate and manage recycling.⁴⁵ States and cities have handled the recycling program in a variety of ways. Local governments have initiated curbside recycling to reduce municipal waste. Advocating for any program within cities are two different groups: inside individuals (e.g., council members, budget directors, and manager) and outside groups (e.g., volunteers, non-profits, and advocacy groups). While both groups are critical to the implementation of the recycling program, it is clear that inside individuals are able to have more influence over the creation and implementation of the program.⁴⁶ Outside groups can provide the spotlight necessary for the public to support the recycling program, but since they have limited access to the government officials and do not have

⁴³ Kivi Leroux Miller. "Is Recycling Disposable." 72.

⁴⁴ Kivi Leroux Miller. "Is Recycling Disposable." 69.

⁴⁵ Kivi Leroux Miller. "Is Recycling Disposable." 69.

⁴⁶ Emma Taylor. “Building community with recycling: A case study of two small islands in British Columbia, Canada.” (PhD diss., University of Victoria , 2005.)

the means move from discussion to implementation, they have a limited role in recycling program initiation.⁴⁷

Little research has been conducted on recycling programs of different scales. As stated earlier, larger cities have been more successful at keeping their recycling programs, and smaller cities have had a harder time starting recycling programs. While there is much research on the effectiveness of recycling programs within larger cities, or recycling programs in general, the lack of research on recycling programs within smaller cities is a defect of the current scholarship. It is important for the success of recycling programs, environmental awareness, and resource conservation to have small city recycling programs. Therefore, more research is needed on small city recycling.

THESIS

This thesis will examine two small cities' experiences with recycling to determine the impediments to creating and implementing a viable program, and to offer a roadmap to the creation of recycling programs within small cities. The research question that will be answered within the paper is: why is one city more successful than the other in its efforts to implement a sustainable recycling program? My hypothesis is that Moses Lake has been more successful at implementing a recycling program for two main reasons: first, Moses Lake's recycling program allows for variation in the price of recyclables and does not depend upon a revenue stream for the recycling program to exist; second, Moses Lake has created an education program about recycling within the city to educate and encourage citizens to participate in the recycling program.

LITERATURE REVIEW

⁴⁷ Emma Taylor. "Building community with recycling".

Many small towns depend upon community groups to manage a recycling program to address the needs of the community.⁴⁸ While there has been little research done on small town curbside recycling, these recycling programs are comparable to community recycling groups, or recycling programs begun and managed by non-city officials. More research has been performed on community recycling groups, which manage programs within cities, on large, publicly maintained recycling programs; these reports will help establish a foundation for my research. Recycling is an issue that most cities will address, given time, even though there are other issues that could take its place: most notably, sanitation and waste collection reports.⁴⁹ Because of the importance of recycling programs within cities, large and small, it is necessary to understand more fully the research being done on small town recycling.

The success of recycling programs is dependent upon three critical areas: education of the public about recycling within the city; the number of active participants within the recycling program; and the available funding, whether that is through municipal contributions, private donations, or selling the recyclables. Recycling may sound simple, but each city has developed its own system, which seeks to work for the particular community and city. Understanding the benefits and defects of recycling

⁴⁸ J. Bridger and A. Luloff. "Toward an interactional approach to sustainable Community development." *Journal of Rural Studies*, 15 (1999): 377-387.

⁴⁹ J. L. Price and J.B. Joseph. "Demand management - a basis for waste policy: a critical review of the applicability of the waste hierarchy in terms of achieving sustainable waste management." *Sustainable Development*, 8 (2000): 96-105. ; Emma Taylor. "Building community with recycling".

programs, especially in small towns, is important, if one expects to be able to begin recycling programs in other small towns across the country.

While these criteria for success may seem attainable, Doug McKenzie-Mohr argues that changing recycling behavior within a city, with the goal of creating a sustainable program, can be very difficult, because individuals within a city are aware that recycling is a benefit to the community, but may not change their behavior to reflect that sentiment.⁵⁰ First, then, education is critical to whether a recycling program is going to succeed. As Raymond Gamba and Stuart Oskamp explain, “[r]elevant recycling knowledge was the most significant predictor of observed recycling behavior.”⁵¹ In other words, the more citizens understood about the recycling program, the more likely they were to participate; “[i]nitiatives to promote behavior change are most often effective when they are carried out at the community level and involve direct contact with people.”⁵² It is not enough that recycling programs put up advertisements about their program or send brochures to individuals about how to participate; instead, direct interaction with community members is necessary to encourage individuals to participate

⁵⁰ Ph.D. Doug Mckenzie.Mohr. *Fostering Sustainable Behavior*. 3rd . Gabriola Island : New Society Publishers , 2011.

⁵¹ Raymond Gamba and Stuart Oskamp. "Factors Influencing Community Residents' Participation in Commingled Curbside Recycling Programs." *Environment and Behavior* 26. (September 1994): 587-612. Accessed September 15, 2011. Academic Search Complete (doi:10.1177/0013916594265001).

⁵² Ph.D. Doug Mckenzie Mohr. *Fostering Sustainable Behavior.*, 3.

and stay active.⁵³ There is a lack of agreement on the best method to inform and educate constituents of the recycling program in order to increase participation. A program that may have worked in one large city may not work for a small population, due to different cultures, mindsets, and expectations from the city.⁵⁴ Different methods have been used, such as price incentives, to encourage citizens to be interested in the program; however, different incentives may or may not work within different communities.⁵⁵ Understanding how small cities increase participation is important to addressing the needs of millions of Americans.

Paula Vicente and Elizabeth Reis examine how to change people's involvement in recycling programs. They determined that positive attitudes toward recycling and information about the program are "important factors in explaining recycling participation."⁵⁶ However, positive attitudes and education are not sufficient. An example is that "an investigation of differences between recyclers and non-recyclers

⁵³ Ph.D. Doug Mckenzie Mohr. *Fostering Sustainable Behavior.*, 5.

⁵⁴ Ph.D. Doug Mckenzie Mohr. *Fostering Sustainable Behavior.*, 3

⁵⁵ Seonghoon Hong, Richard Adams, and Alan Love. "An Economic Analysis of Household Recycling and Solid Wastes: THE Case of Portland, Oregon." *Journal of Environmental Economics and Management* 25 (November 1992): 136-146, 136.

⁵⁶ Vicente, Paula, and Elizabeth Reis. "Factors influencing households' participation in recycling." *Waste Manag Resources*. 26 (April 2008): 140-146. Accessed September 15, 2011. Academic Search Complete (doi:10.1177/0734242X07077371), 140.

found that they did not differ in their attitudes toward recycling.”⁵⁷ People may know that recycling is beneficial; however, encouraging people to act on that knowledge can be difficult. Consequently, awareness, coupled with an intensive education campaign about the recycling program, can be more effective at increasing participation: it must be active, informative, and personal to achieve success.⁵⁸ However, the research conducted about recycling does not address how small towns educate their population about recycling or if there is a difference in how small towns view recycling generally. In addition, much of the research is performed on communities that already have successful operations, which does not explain how nascent recycling programs can educate their population to implement a successful program.

Another important aspect to the implementation and success of a recycling program is the active participation of the community. A study conducted in 2008 explained that when citizens had to travel in order to recycle, participation rates decrease significantly.⁵⁹ However, when curbside recycling was provided, participation rates

⁵⁷ Ph.D. Doug Mckenzie Mohr. *Fostering Sustainable Behavior.*, 5

⁵⁸ Paula Vicente and Elizabeth Reis. "Factors influencing households' participation in recycling." *Waste Manag Resources*. 26 (April 2008): 140-146. Accessed September 15, 2011. Academic Search Complete (doi:10.1177/0734242X07077371).

⁵⁹ Henning Best. “Structural and Ideological Determinants of Household Waste Recycling: Results from an Empirical Study in Cologne, Germany”, *Nature and Culture* 4, no. 2 (2009): 167-190. Accessed September 4, 2011. Academic Search Complete (doi:10.3167/nc.2009.040204), 185.

increased.⁶⁰ Therefore, this study will focus on curbside recycling, which produces better participation. As Taylor in 2005 reports, “Communities are often in the best position to make decisions on matters that concern them most, and the high probability of repeated interaction within a community means that members have a strong incentive to act in socially beneficial ways.”⁶¹ Such behavior can create excitement and perpetuate involvement with the community to participate in the program. This excitement, for the benefit of the community, may encourage constituents to ask for a recycling program, but very little research is done on the beginning stages of a recycling program, especially within communities that possess smaller population densities. The following analysis will provide more insight into the beginning stages of small town recycling. J. Gutberlet explains the social benefits, when she writes, “The few experiences [of recycling], however, highlight that besides redirecting solid waste into production streams, recycling also builds citizenship and contributes to creating community.”⁶² While what researchers mean by a “sense of community” is not explained fully, it is understood that active participation of citizens can encourage others to become active.

⁶⁰ Henning Best. “Household Waste Recycling: Study in Cologne, Germany”, 181.

⁶¹ P. Somerville. “Community governance and democracy.” *The Policy Press*, 33 no. 1, (2005) 117-144.; Emma Taylor. “Building community with recycling:”

⁶² J. Gutberlet. “Empowering collective recycling initiatives: video documentation and action research with a recycling co-op in Brazil.” *Resources, Conservation and Recycling*, 52 no.4 (2007): 653-658. ; Emma Taylor. “Building community with recycling:”

While recycling can be beneficial by reducing trash that would have otherwise be sent to the landfill, the fact remains that it is costly to cities and organizations. Rodman D. Griffin reports that

Mandatory recycling policies put an extra burden on municipal finances at a time when budgets are strained. Recycling programs are efficient when they are able to turn a profit [...] but most of these mandatory curbside programs are not profitable. They are simply subsidizing the collection and processing of materials that probably should be buried or burned.⁶³

The cost of recycling has many variables, but the cost of the program itself and the selling of recyclables are some of largest cost concerns. First, starting a recycling program requires an enormous expenditure. This is one of the reasons why small towns cannot easily install a recycling program.⁶⁴ An example is that “to introduce recycling collection in Los Angeles, the city had to add 600 diesel trucks to the 1,000-truck fleet already in operation.”⁶⁵ Adding the trucks, personnel, and facilities can be prohibitive to any city or organization wishing to create a recycling program. This is even truer for smaller cities. As Mary H. Cooper explains,

On average, curbside recycling programs tend to cost slightly more than they earn from the sale of collected materials. According to Franklin Associates Inc., a Prairie Village, Kan., research firm that conducts solid waste studies for the EPA,

⁶³ Rodman D. Griffin. "Garbage Crisis." *CQ Researcher* 2, no. 11 (April 1992). Accessed September 30, 2011. CQ Researcher.

⁶⁴ Emma Taylor. "Building community with recycling".

⁶⁵ Rodman D. Griffin. "Garbage Crisis." *CQ Researcher* 2, no. 11 (April 1992).

residential recycling programs cost on average \$2 a month per household. 'The cost varies widely from community to community,' says Bill Franklin, the firm's chair. 'But recycling costs are a very small percentage of the total cost of solid waste removal, which averages \$10 a month per household.'⁶⁶

It is assumed that recycling must pay for itself because it is seen as an additional, unnecessary program. While it does not tend to be profitable, it is only a small percentage of solid waste removal. Therefore, many cities find continuing or increasing services within the recycling program difficult. Cities that have integrated recycling into their municipal solid waste removal programs find it difficult to measure the actual savings that recycling programs may generate. Recycling may reduce the amount of trash going to the landfill, but quantifying that benefit against the cost of the actual recycling is very difficult.⁶⁷ Griffin explains,

If it costs \$100 a ton to dump garbage in a landfill, recycling a portion of it at \$130 a ton actually costs only \$30 more than burying it [...] but at traditional dumping fees of only \$25 a ton or less, the same recycling system becomes a \$105-a-ton option -- one politically much more difficult to sustain over time.⁶⁸

Therefore, creation of an economy of scale, or an increase in efficiencies due to an increase number of products being produced, is one of the main reasons why larger cities have implemented successful recycling programs. Larger cities or cities near an

⁶⁶ Mary H. Cooper. "The Economics of Recycling." *CQ Researcher* 8, no. 12 (March 1998). Accessed September 30, 2011. CQ Researcher.

⁶⁷ Richard Porter. "The Economics of Waste." In *Garbage and Recycling*, 105.

⁶⁸ Rodman D. Griffin. "Garbage Crisis." *CQ Researcher* 2, no. 11 (April 1992)

economy of scale for recycling are able to save money in the overall costs because they have more recyclables to sell, which better compensates for the expenditures for recycling.⁶⁹ Also, a large point that is not addressed in the studies is that larger cities tend to be near collection and distribution sites, meaning that the transportation costs of recyclables tend to be lower for these cities. However, small cities or towns are often far away from these centers, increasing the cost of gas, personnel, and trucks. Therefore, cities that are isolated, like islands or small rural cities will have a much more difficult time funding the program.⁷⁰

The other challenge to the profitability of recycling is the price of the recyclables themselves. Recyclables have a volatile market:

Prices often gyrate when unusual weather, technological advances or other events cause sudden gluts or scarcities of a given commodity. When an oversupply of paper caused the booming market for recycled paper to collapse in the mid-1990s, a number of paper-processing facilities went under, and some recycling operators simply delivered the papers to the local landfill.⁷¹

The price fluctuation causes a large concern for cities because they cannot depend on the price of recyclables to cover the cost of recycling. However, some materials are more likely to turn a profit than others are and some cities have limited their recycling to reflect that sentiment. Daniel Benjamin “an economics professor at Clemson University in South Carolina, argues that mandatory recycling programs force people to squander

⁶⁹ Rodman D. Griffin. "Garbage Crisis." *CQ Researcher* 2, no. 11 (April 1992)

⁷⁰ Emma Taylor. “Building community with recycling”.

⁷¹ Mary H. Cooper. "The Economics of Recycling."

valuable resources in a quixotic quest to save what they would sensibly discard."⁷² In other words, he believes that the cost of recycling is too high for most materials and only the high end items should even be considered, like aluminum and steel. However, scientists generally agree that recycling most items is beneficial and does save resources.⁷³ Nonetheless, the volatile price of recyclables is problematic.

To minimize the volatile market, many recycling groups will only take items that have the highest return.⁷⁴ "Lynn Scarlett, vice president for research at the Reason Foundation, a nonprofit think tank in Los Angeles, California [states that,] where the material is of uniform quality, collected in large quantities and easy to isolate from contaminants, there are net benefits to recycling."⁷⁵ Guaranteeing the necessary requirements that Lynn Scarlett addresses is almost impossible because people are prone to error and will place items that should not be recycled in the recycling bins, decreasing the value of the material. Many U.S. cities have considered this and have created large fines for individuals who do not put recyclables in the correct bin.⁷⁶ While scrap yards continue to make considerable profits by selling metal, many plastic and paper recycling

⁷² Jennifer Weeks. "Future of Recycling." *CQ Researcher* 17, no. 44 (December 2007).

Accessed September 30, 2011. CQ Researcher.

⁷³ Kivi Leroux Miller. "'Is Recycling Disposable.'" In *Garbage and Recycling*, by Mitchell Young, 68-75. Farmington Hills : Greenhaven Press, 2007, 69.

⁷⁴ Asa Janney. "Mandatory Recycling." In *Garbage and Recycling*, by Mitchell Young, 93-99. Farmington Hills: Greenhaven Press, 2007, 95.

⁷⁵ Mary H. Cooper. "The Economics of Recycling."

⁷⁶ Economist Intelligence Unit. "US and Canada Green City Index."

agencies have at one point had to pay to have their recyclables to be taken, because there was no market.⁷⁷ While the problem of price is addressed above, it is important to note that these problems are not easily solved. Small towns, in particular, are particularly sensitive to the volatile recyclable market. While larger cities can assume some losses in recycling because of their larger budget, smaller towns and cities often cannot do so. It is important to address how recycling programs can be initiated and continued in small towns, given the volatile prices of recyclables. This thesis will address these concerns in Chapter 3.

Many cities and organizations must depend upon significant citizen participation and donations in order to continue the program. While cities and organizations realize the large cost of the program, Richard C. Porter explains that citizens accept the cost because many believe that “recycling is necessary for a sustainable society.”⁷⁸ This does not mean that citizens are willing to support an inefficient program—or even that they will participate in the program. However, in order for the organization to be successful, it must have a strong educational element to increase participation. Education, participation, and costs are interrelated: each is necessary to create and sustain a recycling program within any community. While we know too little about small town recycling, these three points may especially important for smaller towns, which lack an economy of scale and are more dependent upon maximum participation. While polls suggest that there is “high degree of public interest in recycling” across the nation,

⁷⁷ Asa Janney. "Mandatory Recycling." , 95.

⁷⁸ Richard Porter. "The Economics of Waste." 102.

putting that interest into action can be difficult.⁷⁹ The difficulties are only increased when the cost of recycling is put into the equation.

Taylor explains the issue well, “It is not possible for islands [small cities] to manage increased amounts of waste, so the challenge is to create policy frameworks that close ecological cycles so that wastes become resources and responsibility is shifted from individuals to industry and producers.”⁸⁰ Addressing the large gaps in the research regarding small cities is necessary to promote recycling, conserve resources, and create a better community.

METHODOLOGY

Using a qualitative methodology, I have examined two cities with similar populations and size of the city management. The cities analyzed were Moses Lake, Washington and Helena, Montana. Both cities have fewer than 30,000 citizens. I chose this number because I wanted to analyze cities of a size that recycling scholars have not examined. Most research conducted on recycling programs is done within cities of over 200,000 citizens. While I could have chosen a larger population, I wanted to focus on small towns that still had a large enough population to make recycling a viable option. A town of 10,000 would be too small to implement a viable recycling program. However, 30,000 is an arbitrary number that I resorted to for this method because there is too little research to determine at what size of population recycling programs fail. Both cities have

⁷⁹ Mary H. Cooper. "The Economics of Recycling." *CQ Researcher* 8, no. 12 (March 1998). September 30, 2011. CQ Researcher. ; Best, Henning. “Household Waste Recycling: Study in Cologne, Germany”, 181.

⁸⁰ Emma Taylor. “Building community with recycling”.

attempted a recycling program and I have assumed that their population size makes recycling programs possible. The 2010 U.S. Census writes that Moses Lake's population is 20,336 citizens and Helena has 28,190 citizens.⁸¹ Since Moses Lake is a third slightly smaller city, the fact that Moses Lake was able to install a recycling program within the last two years is impressive. Someone may contend that Montana's overall population is significantly smaller than Washington, which allows Moses Lake to be more successful. However, Moses Lake's surrounding area is of similar population density to Montana. Since larger cities that are near either Moses Lake or Helena are at least ninety miles away, both cities are in an isolated city environment. Therefore, the population of the overall state or location is not significant. Both cities have similar demographics in gender, age, and ethnic diversity; none of the figures shows over a ten percent difference within the population.⁸² Overall, the two cities have a very similar population.

The political ideology of the cities, while not identical, will not present a problem for the analysis. First, both cities have non-affiliated elections for city commission, which tend to make city issues non-partisan. Also, political parties are not as significant at the local level because they do not have as much influence on local policies and are non-partisan elections.⁸³ Another contention that may be raised is that Helena is the

⁸¹ United States Census Bureau . *2010 Census Interactive Population Map*. August 2011.

<http://2010.census.gov/2010census/popmap/> (accessed August 29, 2011).

⁸² United States Census Bureau . *2010 Census Interactive Population Map*.

⁸³ Elisabeth Gerber and Daniel Hopkins. "When Mayros Matter; Estimating the IMPact of Mayoral Partisanship on City Policy." *American Journal of Political Science* 55, no. 2 (Aprill 2011): 32-339. 335.

capital of Montana, which may alter the political ideology within the city. While Helena is the state's capital, Helena is not heavily influenced by state politics. The legislature only meets every other year and the legislators are non-professional. Therefore, citizens not living in Helena do not tend to attempt to influence policies within city limits.

Both cities have similarly sized city councils. Moses Lake has five city commissioners, a deputy mayor, and a mayor. Helena's city council consists of four city commissioners, and a mayor. However, the majority of power in implementation of policies resides with the city manager, who is chosen by the city commissioners. The commissioner serves a four-year term in both cities. The city commissioners will participate within multiple committees for the city and will help formulate policies, which are then proposed to the city council. The city manager implements all policies approved by the city council.

My research analyzes interviews, city meeting minutes, city financial records, newspaper articles about recycling programs, and the work of city officials and organizations attempting to address and improve recycling. I conducted interviews during the week of August first through the seventh with Moses Lake city officials and interviewed during the months of August and September Helena city officials. The officials included city commissioners, city managers, and other public servants within each city. Also, I conducted interviews with outside organizations that advocate for recycling with each city. The interviews lasted between a half hour to one hour.⁸⁴ The questions attempt to analyze the chronology of events that led to the passage or lack of passage of a recycling program within the two cities. While the questions might seem

⁸⁴ See Appendix A for the questionnaire.

repetitive, each question attempts to analyze the purpose of the recycling program and learn the benefits or costs of the program to the city and its citizens from the perspective of the interviewee. The questions have four main themes, questions about the person (1, 2, 16), state of recycling within the community (1-5), policy process (6-9), and policy evaluation (10-15). Much research has been done through reviewing city reports and documents, board meetings minutes, and the work of different non-profits attempting to address and improve waste management. My analysis will explain why Moses Lake has installed a recycling program successfully in 2010, while Helena, while having a recycling program, has not been successful at advertising, implementing, or expanding its program.

LIMITATIONS

The most significant limitation of my methodology is that I am only analyzing two small cities in the Western half of the United States. Therefore, it is difficult to determine if my results would apply to small cities outside of the west. There are two other concerns about the cities being located in the west. First, western cities are more isolated than eastern cities; as has been indicated above, this would make it more difficult for western cities to have successful recycling programs. Second, and paradoxically, western cities have been recognized as being greener and more environmentally friendly than eastern cities.⁸⁵ While limited in scope to the west, cities within the west will certainly benefit from this research.

⁸⁵ Economist Intelligence Unit. "US and Canada Green City Index."

Another limitation is that the interviews are limited to the perspective of the interviewee. It is difficult to determine whether their perspective is correct when analyzing the citizen's perspective on recycling. The people interviewed, especially city officials, have an interest in representing themselves as helping the city and performing their duties and policies effectively. My interviews within Helena were during the beginning of an election year for city commissioners, resulting in one city commissioner retiring from service this year and another attempting to be re-elected. While not a significant limitation, the retired city commissioner does not have as much interest within the city and the commissioner attempting to be re-elected has more interest in appearing as if they have addressed city concerns.

PLAN OF THE WORK

In Chapter 2, I will analysis the data collected from the two cities. Also, I will explain the reason why Moses Lake's recycling program has been more successful than Helena's recycling program. In chapter 3, I will offer a public policy proposal to install a recycling program in small cities like Helena.

Chapter 2: The Analysis and Comparison of the Cities

The literature review showed three critical areas of analysis: education, participation, and costs. I will first provide an explanation of each city's recycling program by explaining its history and current operations. Then, an analysis of how the city is meeting the three critical areas will follow. After both cities have been analyzed individually, I will compare the cities to one another and explain which city better satisfies the three criteria.

Helena

Helena began a recycling program in 1992 by collecting four materials: paper, cardboard, aluminum and steel containers, and appliances.⁸⁶ The city had just filled a landfill and was going through the expensive process of sealing it and attempting to meet Title D regulations.⁸⁷ Both the county and the city wanted to find a way to divert waste so that the new landfill that was being built and would be used by both the city of Helena and county residents would last longer than the previous landfill.⁸⁸ The compromise was to allow the transfer station, which was to be paid for city and county government, to offer recycling. Helena was also encouraged to expand upon the recycling program offered at the transfer station. It has done this throughout the decade. Helena has begun to collect batteries, used oil and paint, glass, and many other items at the transfer station.

⁸⁶ Anderson-Montgomery Consulting Engineers . *Residential Recycling Program*

Enhancement Study for the City of Helena. Draft , Helena: City of Helena, 2009.

⁸⁷ Title D Regulations, implemented by the EPA, increased the environmental standards for landfills, this made closing or opening a landfill more expensive. Alles, Ronald J, interview by Sarah Brown. *City Manager* (August 29, 2011).

⁸⁸ Alles, Ronald J, interview by Sarah Brown. *City Manager* (August 29, 2011).

Helena's recycling program collects sixteen different materials at either drop off sites⁸⁹, the transfer station, or through the blue bag program: "newspapers, magazines, aluminum and steel cans, glass, corrugated cardboard, appliances, scrap metal, tires, waste oil and antifreeze, automotive batteries, yard wastes, Christmas trees, bio solids (wastewater treatment sludge), and latex paints."⁹⁰ All of the programs are free of extra charges to residents, however, only the transfer station accepts all of the items. Residents receive a 1.5-ton permit for the transfer station, in addition to the weekly garbage collection.⁹¹ All of the programs for recycling are paid through solid waste and sanitation fees and taxes; the 2011 fee was \$175 per year or \$14.50 a month. The city attempts to keep the fees as low as possible. However, the fees have increased slightly over the last decade to help pay for the monitoring of the old landfill and the construction and maintenance of the new landfill. The transfer station does not charge for recyclables being dropped off.

The blue bag program is Helena's curbside recycling program. In order to participate in the blue bag program, residents must first call the city and indicate that they

⁸⁹ The drop off sites are locations throughout the city where large, usually metal, containers are placed by the city. Constituents can bring their recyclables, such as aluminum cans, newspapers, and cardboard, to these locations rather than going to the transfer station. Constituents do not have to pay a fee to drop off the materials.

⁹⁰ Anderson-Montgomery Consulting Engineers . *Residential Recycling Program Enhancement Study*.

⁹¹ City of Helena . *Recycling*. 2011. <http://www.ci.helena.mt.us/departments/public-works/solid-waste/recycling.html> (accessed July 27, 2011)

would like their recyclables picked up.⁹² Then the constituent may pick up the blue bags from designated sites. Each of the materials recycled must be separated into a different bag.⁹³ Helena's website states that the blue bags are picked up at the beginning of every month.⁹⁴ The city has a hotline that can be called if residents have questions, or they can look online at the city's website. Also, a recycling coordinator was hired recently at the transfer station to increase the publicity for and efficiency of recycling within Helena.⁹⁵ Most of the recycling within Helena is done through the transfer station.

Once the recyclables are stockpiled and compacted at the transfer station, most are sold to Pacific Steel, with which Helena has an established contract to sell recyclables. At Pacific Steel, the recyclables can be sold to other companies for recycling use, melted down and re-used at the site, or burned for energy. Helena has had contracts with many different firms. Many, however, have left the area or have closed down due to lack of funds or enough recyclable material.

Helena has continually attempted to improve the program and in 2009 had a private contractor provide the city with a Residential Recycling Program Enhancement Study. However, the project never made it past the draft stage due to other more pressing

⁹² City of Helena. *Recycling*. 2011.

⁹³ City of Helena. *Recycling*. 2011.

⁹⁴ However, the city manager states that the bags are picked up bi-monthly, the chaotic structure and lack of clarity regarding Helena's recycling program will be discussed later in the chapter.

⁹⁵ Ronald J. Alles. interview by Sarah Brown. *City Manager* (August 29, 2011).

matters and the controversy surrounding the study.⁹⁶ City commissioners thought that allowing an outside group to perform the study was not in the best interest of the city. Also, the city did not want to privatize either the garbage or recycling programs.⁹⁷ Attention was diverted from the study and it was never finalized.⁹⁸ Therefore, the commission never voted on passing further measures to improve the curbside program.

Helena has a fairly comprehensive recycling program when the transfer station and drop off sites are considered. Yet, when analyzing the curbside recycling program, Helena's program is lacking in funding, innovation, and organization. All of these concerns will be addressed in the analysis of the program below.

Helena also has a variety of different groups that offer recycling programs. The city of Helena works closely with S.A.V.E. (Student Advocates for Valuing the Environment) which provides free plastics drive every other month for Helena residents and provides the recycling for most community events.⁹⁹ S.A.V.E. provides a recycling guide for residents that describe different locations and businesses that provide recycling services for constituents. The guide also explains what items are taken and how they should be prepared. However, S.A.V.E. does not disclose that the city of Helena has a

⁹⁶ Matt Elsaesser. interview by Sarah Brown. *City Commissioner & Executive Director* (August 30, 2011).

⁹⁷ Matt Elsaesser. interview by Sarah Brown.

⁹⁸ Matt Elsaesser. interview by Sarah Brown.

⁹⁹ Matt Elsaesser. *City Commissioner & Executive Director; S.A.V.E. Recycling in Helena* . 2007.

residential curbside pick-up program.¹⁰⁰ S.A.V.E. also runs a recycling program for Helena businesses, which picks up glass, cardboard, plastic, tin, aluminum, and paper.¹⁰¹ The program costs \$10-\$25 a month depending on the frequency of the pick-up and amount of material.¹⁰²

Helena also has Helena Recycling LLC, which is a part-time recycling business that provides curbside recycling programs for residents, businesses, and schools.¹⁰³ The program costs range from \$15-\$25 a month, depending on the size of the bins, and is picked up every other week.¹⁰⁴ Recycling LLC will also provide different size bins for a one-time charge of \$35 or will allow residents to use their own bins.¹⁰⁵ Recycling LLC will pick up cardboard, plastics, aluminum, steel, and paper. The city of Helena is the only group that will allow glass to be recycled. All of these organizations work independently, but may receive or provide help to the city for events or other projects.

Montana does not have a culture of recycling; as the Government of Montana explains in a 2011 summary “the state is rural, has limited recycling infrastructure, and is

¹⁰⁰ S.A.V.E. *Recycling in Helena* . 2007. <http://www.savemobile.org/Recycle/recycling.helena.shtml> (accessed August 1, 2011).

¹⁰¹ S.A.V.E. *Recycling in Helena* . 2007.

¹⁰² S.A.V.E. *Recycling in Helena* . 2007.

¹⁰³ Helena Recycling. *Helena Recycling* . 2011. <http://helenarecycling.com/> (accessed August 27, 2011).

¹⁰⁴ Helena Recycling. *Helena Recycling* . 2011.

¹⁰⁵ Helena Recycling. *Helena Recycling* . 2011.

distant to markets.”¹⁰⁶ All of these factors are interconnected and help explain the difficulties cities encounter when attempting to recycle. Montanans produce 7.5 lbs. of trash per day; however, the national average is 2.5 lbs. per person.¹⁰⁷ While it is not explained, why Montana is five pounds above the national average, reducing the amount of garbage produced or diverting that waste is a challenge that both Helena and Montana must confront. When Helena built the transfer station, it was understood that the transfer station had to function as new infrastructure for recycling. Not only is recycling encouraged in Helena, but recycling within Montana is growing as more cities begin to offer recycling programs, which will reduce the distance between markets for recyclables.

Now that the basics of Helena’s recycling program are understood, I will examine Helena’s residential curbside recycling program in view of components of a successful recycling program: education, participation, and cost. A similar treatment of Moses Lake’s recycling program will follow.

Education

Helena’s education efforts about the blue bag program and the benefits of recycling are limited. Residents can visit the website to learn about the various programs that exist within the city, however, the blue bag program is not even mentioned until the fourth paragraph,¹⁰⁸ making the program seem less important. There is a link to an

¹⁰⁶ Government of Montana . *2011 Recycling and Waste Diversion Summary*. Recycling Summary, State of Montana , 2011.

¹⁰⁷ Government of Montana . *2011 Recycling and Waste Diversion Summary*.

¹⁰⁸ City of Helena . *Recycling*. 2011.

explanation of the blue bag program on the city's website, but it does not explain the benefits for the city or the constituent.¹⁰⁹ Given that most Montana discards trash at a much higher rate than the rest of the nation, it is clear that Helena needs to spend more time providing an explanation of why recycling should occur. In addition to the website, the city does not provide pamphlets or newsletters in city buildings to teach residents about the curbside recycling program. Therefore, citizens who may go to the transfer station or drop off sites may never know about the recycling program. Citizens can call the city's hotline to learn about the program, but only if they know it exists. It seems doubtful that they do, given the low participation rate.

The city works closely with S.A.V.E. Indicative of the close relationship is that the city depends upon the organization to educate the population about the benefits of recycling and where residents can go to recycle.¹¹⁰ Matt Elsaesser, the executive director for S.A.V.E., is also a city commissioner, a fact that explains the close relationship with the city and S.A.V.E. He states that the beneficial activities of S.A.V.E. are the organization's education and community awareness programs about recycling.¹¹¹ S.A.V.E.'s website explains what can be recycled in Helena, where items can be recycled, and hopes to show the high demand for recycling, especially recyclable plastics.¹¹² Since S.A.V.E. is an independent operation, it does not need to highlight the city program, nor does it attempt to encourage citizens to use the free blue bag program.

¹⁰⁹ City of Helena. *Recycling*. 2011.

¹¹⁰ Matt Elsaesser. *City Commissioner & Executive Director*.

¹¹¹ Matt Elsaesser. *City Commissioner & Executive Director*.

¹¹² Matt Elsaesser. *City Commissioner & Executive Director*.

Instead, on the website S.A.V.E. directs residents to Helena Recycling, LLC, a private corporation that offers many of the same services as the city, but for a small monthly fee. S.A.V.E. advertises that the guide on their website is “The Most Comprehensive Recycling Guide Helena Has to Offer Leading Into the New Year!”¹¹³, but the introduction to recycling options within Helena does not mention the blue bag program, or provide an explanation of the bluebag program, until the bottom of the page. While there is a side link to the blue bag program, most individuals would not know what the program is, and once inside the link, the explanation of the program is confusing. It is clear that the blue bag program is not prioritized by either the city or S.A.V.E.

The city depends upon these non-governmental organizations to increase awareness. Another avenue for education is the local paper, the Independent Record. However, much of the publicity that occurs within the Independent Record is either on special days, such as Recycling Day, or during a plastics drive. The city commissioners and city manager recognize that education has not been properly addressed and are attempting to remedy the problem by designing an article and leaflet that will appear in the newspaper. However, since the interviews in August 2011, no article has been written about the blue bag program. An article did appear about Helena’s expanding recycling program, which will now collect electronic waste at the transfer station and has two new drop off sites within Helena, but there was no mention of the blue bag program. Helena Recycling, however, was mentioned as a service that provides curbside services to residents.

¹¹³ S.A.V.E. *Recycling in Helena* . 2007.

It was clear throughout the interviews with the city management that Helena's recycling program focuses on the transfer station rather than the blue bag program. The failure to promote curbside recycling is debilitating to the blue bag program. When the city manager was asked why Helena did not have a recycling program, he immediately disagreed and stated that the transfer station had an extensive recycling program, which accepts many items with which people may not be familiar.¹¹⁴ Insofar as the city is concerned with education, it seeks to explain how the city can pay for an expanding the program without increasing costs to constituents.¹¹⁵ While recognizing that education about the blue bag program needs to increase, the city commissioners have failed to enact an effective education program.

Another educational issue is the lack of understanding within the city about the benefits and effectiveness of recycling programs. Matt Elsaesser states that there is a lack of expertise about recycling within the city.¹¹⁶ This is problematic, because while the city officials are attempting to redesign the program to increase participation, they themselves do not understand the intricacies of recycling. The one attempt at increasing the education of the commissioners, through the private study, was stopped before it could be finalized. The private study was seen as controversial to the commissioners and therefore, the findings of the draft were not taken seriously.¹¹⁷ Also, other issues about sanitation took precedent over the findings of the study. Many of the commissioners

¹¹⁴ Ronald J. Alles. interview by Sarah Brown. *City Manager* (August 29, 2011).

¹¹⁵ Ronald J. Alles. interview by Sarah Brown. *City Manager* (August 29, 2011).

¹¹⁶ Matt Elsaesser. *City Commissioner & Executive Director*.

¹¹⁷ Matt Elsaesser. *City Commissioner & Executive Director*.

assert that high cost is the main deterrent to recycling programs, but they have not isolated the blue bag program costs or participation; therefore, they do not know if costs could be minimized in other areas. All of the commissioners highlight other recycling programs within Montana that they would like to model, but none of the commissioners states the same city. The lack agreement among members of the city management has also limited the ability of the commissioners to educate the public effectively about the program.

The city has begun to increase education to the public about the blue bag program by hiring a part time recycling coordinator to be in charge of publicity for the program. Since the manager was just hired, the effectiveness of the position cannot be evaluated. However, the lack of new material since the August 2011 interviews shows the commitment to programs other than the blue bag program.

Participation

Participation within the blue bag program is low. However, there are no exact numbers on how many people are actively participating within the program. The private study done in 2009 cited 150 people participating, however, city commissioners have claimed from 300 participants to 600.¹¹⁸ No matter what number is shown for participation, it is clear that a city of 29,000 should have more than 600 participants, especially since the program is over a decade old. Participation is low within Helena for a number of reasons: education about the program is low, the program is not user

¹¹⁸ Ronald J. Alles. *City Manager*; Elsaesser, Matt. *City Commissioner & Executive Director*; Anderson-Montgomery Consulting Engineers . *Residential Recycling Program Enhancement Study*.

friendly, and there is strong competition with other organizations that maintain programs that are more effective. Even one of the city commissioners stated that he did not use the blue bag program, but instead collected recyclables until he had enough for a full truckload to take to the transfer station.¹¹⁹ If a city commissioner does not want to use one of the programs that he is helping to improve, it is likely that many residents will feel the same way.

A recycling program needs to be user friendly in order for citizens to choose to participate. Helena's use of drop off-sites is problematic because as explained in the literature review, curbside programs have higher rates of participation. Moreover, the curbside program needs to provide all of the necessary materials to the users. Helena requires that participants pick up the blue bags from either the transfer station (where they would drop off trash or recyclables, thus decreasing the need for the blue bag program) or from the Independent Record. Another issue with the bags is that all of the recyclables need to be separated. Recycling technology has been improved so that consumers no longer have to separate their items, but instead can put all of the recyclables into one bin and have the items sorted at the transfer station. However, city commissioners did not mention that they knew about or had this technology within Helena. Requiring residents to sort their own recyclables requires more time, is viewed as a hassle, and uses more than 36 blue bags per year. It is also unclear why steel and aluminum are separated since both metals are going to Pacific Steel. Another challenge to participation is that residents need to call a hotline in order to enroll. While this is not a large inconvenience, the city has not offered any other options: email, online registration,

¹¹⁹ Dan Ellison. interview by Sarah Brown. *City Commissioner* (September 1, 2011).

or signing up by person would be more convenient.¹²⁰ This year, they are even requiring people who are already signed up to call in and reenlist in the program.¹²¹ This is a very inconvenient for the few people who support the program.

Finally, the largest burden for participation within Helena is that the program only operates once a month. People are required to stockpile their recyclables every month and if they get too many recyclables to be stored within their house, they must either drop them off at sites throughout Helena, or throw them away. Helena is not prioritizing recycling above garbage disposal. Many other organizations within Helena provide more options for recycling and are more convenient. City management states that they are not competing with the other agencies, but instead are working together to provide a service. However, Helena Recycling requires participants in order to make money, which means that they are taking people away from the city of Helena's recycling program and are therefore harming its chances to create a successful recycling program.¹²² Many commissioners highlighted that residents want a recycling program and it is their duty to

¹²⁰ City of Helena. *Recycling*. 2011. S.A.V.E. *Recycling in Helena* . 2007.

¹²¹ City of Helena. *Recycling*. 2011.

¹²² Dan Ellison. interview by Sarah Brown. *City Commissioner* (September 1, 2011); Paul Cartwright. interview by Sarah Brown. *City Commissioner* (September 4 , 2011); Ronald J. Alles. *City Manager*; Elsaesser, Matt. *City Commissioner & Executive Director*.

provide one, however, the city is relying heavily upon other agencies to provide a more effective program.

Helena Recycling is desirable because it provides bi-weekly service, picks up more items, and will let residents decide whether they would like to use their own bins or the agency's bins. While it does have a small fee, the charges are not substantial, given that garbage within Helena is very cheap. While recycling requires that the items need to be separated, all metals can be put in one bin. S.A.V.E., while in some competition with the city, is a less direct competitor. S.A.V.E. does not provide curbside pick-up, but it is one of the few agencies within Helena that collects plastics. People have to stockpile plastics for two months, which is an inconvenience for consumers. The city helps S.A.V.E. have its events by offering recycling compactors, electricity for the compactors, and locations for the events to occur. Without the city, S.A.V.E. would not be able to hold events or would have to charge for recyclables. However, if S.A.V.E.'s events continue to happen, the city will never need to pick up plastics and the expansion of the blue bag program will be hindered. While S.A.V.E. cannot state how many people participate in their bi-monthly plastics drive, all of the city commissioners and S.A.V.E. executive director state that the number is high. Residents want to have a comprehensive recycling program, but are not getting all of their needs met from one agency, so many are forced to use two or three organizations. At one point, the city considered contracting the recycling services to a private entity, which would increase competition, making all of the programs more efficient, but when the study was stopped, any plans to privatize Helena's recycling program was stopped.

Costs

Helena's cost management of recycling is inefficient. The program has changed very little since its implementation.¹²³ With little change, costs and fees are not increased to buy new technologies or change practices to be more efficient. City Commissioners and the city manager were very proud that they were increasing the funds to recycling within the city. However, when the budget is analyzed, the money that is being increased for recycling is designated only to the transfer station and drop off sites.¹²⁴ Curbside collection is paid for through the solid waste and sanitation fund from the city; therefore, permit fees and taxes pertaining to sanitation are the only source of funds for the blue bag program. For seven years, since 1992, Helena did not increase the cost of residential solid waste for residents to cover the new recycling program, and when the prices were increased, the increase was merely incremental. Even with new changes implemented in

¹²³ Dan Ellison. interview by Sarah Brown. *City Commissioner* (September 1, 2011); Paul Cartwright. interview by Sarah Brown. *City Commissioner* (September 4, 2011); Ronald J. Alles. *City Manager*; Elsaesser, Matt. *City Commissioner & Executive Director*.

¹²⁴ Anderson-Montgomery Consulting Engineers . *Residential Recycling Program Enhancement Study*.

2011, such as hiring a recycling director¹²⁵ and creating a route for the recycling collector¹²⁶, the rates were not increased to cover the new costs.

City management stated that \$40,000 was allocated to the blue bag program, but it is unclear whether this was a number designated in the budget, which does not have a specific section for the blue bag program, or was a number agreed upon by the city commissioners. The city has designated \$52,073 for drop-off sites throughout Helena, but there is not a similarly clear number for the blue bag program. Since cost is one of the largest hindrances to small town recycling, it is important to understand where the city's small budget is being allocated. As explained earlier, if the city continues to focus on the transfer station rather than the blue bag program, the curbside program will always be underfunded and undervalued. City Commissioner Elsaesser explains that for much of the duration of the blue bag program, city staff was attempting to cancel the program because it was seen as a hassle and it has only been the last few years that a change in city mindset has occurred.¹²⁷ As a result, S.A.V.E. was asked not to promote or support the blue bag program.¹²⁸ However, for the last five years, the city commissioners have been attempting to resurrect the city's recycling program.

¹²⁵ It is difficult to analyze this position because they have not had enough time to perform their duties of increasing awareness and effectiveness of the recycling program.

¹²⁶ Before 2011, the pick-up man for recycling would drive around Helena on the designated pick-up date until they saw a blue bag, they did not have a specific route like the garbage collector.

¹²⁷ Elsaesser, Matt. *City Commissioner & Executive Director*.

¹²⁸ Elsaesser, Matt. *City Commissioner & Executive Director*.

2011 was the first year that the pick-up driver had a set course for picking up blue bags. In the past, he had driven around Helena searching for blue bags set out near their garbage.¹²⁹ Helena does not have a specific cost or section within its budget for the blue bag program, but instead folds the program into the solid-waste for residential. The recycling funding for Helena, which does not include the blue bag program, has had an increase in funding to cover expenditures.¹³⁰ The city officials do not see the organizations as a threat to their blue bag program, but instead provide more recycling options to residents.¹³¹

Not having a budget line for the blue bag program is problematic because different costs associated with the program cannot be assessed. It is unclear how much the city spends on gas for the truck to pick up recyclables once a month. Therefore, the city could be saving much money in gas with the new route, but the savings will never be seen. Another issue is how much the city spends on buying the blue bags, trucks, drivers, time, or other miscellaneous items. Contributing to the confusion is a lack of knowledge about how much recyclable material comes from the blue bag program. The city has a specific section within the budget for the drop-off sites, tire drop off, and used car oil

¹²⁹ Ronald J. Alles. interview by Sarah Brown. *City Manager* (August 29, 2011).

¹³⁰ Ronald J. Alles. interview by Sarah Brown. *City Manager* (August 29, 2011).

¹³¹ Dan Ellison. interview by Sarah Brown. *City Commissioner* (September 1, 2011); Paul Cartwright. interview by Sarah Brown. *City Commissioner* (September 4, 2011); Ronald J. Alles. *City Manager*; Matt Elsaesser. *City Commissioner & Executive Director*.

drop off at the transfer station, but since they do not know how much they are receiving from the blue bag, they cannot justify the importance of the program.

One of the biggest concerns for all of the city commissioners was the cost of recycling. Yet while recycling does cost a substantial amount of money, the city already has the infrastructure in place to create a successful recycling program. City commissioners highlighted that they were taking items with no monetary value, such as glass. However, the commissioners are missing the larger picture: they could generate revenue by making garbage more expensive than recycling. All of the city commissioners highlighted that diverting waste from the landfill constituted a substantial benefit to the community. Encouraging residents through monetary dis-incentives would maximize the benefit by diverting even more waste. By taking only high value items, such as steel and aluminum, they are limiting the opportunities to divert waste. This causes a problem because the city commissioners also discussed the problem of building a new landfill and monitoring the old landfill. The city is avoiding increasing costs to consumers in order to increase the appeal of the recycling program. However, the only way to increase recycling participation may be to increase the cost of garbage collection because low-cost recycling is not attracting participants. Expanding the program to include items such as plastic and glass may produce enough plastic in order to cover the costs of recycling.

Finally, the city allows so much garbage to be produced that there is no incentive to recycle or participate in the city's program. Residents share a community 96-gallon trash bin (there is only one size available) that is picked up every week. In addition to the bin, residents can dump up to 1.5 tons of garbage at the transfer station every year. The

city does not limit what type of garbage may be thrown away at the transfer station. An individual who produces garbage over the 1.5 tons of garbage is charged merely a fee. The city pays for the new transfer station and landfill by the tonnage of garbage that enters the transfer station per year. Therefore, limiting the amount of garbage that is produced may limit the ability of the city to cover the costs of the landfills. It is a difficult problem that needs to be addressed carefully. However, the city has chosen the least ecological course because it allows limitless garbage to come into the transfer station, for fear of not being able to pay for the costs of landfill.

Moses Lake

Moses Lake's curbside recycling program began in August of 2010. Before implementation of the curbside program, Moses Lake had a drop-off center for recycling items such as glass and cardboard. However, the program was not funded or managed by the city, but instead by the contractor hired to pick up garbage. While the city had discussed recycling programs for ten to fifteen years before the program was implemented, Moses Lake decided to wait until it was feasible to install a program that fit the city. The city distributed free recycling carts to all residents two weeks before the recycling program was to begin. Before the carts were delivered, the city informed residents months in advance of the changes that were going to take place, to ensure that everyone who wanted to participate could, and that those that didn't want to participate knew why the program was being implemented. However, the city commissioners stated that the program was forced upon many individuals because new bins and prices were

given to all constituents whether they wanted to participate or not.¹³² Within a year of implementation, most of the residents were in support of the recycling program.¹³³

The curbside program alternates between bi-weekly collection recycling and weekly garbage collection. Garbage and recyclables are color coded into three different bins. The blue lid 64-gallon bin is for recyclables, which includes aluminum, steel, plastics¹³⁴, paper, and paperboard- everything except for glass. Citizens can ask for another bin for recycling or compost at no additional cost. Glass can be dropped off at four specified locations throughout the city. The black lid bin is for yard waste, which is picked up every week in March through November and monthly during December through February. The yard waste component will also accept whole Christmas trees during January and February. The compost bins were the old garbage bins, but are being reused as the compost bins. The grey lid bins are for garbage and were delivered at the same time as the recycling bins again, free of cost. If residents did not choose a size of bin by the deadline of August 2, 2010, they were given the cheapest and smallest bin at 48 gallons. However, residents can choose between three different sizes of garbage, which range in costs from \$13 a month for a 48-gallon bin to \$25 a month for a 96-gallon bin. Residents can sign up for a different size bin online, by emailing or mailing the city,

¹³² Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview by Sarah Brown. *City Commissioner, City Commissioner, City Manager, Assistant Finance Director* (July 13 , 2011).

¹³³ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹³⁴ Only small mouth bottles are accepted in Moses Lake at this time.

calling a hotline, faxing a letter, or visiting city hall. In addition, residents can change their size of garbage bin at any time.¹³⁵

The city had to save approximately \$600,000 over the course of twenty-three years in order to have enough money to buy the bins for residents free of charge. The money was saved in to a solid waste fund until the city management decided what to do with the extra funds. The city commission, beginning in 2007, began to consider implementing a recycling program. Ron Cone, a financial director with Moses Lake for seventeen years, did all of the research for the recycling program and helped to design the final proposal. The commission and citizens initially wanted only recycling, but when the market collapsed on recyclables, the implementation process was put on hold.¹³⁶ However, in 2010 recycling was proposed again, this time with the addition of composting. Ron Cone, with the help of Lake Disposal who has a set contract with the city for both garbage and recycling, purchased the necessary equipment to make the program work.

While Moses Lake's program has only been operating for a little over a year, the benefits to the city have been substantial. The program has collected 884 tons of recyclables, which when sold amounted to \$25,893 profit for the city to refund. If the city does make any profit on the program, the money is returned to the households by refunding their garbage costs. The households in the year received "\$4.71 per account."¹³⁷ Each month, households were refunded anywhere between \$.37 to \$.80 per

¹³⁵ Ron Cone. interview by Sarah Brown. *Finance Director* (2011).

¹³⁶ Ron Cone. interview by Sarah Brown. *Finance Director* (2011).

¹³⁷ Ron Cone. interview by Sarah Brown. *Finance Director* (2011).

account depending upon the amount that recyclables were selling. The yard waste program removed 1,865 tons from the waste stream and was able to convert the material to fertilizer “and [is] utilized by many farmers in [the Moses Lake] area.”¹³⁸ In a six-month comparison from 2010, with no recycling program, to 2011, “the residential garbage has been reduced by an average of 32%.”¹³⁹ However, “the percentage has continually increased and is now over 46% [reduction in a six month period].”¹⁴⁰ Moses Lakes’ high participation and involvement has allowed the new curbside program to thrive and “2,812 tons of material” has been diverted from the landfill in one year. Moses Lake expects these high numbers to continue. The city is even extending the yard waste program into later in the year because the demand was so high.

Education

Moses Lake attempted to make sure that all residents were well informed about the program. The city commission decided whether a recycling program would be installed within the city; however, once the city began the installation process, the education process began as well. All of the city commissioners realized that education was crucial to producing a viable program. First, information that recycling was coming to Moses Lake was included in city newsletters, on the city website, and at city buildings. Then, the city began mailing letters to residents so that they could sign up for their new garbage bin. Within that letter was an explanation as to why the city was installing a recycling program and how the changes would take place. When the bins were delivered,

¹³⁸ Ron Cone. interview by Sarah Brown. *Finance Director* (2011).

¹³⁹ Ron Cone. interview by Sarah Brown. *Finance Director* (2011).

¹⁴⁰ Ron Cone. interview by Sarah Brown. *Finance Director* (2011).

another brochure was attached to explain the schedule of the recycling program and how to use the bins.

If residents were hesitant or uncertain about the program, they could contact a city hotline, email, or fax to get questions answered. The city management noted that while most of the city was willing to try the program, some individuals were more resistant to change. If this was the case, the city repeatedly tried to persuade them to participate before changing their garbage fee to reflect their true garbage output. If the newsletters and brochures did not work, the city would call the constituent to explain the program to the individual. If they could not be reached by phone, a city official would go and personally talk to the constituent to ensure that they knew how much the garbage was going to cost and why the city had made the changes. After this point, the city would change the garbage fee for that house to reflect the true cost of the garbage that they produced. Many times residents altered their behavior after this charge was levied.

Moses Lake intimately connects education, participation, and cost. Because the city simultaneously installed the program while educating the constituents, they were able to learn if more information needed to be distributed. The city was very proud of their program and all of the city management has stated that they would not change the program that they currently have.¹⁴¹ Residents have also been receptive; the city management states that they receive very few phone calls in complaints.¹⁴² When visiting the city's website, for the first year the recycling program was on the front page and even was the second link on the left hand side of the site. Newspapers ran

¹⁴¹ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹⁴² Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

information about the program for the city to ensure that the program received enough publicity.¹⁴³

One of the more confusing aspects of the new recycling program was the billing process. Because people were now being charged more money, it was critical that they understand the charges and how to lower their monthly garbage costs by learning about the different bins. However, the assistant financial director explained that once the education program began, people quickly understood their options.¹⁴⁴ Thus, not only was their enough information available for residents, but it was relatively easy to understand. Installing any new program within a city can be complicated because as the commissioners explained, many are resistant to change and new ideas.¹⁴⁵ Therefore, the information presented needs to appear welcoming and easy to use.

Participation

As is clear with the amount of recyclables Moses Lake has produced in one year, participation is high. One of the main reasons highlighted by city management is that the program is easy and convenient to use.¹⁴⁶ The single stream bin makes the program easy to understand. Instead of trying to sort items into correct bins, residents can dump all of their recyclables into one bin. This saves the constituent time. If the constituent did not set everything up, the city called to ensure that they understood their options and provided them with a plan. It is clear that the education component had a direct impact

¹⁴³ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹⁴⁴ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹⁴⁵ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹⁴⁶ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

on the high level of participation. If people understand the program, they are more likely to participate. Moses Lake citizens have enjoyed the program so much that they are even asking for more opportunities to recycle at home and at work.¹⁴⁷

As was described in the literature review, recycling creates an atmosphere of environmental awareness. The city management explained that residents can see the benefits of recycling with the program because constituents can see how many recyclables are no longer being thrown away. People begin to realize that they are making a positive impact upon the environment and want to continue or increase their participation.¹⁴⁸ Moreover, residents are beginning to ask for other opportunities to recycle. The yard waste program has had to expand their dates because of constituent demand and realization that yard waste was still being produced into November.¹⁴⁹ Also, the city management is thinking about increasing recycling to commercial industries as well. This is important because citizens, who have begun to recycle at home, now want to recycle at work as well.¹⁵⁰ The demand shows that recycling is becoming ingrained in the mindset of Moses Lake, which will help the recycling program to continue.

Personal contact and direct involvement from the city helps to show the importance of the recycling program. As explained in the above section, Moses Lake worked assiduously to publicize the program. This is important because it shows that the

¹⁴⁷ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹⁴⁸ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹⁴⁹ Ron Cone, interview by Sarah Brown. *Finance Director* (2011).

¹⁵⁰ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

city takes the recycling program seriously and wants residents to do so as well. All of the city management interviewed were proud of the program and used it daily.

A large reason that participation was so high was that the city had a high cost disincentive to recycle. The city deliberately links all three components of cost, education, and participation to ensure a successful recycling program. While the city attempted to make sure that garbage collection was still reasonably priced, they did raise the cost of garbage by almost eight dollars per month for the smallest bin. The largest bin, which costs \$25, is almost 1.5 times more than previously. The difference in costs is dramatic to encourage residents to reduce their garbage production. While residents can produce more garbage, it will reflect in their monthly bill. As a city council member explained, “dollars speak.”¹⁵¹ By showing residents how much they could save if they reduced their garbage output, it increased education about why recycling is important and saved residents money in the long run.

Cost

Cost has been described as the largest hindrance for many cities to install a recycling program. Moses Lake was able to avoid most of this obstacle for two main reasons. First, Moses Lake does not depend upon a profit from recyclables to cover the cost of the program; second, the city had saved a substantial amount of money to buy the bins. Both of these components are critical because it allowed Moses Lake to have more flexibility in installing the program. A large part of the reason that these two components existed was because of the willingness and helpfulness of the contractor throughout the

¹⁵¹ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

entire process. The city contractor was willing to work with the city to negotiate a set price for the recyclables that would benefit both parties.

First, the city recognizes that they should not depend upon the price of the recyclables to fund the program. Moses Lake created a fund balance by taking the money that was saved by the recycling program, such as decreasing the amount of loads to the dump and dumping fees, and transferring that money to cover the costs of baling the recyclables and the pick-up and transportation costs.¹⁵² City management sees the program as a trade-off from garbage collection to recycling collection. The city does not have to worry about paying off a landfill or supervising an old landfill, therefore the sanitation funds can be directed towards recycling. If the city does make a profit on selling recyclables, that money is rebated back to the residents by reducing their garbage bill. All residents receive the benefit whether they recycle or not, however, it is beneficial for all people to recycle because more recyclables may lead to more money rebated. The city also has a set contract for ten years with the collection contractor for the city. The set contract protects both the city and the contractor from losing money if the recyclables market does bottom out. The contractor, however, is at a greater risk of losing money if the price negotiated with the city is not set high enough.

The city also addresses the cost of recyclables by only collecting type 1 and type 2 and not collecting glass. The city has not looked at collecting more grades of plastic, such as plastics grade 3-9. The contractor only takes the high-grade plastics that will make more money. Glass, which is both heavy to transport and can break when mixed with other single stream items, is not collected because it would require a different truck

¹⁵² Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

and would not sell for a high price. While the city does not directly sell the plastics, it is clear that the contractor is attempting to get the highest-grade items for retail. The city also attempts to have enforcement mechanisms in place so that lower end plastics or non-recyclables do not get into the recycle bin. The city tries to inform residents with pamphlets and brochures so that residents understand what items can be recycled.

Another important reason that Moses Lake was able to install a recycling program effectively was that the city had \$600,000 in reserve in the sanitation fund. The city manager, who has been with Moses Lake for 23 years, has tried to save the city as much money as possible. One way he was able to create such a large reserve was by assuming the largest amount of garbage that could be produced by the city every year. If the city did not meet the 100% target, but instead only produced 75% garbage, then the costs that would have covered the 25% of dumping fees was not used for the following year, but instead put into a reserve. The city manager stated that he was saving up for some type of program, like recycling, and was just waiting for the right time to implement a program. The \$600,000 was used to buy the new bins for recycling and garbage. This attests to the importance of inside inclusion and acceptance of city officials to implement and support a recycling program. If the city did not have these reserves, then the city might not have been able to install the recycling program as quickly. The program only took one year of consistent dialogue to implement because of the city did not have to wait for money.

Finally, the city's dis-incentive to participate in the program helps to cover any extraneous costs that may arise. The increase in garbage costs directly reflects the true costs of picking up the three bins. While it may cost more for residents, it is important

that the costs are reflective of the program, otherwise the city could lose a large amount of money. Also, by encouraging people to recycle, the city is reducing the amount of garbage fees, which means that in the long run the city could save an even larger amount of money.

Comparison

Moses Lake's recycling program is a clear model for small town recycling programs. Even though the program was only started a year and a half ago, the clear education techniques, high participation, and effective cost measures make it useful for analysis. Helena, while having an older program, is only beginning to realize what changes need to take place. Before Helena's program can be successful, the city will have to change its mindset about how to collect recyclables, and focus on which recycling program should be pursued and how to pay for that program. It is important to note that while Moses Lake is in a rural area similar to Helena, Washington state does have more recycling programs than Montana. Therefore, Moses Lake can consider more cities and technologies on which to model their program.¹⁵³

While both cities have a curbside recycling program, both can continue to improve. Moses Lake's satisfaction with their recycling program may hinder them in the end because they are not looking for new areas to improve, such as collecting more items or decreasing garbage collection to every other week. However, their program may need

¹⁵³ In addition, transportation of the recyclables once they have been collected to a market is substantially harder for Helena. However, since Helena has focused on increasing their recycling program through the transfer station, it seems that that is not their biggest concern or worry.

to be successful for a few more years before the real benefit and sustainability can be analyzed. Helena has not fully reviewed the blue bag program. The study drafted in 2009 highlighted that it would be very easy for Helena to expand the program.¹⁵⁴ Since the city did not finalize the study, however, the recommendations have not been reviewed to see what could be applied or modeled.

Education

Both cities realize that education is necessary for a recycling program to flourish; however, Helena has not begun to pursue education to reflect that understanding. An impediment to Helena modeling Moses Lake's education system is that Moses Lake started the education system when the curbside program began. Since Helena already has a recycling program, the education of residents will have to be different. Also, Moses Lake forced the recycling program on all residents by providing new bins and changing the billing system for garbage. If Helena was to dramatically change the system to model Moses Lake's program, then education could be modeled similarly.

Another danger for Helena is that if they do promote the ineffective blue bag program and educate more people about how to use their services, and if the blue bag program is then changed to be more effective, people may be resistant to the new changes. While this is a complicated situation, Helena should begin the education process by explaining why recycling is important and the benefits that can be accrued to the city if people begin to recycle. The city should then begin promoting the blue bag

¹⁵⁴ Anderson-Montgomery Consulting Engineers . *Residential Recycling Program*

Enhancement Study for the City of Helena. Draft , Helena: City of Helena, 2009, VII-6.

program and see if they can increase participation. Another complication is that the city competes with Helena Recycling LLC. While city commissioners state that any recycling is good recycling, if the city wants a successful program, then it needs more participation. If the city of Helena increases its education, it is probable that Helena Recycling LLC may increase its education and promotion. Helena's curbside recycling program is still in its infancy, and may be snuffed out by Helena Recycling LLC. Helena does not have any city ordinances about recycling or any regulations about how to dispose of recycling within the city. Also, the city would have missed an opportunity to contract with the group, which could benefit both parties.

Helena also needs to direct more resources to the promotion of the blue bag program. As previously stated, there have been some newspaper articles about the expanding transfer station, but no mention of the blue bag program. If Helena wants to create a successful recycling program, the city needs to begin shifting to the best type of program-curbside. By hiring a recycling director, Helena is beginning to take the first steps in the right direction, but their education on recycling is so ill informed, it will take a massive effort by the city to change people's mindsets.

While Helena's education is the most successful of the three components, it is insufficient. If Helena does change the recycling program in any way, whether that is single stream bins, bi-weekly pickup, or the inclusion of more items, a comprehensive education program needs to accompany that change. Modeling Moses Lake will help. Contacting individuals who are already signed up by email or phone will help to make the change less dramatic and will help to maintain participation in the program. While

Helena is larger than Moses Lake, the time that the city puts towards education will help to make the program flourish and will have long-term benefits for the city and residents.

Moses Lake's education system was well done. The multiple stages of contact (through letters, pamphlets, phone calls, and personal contact) ensured that the entire city knew about the program. While some may suggest that the education was excessive and may have turned people away from the program, the participation rates prove otherwise. The next step for Moses Lake is to ensure that new residents to Moses Lake have the same type of understanding of the recycling program as those who lived in Moses Lake when it was implemented. Also, Moses Lake needs to keep educating the population about the success of the program, ways to improve, and why the city is continuing to recycle. While education becomes less critical as the program continues, some level of ongoing education is necessary for a stable program.

Participation

The two cities are again hard to compare because of the dramatic differences in the type of programs. Moses Lake cannot state how many people are participating in the program because all of the residents are given bins and therefore could, potentially participate. In contrast, Helena should know how many people are participating, but due to a lack of focus on the blue bag program, is unsure of the exact number participating. Moses Lake does know the amount of recyclables that enters its facilities, which provides an approximate estimate to its participation rates. Helena combines the blue bag recycling with the transfer station recycling, therefore, there is not possible to determine how much curbside recycling has increased or decreased over the decade. While these are

significant differences between the program, Helena can begin modeling Moses Lake's program to increase participation.

Moses Lake understands that participation is directly connected to the cost of garbage. While neither city wants to increase the cost of living within the city, Moses Lake recognized that the only way to encourage participation was to increase the costs of not participating. While the costs for the largest garbage bins did increase substantially, the smaller size garbage bins increased minimally, which encouraged citizens to reduce their garbage production. Also, there was no cost to recycling, which encouraged people to participate. Helena is attempting to pay for the program with the tax base and the charges accrued from the transfer station. While this does keep costs relatively low for Helena residents, it does not encourage recycling. The city must increase the cost of garbage collection while at the same time of expanding the program so that people have an option to reduce their monthly bill.

Helena also needs to make the system easier to use. Allowing residents to pick up the blue bags at only two facilities is burdensome. Also, requiring separation of materials is unnecessary and discourages residents from participation. Instead, Helena should begin researching single stream options. The study on recycling within Helena said that this was a viable option.¹⁵⁵ This is important because it may save the city money in the long run because it removes an extra step from the process. While the costs of new technologies or personnel to sort the recycling at the transfer station may be high in the

¹⁵⁵ Anderson-Montgomery Consulting Engineers . *Residential Recycling Program*

Enhancement Study for the City of Helena. Draft , Helena: City of Helena, 2009, VII-6.

beginning, the benefits of having higher participation and reduced garbage to the landfill will outweigh because it saves money and resources.

Helena and Moses Lake have dramatically different situations relating to the landfills. While the city and county jointly own both landfills, Helena is still paying for the monitoring of the old landfill and making payments for the new landfill. While Moses Lake may be also monitoring an old landfill, they did not mention that it was a significant hindrance to their sanitation budget. Helena recently created a new tax district to pay for the monitoring of the old landfill, which makes those costs no longer a large issue. However, Helena's city commissioners state that Helena is paying for the transfer station and new landfill by the fees and tonnage that crosses the scale.¹⁵⁶ In other words, they are demanding large amounts of garbage to cover cost, which undermines the creation of a successful recycling program.¹⁵⁷ If Helena was to raise the cost of garbage for city residents, then that extra money could be funneled to paying for the landfill. The city commissioners do not seem to be looking for a solution to the landfill payment problem and would rather not increase costs to constituents. Moses Lake may not have an issue because they were willing to increase rates and transfer the money saved by recycling to other funds. Helena could solve three problems at once by, increasing

¹⁵⁶ Dan Ellison, interview by Sarah Brown. *City Commissioner* (September 1, 2011); Paul Cartwright, interview by Sarah Brown. *City Commissioner* (September 4, 2011); Ronald J. Alles, *City Manager*; Elsaesser, Matt. *City Commissioner & Executive Director*.

¹⁵⁷ Heather Rogers. "Titans of Trash." In *Garbage and Recycling*, by Mitchell Young, 201-208. Farmington Hills: Greenhaven Press, 2007, 204.

recycling through cost dis-incentives, paying for the landfill with a large amount of new funds, and preventing the new landfill from becoming full too fast. Helena has a landfill in the middle of the city that has had many problems; among other things, it regularly releases methane gas. It is in the best interest of the city to reduce the amount of garbage produced.

Another way to increase participation is by increasing the types of items that are collected. By limiting its recycling program to only aluminum, steel, and paper, Helena is not utilizing fully the recycling opportunities and is therefore limiting the number of people interested in the program. Other recycling programs, such as S.A.V.E. events and Helena Recycling LLC, pick up more items and are preferred over the city program. Helena even has a compost site at the transfer station and could easily pick up compost material from residents. By picking up more items, more residents will want to participate in the program and it will make the blue bag program easier to use. Moses Lake had to ensure that the program it installed collected yard waste and a large number of items. If its contractor could not collect yard waste then the program may not have been installed. Helena needs to evaluate what is important to residents and make sure that it is provided in the program. Many of the city commissioners highlighted that plastic recycling was a top priority for many residents; therefore, the city should collect plastics.¹⁵⁸

¹⁵⁸ Dan Ellison, interview by Sarah Brown. *City Commissioner* (September 1, 2011); Paul Cartwright, interview by Sarah Brown. *City Commissioner* (September 4, 2011); Ronald J. Alles, *City Manager*; Elsaesser, Matt. *City Commissioner & Executive Director*.

However, Moses Lake needs to slowly expand their program as well. While the city is thinking about expanding the program to commercial industries, it also needs to consider how to expand its residential program. Taking type 1 and 2 plastics is important because those are the highest grade and quality of plastics. If the recycling program is to be comprehensive, though, it should expand to collect more types of plastics. While this may decrease the value of the recyclables collected, the city would make up the costs with even more trash being diverted. Also, the city should collect glass. City Commissioners state that there are a number of drop off sites available for glass collection, but the city management has seen the difference between unsuccessful drop-off sites and successful curbside pick-up.¹⁵⁹ While it may be not be in the near future for the program, both of these considerations should be put into a plan to be implemented.

The city of Helena needs to support the blue bag program. This can be done in multiple ways: first, by having the city commissioners recognize that they cannot support multiple recycling programs within the city because it is creating competition; and second, by ensuring that city staff supports the program. Moses Lake's management strongly supported the recycling program. However, none of Helena's city commissioners stated that they used the blue bag program and one commissioner stated that he would rather drop off items at the transfer station. This is problematic because the preference of the transfer station or S.A.V.E. events over a curbside recycling program will always limit the success of the program. City commissioners need to change their focus to support the city's curbside recycling program, rather than an array of recycling opportunities within the city. Also, city staff needs to stop undermining the program. In

¹⁵⁹ Liebrecht, Karen, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

Moses Lake, Ron Cone, a city staff member, helped design and implement the program. More importantly, he ensured that the Moses Lake staff and management supported the program. Helena needs to have someone support the program from the inside, so that they might experience similar successes. Many of the city commissioners stated that they strongly supported recycling, but they are not championing the program or its ideas.

Costs

Costs are also difficult to compare because of the dramatic differences between the two cities' programs. Moses Lake saved for 23 years in order to buy the bins for the program, which were very expensive. In addition, the city does not depend upon the recyclables paying for themselves, but instead has balanced the budget in two key ways. First, as explained above, the city increased the rates for garbage collection. The increase helped to cover additional costs and ensures that the program does not cost the city any money from other areas of the budget. Second, the city expects that some of the waste will be diverted, which decreases the transportation costs and fees associated with dumping. The focus on balancing the budget with existing money helps to ensure that the program will not be subjected to fluctuating market prices. Any profit that is created is returned to the citizens. There is no need to save the profit for future years because of the ten-year contract and the garbage rates that cover the majority of costs.

Helena, on the other hand, takes the opposite approach. Many of the city commissioners highlight that recyclables are not profitable. However, since they know that they will not receive much money from the recyclables, they should change the program to find money from other areas. Helena does have some excess funds that could be diverted towards savings. However, it is difficult to save \$600,000 when the city is

attempting to expand the transfer station recycling. The city is going to have to decide which program it wishes to succeed, and prioritize accordingly. If it is the transfer station, then it will need to cut its expenses for the blue bag program. If that occurs, the city will not see a strong recycling program for many more years. The city needs to change the mindset that recyclables are going to cost the city money, especially because they can save money in transportation costs like Moses Lake. It is true that just selling recyclables may not be profitable, but the city needs to look at the indirect benefits of recycling. First, the city is reducing the amount of garbage travelling to the landfill, which saves on gas and personnel costs and stops the landfill from filling up faster. Second, the city may receive benefits when the sale of recyclables does produce a profit. Third, the city is taking steps towards being more environmentally friendly, which may not provide obvious tangible goods, but may increase the number of people who would like to live in Helena or are happy with Helena's goals.

Another difficulty for Helena is that they are still paying for the creation of the new landfill. While the members of Moses Lake's government did not address this concern in my interviews, the county landfill is only 18 miles from Moses Lake. It is in the best interest of each city to reduce the amount of garbage entering the county landfill. The city of Helena could increase the costs of garbage collection to reflect not only the new costs for recycling, but to help pay for the landfill payments. The management is not using the cost of garbage collection effectively and there is no incentive to reduce trash. One possible way to save money for the city could be to increase prices first and then once enough money has been saved, switch the curbside program to single stream bins.

Another difference is that Moses Lake decided to hire a contractor to provide waste collection for the city. The city of Helena is attempting to manage the waste collection on its own. While it is possible for the city to provide these services, it is clear that Helena is having a difficult time managing the programs. Helena is worried that costs will be raised too dramatically if they were to hire a contractor; however, if the city allows bids to occur, they could control the rates of the service.

While Moses Lake seems to be able to ensure that costs do not hinder the program, the city may not be evaluating the all of the costs for the contractor. Moses Lake needs to continue to match the costs of garbage collection to the market costs. While the city recognizes that it does not want costs to be too high, garbage is going to be more expensive as the landfill continues to fill. The city has a set contract for ten years; however, they should begin thinking about re-evaluating the costs of selling the recyclables and garbage every few years so that neither the contractor nor the city loses too much money. Especially if the price of recyclables bottoms out, the city needs to provide some protection to the contractor so that it does not go out of business or throw the recyclables away because of a lack of market.

Conclusion

There are very few similarities between Moses Lake and Helena. While Moses Lake has a more successful program in reference to the three components of education, participation, and costs, both cities have areas in which to improve. Helena, while having larger cities within the state that it could model, may find it more helpful to model a smaller city such as Moses Lake. The first step Moses Lake pursued was to save money, which will be difficult during the economic recession. It would be interesting to re-

evaluate the two cities five years from now to determine if any changes had been made to their programs.

In the next chapter, I will provide a policy plan for Helena to create a successful curbside recycling program. Much of the policy is modeled after Moses Lake's successful program.

Chapter 3: The Proposed Public Policy to Implement a Recycling Program

Now that the problems of Helena's recycling program have been highlighted, it is important to explain how the program can be improved. One of the main difficulties associated with improving Helena's program is that the city has invested money and time into a failing system that undermines other city programs by competing them. Therefore, the system described below combines the three programs into one successful program. This chapter will be written in a style similar to a Helena city ordinance so that the changes could easily be understood and implemented.¹⁶⁰ I will describe the changes that need to be made and then will provide a rationale that explains why these changes should be implemented.

Helena can pursue many different options in order to improve their recycling program. However, I am only providing one course of action. While it is important to analyze many options, Helena needs to act: it has reviewed many options, and has pursued none. Helena has commissioned drafts by private organizations that have given multiple options. None of them has been pursued. While the previous chapters

¹⁶⁰ The headings and language throughout the chapter are modeled after the Helena city codes for public utilities sanitation regulations. The city codes are attached in an Appendix B. All of the writing after the rationale heading is original, and seeks to explain the aims of the policy. Sterling Codifiers, Inc . "Public Utilities: Chapter 1 Sanitation Regulation ." *Helena, Montana: City Code* . April 25 , 2011. http://www.sterlingcodifiers.com/codebook/index.php?book_id=401 (accessed January 2012).

considered education, participation, and cost, this chapter will propose a policy and consider a timeline for implementation. I have concluded that the city of Helena has the capability to implement a successful recycling program, if they are willing to adopt a curbside program.

Implementation of Recycling Program

Section 1- Definitions

Recyclables: Plastics (type 1 and 2), aluminum, paper (e.g. newspaper, magazines, and office paper), cardboard, steel cans, and any item not considered “rubbish” or “garbage” under Title 6-1.1.

City Owned Container for recycling: Any container supplied to residential recycling generators by the city.¹⁶¹

Residential Recycling Generator: Any person generating recyclables.

Transportation of Recycling: That portion of the recycling collection and disposal, which provides for the hauling of recyclables in bulk or in recycling containers to the designated transfer point at a disposal area.

Refuse: Any waste product solid or having the character of solids rather than liquids in that it will not flow readily without additional liquid and which is composed wholly or partly of such materials as garbage, swill, seeping, cleanings, trash, rubbish, litter, industrial solid wastes or domestic solid wastes; organic wastes or residue of animals sold as meat; fruit or other vegetable or animal matter from kitchens, dining

¹⁶¹ Apartments will not be included in this study because most cities think of apartments as commercial enterprises rather than residential. Moses Lake also treats apartments as commercial rather than residential dwellings.

rooms, markets, food establishments or any places dealing in or handling meat, fowl, fruits, grain or vegetable offal, animal excreta, or the carcasses of animals; brick, plaster or other waste matter resulting from the demolition, alteration or construction of buildings or structures; accumulated waste material, cans, containers, tires, junk, or other such substance which may become a nuisance. Any of the items that can be recycled as deemed by the term “recyclables” can be recycled, but may also be considered refuse.

Rationale: The definitions are necessary because they provide the framework for the recycling program. Because the city does not have a section designated for recycling, it is important to use terms the city currently employs and can be easily transferred to a new program.

Section 2- Standards for Accumulation of Recycling

The following standards and requirements are established as a minimum for the sanitary accumulation and storage of recycling pending collection:

A. All recycling shall be placed in city owned containers, or containers approved by the director of public works.

B. Residential recycling generators equipped with city owned or approved rollout containers shall place refuse and garbage containers on the scheduled collection days at the curb line in front of their residences or in designated collection sites near the residence. Containers shall not be placed for collection before six o'clock (6:00) P.M. on the day proceeding the day of collection, and after the containers are emptied, they shall be removed from the curb line on the day of collection.

C. City owned containers shall be distributed and positioned as approved by the director of public works.

Rationale: Following the city ordinances for garbage collection, the bins need to be standardized so that costs can be managed effectively. If all of the bins are approved by the city, then the city and the company collecting the recycling can have different rates for each bin. Requiring times that the bins can be put out for collection and put away are important because it helps the city maintain an image and show that the recycling bins will not ruin the ascetics of a neighborhood.

Section 3: Prohibition

It is prohibited to place the following materials in a city owned recycling container:

- A. Containers that have contained flammable liquids/oil/or hazardous material.
- B. Plastics with the opening of the object being larger than the bottom of the object
(e.g. yogurt containers)
- C. Bottle caps
- D. Glass or ceramics
- E. Foil or metal hangers
- F. Plastic bags
- G. Styrofoam
- H. Food contaminated products or materials

Rationale: The list will prevent the recyclables from being contaminated. Recyclables that have not been contaminated with these items will be worth more and will provide more profit to the collection company. Mary Cooper highlights that items that are not contaminated can create high quality items, which will benefit the recycling program.¹⁶² While the city will not focus on the profit in order to fund the project, it is important that

¹⁶² Mary H. Cooper. "The Economics of Recycling."

the collector does not lose a large amount of money attempting to sell contaminated items. Education of the community about these banned items will be essential to the success of the recycling program.

Section 4: Storage of the Recyclables:

Recyclables shall be placed in sturdy, well-built containers provided by the city which will not break, fall apart, rip or tear while being handled by the collector, or shall be secured in neat bundles, easily handled by the collector, not exceeding four feet (4') in length. Prohibited waste matter specified in section 3 of this chapter shall not be placed in city owned containers.

Rationale: This section is to keep the same standards for garbage as for recycling. When the city contracts with a company to collect the recyclables, it is important to have established standards for the bins. This section makes sure that the city is providing quality items for both garbage and recycling. Also, bin and storage requirements are necessary to ensure that no one attempts to use their own bins that may cause harm or damage to the collectors.

Section 5: Standards for the Collection of Recycling

The following standards and requirements are established as minimum requirements for the sanitary collection of recycling:

A. Every owner or occupant whose container or the place where the containers are kept pending collection, who does not meet the requirements described above, shall be duly notified by mail or by personal contact by the public works director.

B. Upon notifying the owner or occupant of the previously mentioned violation, the investigating representative shall establish an improvement deadline and shall give

the owner or occupant at least seven (7) days' written notice of the improvement deadline. The director of public works, at the time established for correction, shall investigate, and if the condition has been found to continue, said director shall declare it a misdemeanor.

C. If the director of public works receives notice in writing from the company charged with collection that the owner/renter of the residence and container has been placing prohibited items into the container, the director of public works will notify by mail or person that these items cannot be included in recycling. If the public works director receives another written letter one month after the initial complaint that the items are being included, then the director will declare it to be a misdemeanor.

C. If the director of public works receives notice in writing from the owner that a structure has been permanently abandoned; or if the director of public works receives notice in writing from the city director of building and safety or a Lewis and Clark County health officer that a structure has been condemned as not habitable, or unsanitary and dangerous to human life, recycling service may be discontinued and monthly charges stopped.

Rationale: While this section may seem extreme, it allows the city to have the power to charge people for not maintaining their recyclables or abusing the system. The misdemeanor is a fine and it will be described later. One month is adequate time to change behavior and learn what items should be included in the recycling. If the recyclables continue to be contaminated, the city must protect the collection provider and fine the violator. These rules also encourage participants to comply with the rules or be penalized. I did not see an appeals process when for garbage misdemeanors when I was researching the city ordinances; therefore, one is not included in the recycling section.

The city charges monthly rates for garbage and will do the same for recycling. The cost will be explained below.

Section 6: Responsibilities of All Parties:

Every person shall have the duty of maintaining premises or equipment under his supervision, or of maintaining containers or disposal areas, in compliance with the requirements of this chapter, Lewis and Clark County health regulations, and all applicable provisions of state law.

Every owner remains liable for violations imposed upon him by this code even though an obligation is also imposed on the occupants of his buildings, and even though the owner has, by agreement, imposed on the occupants the duty of complying with all the requirements of this chapter.

A. All residential recycling generators shall maintain their bins and keep the area surrounding the recycling containers free from refuse, garbage, recyclables, and other potential hazards to the public health, safety or welfare.

B. Recyclables shall be placed for collection and collected at a frequency which precludes the possibility of unsightly, unclean and unhealthy premises or the occurrence of a nuisance, and in no event shall placement and collection be less than once every two (2) weeks.

C. Every tenant and/or owner of the places or occupancies referred to above shall be responsible for the regular collection of refuse and garbage from said places of occupancy by authorized collectors of refuse and garbage, and they shall also be responsible for the payment of all services by said authorized collectors for said collection from said places of occupancy.

D. No person shall remove or permit the removal of any recyclables placed in containers or placed in an approved manner for collection except by an authorized collector.

The collector shall transfer the contents of all containers into the vehicles provided therefor, without spilling the contents of said containers on stairs, walks, yards or streets. The collector shall clean up any spillage occurring during collection and shall completely empty containers.

E. No person shall throw or deposit any refuse, garbage, recyclables, rubbish, waste matter, dead animal, or tires or cause the same to be thrown or deposited upon any street, alley, gutter, park or other public way or throw or deposit the same in or upon any premises or vacant lot or in any water or waterway thereto, or store or keep the same except in containers required by this chapter.

No person shall store, deposit or keep recyclables in any place or in any manner where rodents can have access to or feed thereon, or can use such refuse as a harborage, nest or breeding place.

F. Every vehicle used for the collection of recyclables shall be of a design and type suitably constructed for the intended use, and acceptable to the director of public works.

G. No person may pick over, sort, segregate or salvage any garbage or refuse deposited in an authorized disposal area.

H. No person, who is the owner, agent or occupant of a lot or premises whereon a building of any kind may exist or of a vacant lot, shall allow any collection of refuse, garbage, recyclables, rubbish, waste matter or filth of any description to remain on such

lot or premises longer than three (3) days, or any shorter period of time specified by the director of public works, after the date of a written notice issued by the director of public works to remove the offending material.

I. No refuse, garbage, recyclables, rubbish, waste matter or manure shall be transported along any public street, alley or public way unless such vehicle is so constructed and loaded that no such material can fall through or out of such vehicle.

J. All persons owning, occupying or being in control of property fronting on an alley of this city shall keep the portion of said alley between the centerline thereof and the property line of such property, and fronting on such property, free from refuse, garbage, recyclables, rubbish, and waste matter.

K. No refuse or garbage shall be collected which is not contained in the manner set forth in this chapter. Special collections shall be arranged with the city by the refuse generator.

Rationale: The section provides the guidelines for the city, the items eligible for collection, and how items should be handled. Most of these items are similar to the garbage collection and will not provide a significant burden to the city. Also, this section highlights the main duties of the collection agency and will be the main source for the contract negotiated between the city and collector.

Section 7: Penalties

Failure to carry out such duties herein or elsewhere required for the sanitary accumulation of recyclables in any place or in any condition not meeting the requirements of this code for recyclable generator is declared a misdemeanor. Any person violating the provisions of this code shall be punished as provided herein, except that the

minimum fine shall be the sum of twenty dollars. If violations continue, the fine will increase to a maximum of one hundred dollars at the discretion of the public works director.

Failure to carry out such duties herein or elsewhere required for the sanitary collection, transportation, and disposal of recyclables in any place or in any condition not meeting the requirements of this code for recyclable collector is declared a breach of contract. Any company found in violation of the provisions of this code shall be punished as provided herein, and may have the contract voided if the violations are significant.

Rationale: This section is provided to protect the city, the citizens, and the collector from violation of any codes. While the city only has a ten-dollar fine for trash violations, recycling violations are more significant because they not only affect the city, but the collector as well; therefore, the fine should be larger. The second paragraph is similar to a contract with the collector to ensure that they provide quality collection. When implementing a recycling program, it is important that the collection service is meeting expectations of the city and its constituents so that both parties will want to participate in the program.

Section 8: Rates and Charges:

A. Rates And Charges Set Forth: It shall be the duty of the city commission committee, comprised of commissioners, city staff, and collection agency staff, to set a charge for the cost of collecting and disposing of recyclables in the city by reestablishing residential rates and that said fees for such collection shall be paid in the amounts set forth in the negotiated contract or if changes are dramatic by August 15 of the year

hereinafter referred to:

B. Residential Rates:

The public works director shall be required, annually, to calculate the cost of residential collection and disposal and submit this figure to the city commission for its consideration. The public works director shall also annually provide the number of residential units to be assessed, as adjusted by a determination of the number of equivalent units as follows:

1. All units are allowed to choose how large of a garbage can they would like to use. The three sizes for the garbage bin are 48 gallon, 64 gallon, and 90 gallon and the prices will increase with the size of the bin. Recycling bins will be provided by the city and will all be the same size of 64 gallons. Units can have multiple recycling bins, if necessary, at no extra charge. The public director and collection agency will negotiate the costs of the bins prior to signing the ten-year contract. However, if dramatic changes occur within the prices then they may be re-negotiated with approval from the city commission.

A. The property may not require more than weekly pickup from any of the garbage or recycling containers.

B. If the largest garbage bin is insufficient to meet the needs of the unit's owners, and then the owner can request another garbage bin. The unit will then be charged monthly for both of the bins at the household.

C. Multiple households will no longer share garbage bins so that the appropriate costs of collection and disposal can be determined for each household.

Rationale: Within this section, the garbage costs and recycling costs are established.

The city must charge different fees for different size garbage bins, which will force constituents to use the recycling bins or face higher prices. The cost incentive to recycle is one of the most powerful ways to increase participation within a program and mitigate the costs of the program.¹⁶³ The city originally allowed homes to share a communal garbage bin that was 90 gallons and was picked up once a week. However, if there were evidence that a 90-gallon bin was not meeting the needs of the homes, another 90-gallon bin would be provided. All of the homes paid the same rate to use the communal bins that were located near their home. This is a large and neglected amount of garbage and the city should instead encourage recycling by providing multiple recycling bins rather than multiple garbage bins or more pickup. The changes to the entire structure of both garbage and recycling collection will cause a substantial cost to Helena, but because I do not understand the intricacies of garbage collection, I cannot verify the costs. While this is modeled after Moses Lake, Moses Lake was able to recycle the old garbage bins into the recycling bins for constituents. Helena will have to not only buy new garbage bins, but recycling bins as well.

If constituents do not want to recycle, but need more room, then they will have to pay more for their services. While the prices are not outlined, the bins need to be more than the ten-dollar monthly charge for garbage for a 90-gallon bin. Instead, the smallest size bin may cost \$10, but it will increase substantially as the bins become larger. Because homeowners do not have to pay for their recycling, it is to their advantage to increase the recycling bin, as long as they do not discard prohibited items. Since homes

¹⁶³ Richard Porter. "The Economics of Waste." In *Garbage and Recycling*, 105.

can no longer share bins, the city will collect much more money for garbage collection, but will have to make more stops to pick up in some areas up to four times more garbage cans. I will explain later in the policy analysis how the city can cope with these dramatic changes, but it is necessary to create a successful recycling program. Subsection C is necessary to encourage each household to reduce their garbage production by forcing each home to pay for their own bin. While there may be backlash at the beginning because of the costs associated with a change in garbage policies, the lasting effect will be reduced garbage within Helena.

Section 9: Duties of Recycling Supervisor

- A. It shall be the duty of the city recycling supervisor, annually, before the passage of the resolution fixing the recycling service charge, if the contract for the recycling collection agency is being re-negotiated, or before a new billing cycle (whichever comes first), to make the lists of residences current by showing how many residences need services.
- B. It shall be the duty of the city recycling supervisor to negotiate with the city recycling collection agency the rules and regulations necessary for the successful collection and operation of a recycling program within Helena. Once the rules and regulations have been negotiated and adopted, the city recycling supervisor will promulgate the rules and regulations for the operation of the city recycling program, and will make the said rules and regulations easily and readily available to the public by publishing them online and having a list of the regulations available at the city building.

C. The city recycling supervisor will work with the recycling collection agency to create educational material about the importance of recycling and how to recycle all recyclable materials. The supervisor will also increase publicity for the recycling program when necessary, to encourage constituents to participate within the program.

Rationale: This position is relatively new and the city ordinances have not been updated to explain the position. I have used the duties of the sanitation supervisor and expanded them to meet the needs of the recycling program. This job is important because it is the link between the city and the collection agency. All negotiations that need to occur between the city and the collection agency will go through the recycling supervisor. The city will provide help by advertising the program and making educational material readily available. In addition, when the curbside program is first implemented, it will be the job of the recycling supervisor to ensure that constituents fully understand how to pay for the program, the differences in bin sizes, the importance of recycling, and how to correctly recycle. This may be the most important job for the success of the recycling program because it is focusing on the education of the public and helping to increase participation. However, some oversight issues may occur. There are many different responsibilities that the recycling director must perform and it may be necessary for the city to hire staff to help. In addition, the director will need to be readily available when the recycling program is first implemented to answer any questions or concerns from constituents. Prompt response is essential to keeping support from constituents. As Paula Vicente and Elizabeth Reis explain, active, informative, and personal education is necessary for a

successful recycling program.¹⁶⁴ Having strong city mandates will help to ensure that the recycling director and constituents have clear guidelines to follow.

Section 10: Fees to Be Established

On or before August 15 of every ten years when the contract is about to expire or when the contract has been voided for reasons explained herein, the city commission shall form a committee of city commissioners, public works staff, the recycling supervisor, and representatives from the recycling collection agency to negotiate a tentative fee for collection and disposal services. The city commission will then pass a resolution of intention, which was recommended by the committee, to tentatively establishing fees for collection and disposal of residential recycling in conformity with an established schedule. In addition, said resolution of intention shall call for a public hearing to be held within two (2) weeks of the passage of said resolution of intention, said public hearing to concern itself with the establishment of said fees for collection and disposal of recycling.

Rationale: This section explains how the fees will be negotiated for the city. Helena is unique because the city sets the fees for garbage without creating a committee to look into the costs. Recycling has many variables and the costs change daily. Therefore, it is important to create a committee of experts to analyze the costs of collection and disposal of recyclables. The city will only have to negotiate the costs though every ten years, since that is how long the contract with a collection agency will last. Ten years may seem like a long time, however, most cities have longer contracts, which mitigate the

¹⁶⁴ Paula Vicente and Elizabeth Reis. “Factors Influencing Households participation in recycling”.

effects of dramatic rises and drops of prices of recyclables.¹⁶⁵ This allows for the contractor and the city to not worry about profit that may be created or lost from the recycling program. However, it is also important to have citizen input because they will be the participants of the program; therefore, the hearing is included to ensure that all parties affected are involved.

Section 11: Hearing of Objections; Charges

At the time set for the public hearing on the proposed fees for the collection and disposal of recycling in conformance with this chapter, or at such time to which said hearing may be continued, the city commission shall hear all proponents and opponents concerning the establishment of the proposed fees for the collection and disposal of recyclables. Upon the conclusion of said hearing, the city commission shall either adopt said fees, or make such changes in the assessments as it shall deem necessary and proper, and shall pass a resolution establishing said fees for the collection and disposal of recyclables. Thereafter, the city finance director shall certify said list of charges to the county clerk and recorder.

Rationale: This section allows for citizen participation and influence. While citizens may not understand the intricacies of the recycling program, it will highlight concerns that need to be addressed by the recycling director. Furthermore, citizen participation is critical for the implementation of a successful recycling program; constituents will understand the program better because they were involved in an aspect relating to the

¹⁶⁵ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

program.¹⁶⁶ The fees will not change dramatically over the ten-year period of the contract, so there will be very little need for many meetings.

Section 12: Refunds

No refunds of taxes collected under this chapter shall be made on objections after the passage of the city recycling ordinances section 1-15, except in cases of obvious error, and such refunds must be authorized by the city manager.

Rationale: This section is modeled very closely after the garbage ordinances. It is to protect the city and recycling collector from being sued or allowing constituents to avoid fines by finding loopholes. This binds all responsible parties to the ordinances.

Section 13: City Contracts for Recyclable Collector and Disposer

Within one year from the effective date hereof, the city shall no longer be the sole provider of recycling disposal services within the corporate limits of the city. The city will allow for private collection and operation of residential recycling disposal services within the corporate limits of the city one year after the effective date hereof.

The city will allow for only one private collection and operating agency within the city limits. The city will accept bids for a ten-year contract on August 1 and will announce the lowest and most preferred bid on August 15. The agency selected and its workers must comply with all city ordinances, rules, and regulations. The contract can be voided at any time if the ordinances, rules, or regulations are broken, or the services rendered are not provided in a professional manner.

A committee of city officials and staff and the agency's staff will determine the fee for collection; professionals can be brought in to help determine the price variations

¹⁶⁶ Ph.D. Doug Mckenzie Mohr. *Fostering Sustainable Behavior*. 3.

of recyclables and other materials necessary for collection and disposal. Once the price is determined at the beginning of the contract, it cannot be changed unless the city commission and agency agree that it is necessary. After ten years, the city will take bids for new contracts and will allow the agency that is currently being used to bid.

The city will provide the bins and educational material necessary for the recycling program.

Rationale: This is one of the few sections that is dramatically different from the garbage and solid waste disposal ordinances in Helena. Helena is the exclusive provider for garbage collection. However, it is clear that the city does not have the resources or will to initiate a successful curbside program, and therefore, a provider must be contracted. This was one of the suggestions by the survey conducted for Helena and is the most viable option because it will save both the city and constituents money in the end.¹⁶⁷ I am modeling this section after Moses Lake, which negotiated a ten-year contract with their provider. The provider collects and sells all of the recyclables and if there is a profit, then it is divided between the contractor and the city. However, if there is no profit, it is not an issue because the city has an established fee for paying for collection and disposal. This prevents the contractor and city from losing money.

The ten years also guarantees consistency with collection. Having too high of a turnover rate could affect prices, bins, and schedules which may drive people away from recycling. I believe that constituents become accustomed to collections and it is

¹⁶⁷ Anderson-Montgomery Consulting Engineers . *Residential Recycling Program*

Enhancement Study for the City of Helena. Draft , Helena: City of Helena, 2009.

important that once a new system has been created, it has time to become a pattern and way of life for constituents.

Section 14: Funding for Recycling Program

This section is the most contentious because it describes how to fund the program and buy the bins. In the past, the city of Helena has pursued a variety of different options to raise money, whether that is through redistricting and rezoning areas to increase tax revenue, or creating a new tax district.¹⁶⁸ Moses Lake was unique because they saved money for over twenty-three years in the sanitation fund in order to pay \$600,000 for the bins. However, Helena has not exhibited forethought, nor do they possess the means to save the money for recycling. While the recycling program will be almost neutral in costs due to a savings in transportation and transfer station fees, the city will need money for startup fees, hiring a private organization, and covering any hidden fees that may arise. Since I do not know the intricacies of tax law and regulations and the sanitation ordinances within the city do not explain funding for the program, I am leaving this section more open for the city to develop. While I have not clearly outlined the steps necessary to procure the amount necessary to purchase the recycling bins, the city must meet this step first before it is going to achieve a successful recycling program.¹⁶⁹ The two examples I have highlighted are only a few of the options that can be pursued by a city to raise money.

¹⁶⁸ Matt Elsaesser, interview by Sarah Brown. *City Commissioner & Executive Director* (August 30, 2011).

¹⁶⁹ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

Another cost and limitation of the policy is that I do not know how much more the city will have to pay for a new system of garbage collection. The city will have to hire more personnel and buy additional materials, such as different size garbage bins and an additional garbage truck, because the city will have to pick up garbage from every home. Currently the city has communal garbage cans, which can be picked up by one driver. If, however, the city has many sized garbage bins and every home has one, the city will have to hire another staff person to help with collection. I cannot estimate the amount that garbage will increase or decrease after the implementation and therefore cannot estimate these hidden costs. However, it is clear that the city must procure a significant amount of money to fund the initial installment of the recycling program.

Section 15: Education Plan

- A. Two months before the recycling bins are to be bought and distributed, the recycling director and city staff will mail a letter to all Helena residents explaining that a curbside program will be implemented in Helena, the costs of the program, and why recycling is important. The letter will be posted on the front page of the website.
- B. One month prior to implementation of the curbside recycling program, the city will create a link on the front page of the city's website directing constituents to a recycling website page. On the page, residents will be able to learn about the costs of the program, what items may be included, the importance of recycling for the city, and the emails and phone numbers of the recycling director and staff in charge of the recycling program so that questions can be answered.

- C. Two weeks prior to the implementation of the recycling program, the city will distribute a recycling, garbage schedule, and a list of items allowed and prohibited in the recycling bins.
- D. When the bins are delivered, a flyer and calendar will be attached reiterating which items can be recycled and when the collection dates will be. Also, the phone number and email of the recycling director will be attached to the flier so constituents can ask questions.
- E. After two collection periods, if someone is not using his or her recycling bin, the recycling director will send the constituent a letter explaining the process and inquiring about why the program is not being used. If the constituent continues to decline the use of the recycling program, the constituent will be called by the director to explain the benefits of recycling and costs associated with garbage collection versus recycling.
- F. If there is still no use of the recycling program, a third attempt to reach the constituent will follow, through personal contact of either the recycling director or staff. This will be the last attempt to ensure that constituents understand the recycling program.
- G. The city and recycling director will make sure that the city website maintains a link and webpage for the recycling program. Pamphlets and calendars explaining how to use the program will be sent once a year to constituents to ensure that everyone is still in compliance. The calendars and pamphlets may eventually be phased out to paper-less methods, but in the first two years, letters should be sent.

Rationale: None of the city ordinances within Helena has an education plan for the program. Nonetheless, creating a curbside recycling program is unique because it is necessary for constituents to understand in order to participate. While the recycling director is in charge of educating the public about recycling, providing an outline of how to educate the city will be helpful since Helena has never educated the population before about recycling. I modeled the timeframe and types of contact after Moses Lake because the city was so successful at increasing participation. Personal contact is important to ensure that people are encouraged to participate.¹⁷⁰ Helena, which has not done a very good job of publicizing the current blue bag program, must prioritize the new program so that people know what is available and can understand the dramatic changes taking place.

Conclusion

While Chapter 3 was specifically designed for Helena, Montana many of the ordinances could be applied to another small city. It is important to lay a strong foundation for the rules and regulations that are going to be implemented in a city, so that when it does hire a contractor, most of the terms of the contract are already outlined within the city ordinances. Each city will have different needs, such as where the bins can be placed and how often the bins need to be picked up; however, the overall scope of the program should be similar.

¹⁷⁰ Vicente, Paula, and Elizabeth Reis. "Factors influencing households' participation in recycling." *Waste Manage Resources*. 26 (April 2008): 140-146. Accessed September 15, 2011. Academic Search Complete (doi:10.1177/0734242X07077371), 140.

The next step for small town recycling is to see if the implementation I have laid out above is adequate to installing a sustainable recycling program. If I had more time and resources, I would interview many other small cities to see if the cities are having similar problems, or if each city's struggle is different. Moses Lake's program has only been running for one year, but it does provide hope that small towns across the Pacific Northwest can and will implement recycling programs. While the costs may be large when first implementing the program, the direct and indirect benefits achieved through recycling will supersede the costs.

Chapter 4: Conclusion

There has not been significant research on small town recycling. This thesis demonstrates that installing a recycling program within small towns is a complicated endeavor. The comparison of Helena, Montana and Moses Lake, Washington highlights the obstacles to policy formation, and, in particular, the implementation of recycling programs. A salient conclusion is that non-governmental organizations, which may be attempting to help the city accomplish a goal, may in fact, hinder the policy progress. The limited resources of small towns means that every policy implemented must be planned thoroughly and have lasting beneficial effects for the community. It is clear, however, that Helena has not fully researched its policy options, nor has it adequately supported the policies currently implemented.

Helena's inability to install a successful recycling program illuminates deeper problems within the city commission and city policies. Helena has been relying upon Matt Elsaesser, the executive director of S.A.V.E. and a city commissioner, to help promote the blue bag program and increase support for recycling within Helena. However, the S.A.V.E. webpage does not advertise the city's blue bag program.¹⁷¹ S.A.V.E. does not provide a timeline for when the city might begin collecting plastics; instead, it allows the city to provide all of the necessary equipment for S.A.V.E. plastic drives.¹⁷² S.A.V.E.'s promotion of Helena Recycling, LLC and S.A.V.E. plastics drives

¹⁷¹ S.A.V.E. *Recycling in Helena*. 2007. <http://www.savemobile.org//Recycle/recycling.helena.shtml> (accessed August 1, 2011).

¹⁷² Matt Elsaesser, interview by Sarah Brown. *City Commissioner & Executive Director* (August 30, 2011).

means that neither S.A.V.E. nor Matt Elsaesser is helping to create a successful recycling program. Rather, all participants are maintaining the status quo, which guarantees the presence of these organizations in Helena for quite some time, and security for its management, but prevents the adoption of a comprehensive curbside recycling side. In contrast, Moses Lake had a staff person, Ron Cone, who cared deeply about having a successful recycling program implemented within the city.¹⁷³ Ron created and presented the proposal and helped establish the program with the contractor. This thesis shows that non-governmental organizations may increase awareness about a topic, like recycling, but cannot decisively influence the implementation of a policy.¹⁷⁴ The policy must be supported and proposed by a staff person who does not have competing interests in the success of another organization.

Another problem that was highlighted through the thesis is that the city governance in Helena does not have adequate information about the blue bag program, nor are they disseminating the information that they do have. When the city did attempt to learn about the blue bag program through the private study, it was stopped before it could be finalized.¹⁷⁵ It is problematic that the blue bag program does not have a budget line, although the city has hired a recycling supervisor and has a driver to pick up the blue bags. The city has not specified the costs of the program. Every program within the city should have a clear expense. The commissioners stated that the program cost \$40,000 a

¹⁷³ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

¹⁷⁴ Emma Taylor. "Building community with recycling: A case study of two small islands in British Columbia, Canada." (PhD diss., University of Victoria, 2005.)

¹⁷⁵ Matt Elsaesser, interview by Sarah Brown.

year¹⁷⁶, however, when analyzing the budget spreadsheets, it is unclear if this amount is the true cost. The study was the city's one attempt to learn about the deficiencies of the blue bag program and to improve the system; instead, the city wasted money, and is left with no new information. The ignorance about recycling among the city commissioners is striking. Many of the commissioners did not understand the importance of curbside recycling and the economics of recyclables. While the market for recyclables may fluctuate, there are ways to reduce the risk to cities and contractors. Small towns need to be proactive about gaining information regarding their programs. Moses Lake saved money for twenty-three years to provide a recycling program and the city did not implement a recycling program until the commissioners thought that it was feasible for the city.¹⁷⁷ Moses Lake only took one year to implement the recycling program; it is clear that the city commissioners understood both the recycling program and the intricacies of recycling.

Although the thesis only analyzes two small towns in the Northwest, it provides clear direction about what cities should-and should not do-when implementing a recycling program. In another study, I would like to analyze other small towns to see if they experienced similar problems. My literature review and research suggests that small towns are dependent upon non-governmental organizations, which tend to deliver poorer

¹⁷⁶ Ronald J. Alles, interview by Sarah Brown. *City Manager* (August 29, 2011); Matt Elsaesser, interview by Sarah Brown.

¹⁷⁷ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

service.¹⁷⁸ Helena's experience supports this finding, but Moses Lake's suggests cities can overcome this challenge with careful and coherent planning.

More generally, the three factors of education, participation, and cost for a successful recycling program are important for all cities, no matter the size. Moses Lake's personal contact and interaction, while time-consuming, has been successful at increasing education and participation. Cities across the nation should take a more personal approach to their public policies, especially ones that demand active participation from constituents.¹⁷⁹ They should provide an explanation as to why the program is being implemented and the important role of the constituents to help to encourage participation. The prioritization of recycling above all other policies within Moses Lake shows the importance of the recycling program to the city, especially when the city first initiated.

The cost of recycling programs is harder to predict. Each city has different taxes, different populations, and different requirements that need to be met in order to implement and sustain a program. However, cities must begin to think creatively and overcome the misconceptions concerning recycling that have proliferated. Selling recyclables for profit does not need to happen in order for a recycling program to be successful: cities may need to increase garbage prices to increase recycling participation. This misconception is just a one that exists within Helena, and in many other cities. By

¹⁷⁸ J. Bridger and A. Luloff. "Toward an interactional approach to sustainable

Community development." *Journal of Rural Studies*, 15 (1999): 377-387.

¹⁷⁹ Ph.D. Doug McKenzie Mohr, *Fostering Sustainable Behavior*. 3rd . Gabriola Island : New Society Publishers , 2011, 3.

overcoming them, cities are going to see that recycling programs are beneficial and feasible.

While Helena case study presents the obstacles to implementing a recycling program, Moses Lake offers hope that public policy can be useful and provide significant direction for a successful recycling program. Moses Lake's city commission educated themselves about what was the best policy for the city and waited until the city could successfully implement the recycling program. Moreover, the city commissioners dedicated themselves fully to the success of the program by providing the necessary resources, such as focusing their website on the program, having city personnel mail and call constituents, and encouraging participation. Moses Lake should become a model for other cities hoping to install a recycling program. While cities may not be as financially viable prudent as Moses Lake, cities can create a fund to save money or create new tax districts to fund the program. Another critical aspect of Moses Lake's recycling program is that someone within the city government that supported the program completely. This is crucial because it helps the city to pursue implementation of the program and to continue the program after the initial implementation.¹⁸⁰ Moses Lake's successful attention to the three factors shows that public policy can work. Small towns can successfully implement a recycling program.

Recycling provides many benefits to constituents, cities, and the environment. Recycling will save constituents money, insofar as they can reduce their garbage costs by recycling. Cities can benefit as well, not only from saving money on transportation costs by reducing the amount of refuse entering a distant landfill, but also by not filling a

¹⁸⁰ Karen Liebrecht, David Curnel, Joseph K. Gavinski, and Dave Fournier, interview.

landfill too quickly. Landfills are costly to build and to monitor after they have been filled.¹⁸¹ Land is very valuable and constituents and cities should be attempting to reduce the demand for new landfills. Finally, it is important to recycle because it benefits the environment. Recycling allows valuable resources to be reused rather than sit in a landfill. By harnessing the energy contained in recyclables by creating a new object, people are reducing the need to mine for new materials. Every city should eventually have a recycling program, though this will be more difficult, but not impossible, for small towns. My thesis demonstrates that recycling programs can be implemented and sustained within small towns, if they are willing to change public policy.

¹⁸¹ Ronald J. Alles. interview by Sarah Brown.

Appendix A: Questionnaire

Interview Form for phone, person, and/or email:

Name:

Title:

Email:

Phone:

Mailing Address:

1. What is your current position within the public office or volunteer advocate group?
What are your duties within the city?

2. How long have you been working in this position? How long have you been an advocate for the recycling program?

3. How long have you been pursuing/hearing about installing a recycling program within your city?

4. What is the structure of the recycling program that was passed or presented? (Please provide as much information as possible about the program)

5. Were there any alternative programs that were being pursued at the same time?
 - i. If yes, what were they?

 - ii. Why were they not as successful as the final recycling program?

6. Could you please describe the chronology of events, from your perspective, that led to passage or lack of passage of your recycling program and its specific activities?
 - i. Were there any road blocks/obstacles that hindered progress? (If yes, please explain)

 - ii. Were there any boons/advantages that helped implementation of the recycling program? (If yes, please explain)

7. Did any advocacy groups or individuals (e.g. politicians, businesses, environmental groups, citizens groups, etc.) actively promote or attempt to deter implementation of your recycling program? If yes, please explain these efforts.

i. Who was the most influential with their campaign?

ii. Why were they successful?

8. Did you support the recycling program when it was presented to the city council? Why or Why not?

9. Were there any faults with the program or other reasons to not support the program?

i. If yes, how could those faults have been avoided or minimized?

10. What do you consider to be the main benefit of your recycling program?

11. What is the main drawback or limitation of your recycling program?

12. Please briefly describe how the program works? (please include information on the following topics

i. What is included in the recycling program? (glass, paper, plastic, metal, etc.)

ii. Where does the sorting occur? How much sorting must residents/businesses do?

iii Who is included in the program? (Residents, businesses, county)

iv. How often is the recycling picked up? Are all types of recycling pick up at the same time?

v. Where is the recycling taken after it is picked up?

13. What are the overall costs and benefits of the recycling program to the city and/or voters?

i. Costs for the city?

ii. Do the voters/citizens pay for the program? If they do not, how is funding for the program achieved?

iii. Benefits to the city and to the voters/citizens?

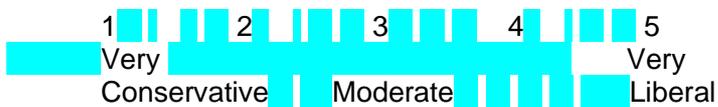
14. Overall, how satisfied are you with the recycling program?

15. Do you have any suggestions for how to improve the program?

i. What would be your ideal recycling program for your city?

ii. What advice or suggestions would you give to other cities/groups pursuing similar recycling program goals?

16. How would you describe your overall political ideology? Please circle a number between 1-5, with 1 being very conservative, 5 being very liberal, and 3 moderate. You may select any number between 1 and 5.



Thank you for your time and consideration in answering all of the questions.

I may have follow up questions after reading your answers. If you do not wish to be contacted further please sign here:

If you have signed the confidentiality agreement, your answers will not be published verbatim, but will only be used for data analysis.

If you would like to contact me at any time, please email SaBrown@carroll.edu or call at 406-422-6738.

Appendix B: Helena Sanitation Policy

6-1-1: DEFINITIONS:

The following definitions of terms shall apply unless the context clearly indicates another meaning or unless elsewhere expressly stated for specific application:

CITY OWNED CONTAINER: Any container supplied to residential or commercial refuse generators by the city.

COMMERCIAL REFUSE GENERATOR: Any person in charge of, owning, leasing, renting or occupying any multi-family dwelling unit in excess of four (4) units, business, industrial or commercial building, including, but not limited to, an apartment complex, store, office, factory, motel or hotel, that generates refuse.

COMPOST: The product resulting from the decomposition of leaves, straw, grasses and other such vegetable matter mixed or unmixed with well rotted manure, or mixed or unmixed with inorganic materials ordinarily forming a part of the soil such as sand or lime, loam and used, usable or intended to be used as a fertilizer and soil conditioner.

DIRECTOR OF PUBLIC WORKS: "Director of public works" or "public works director", where stated in this code, shall mean the director of public works, or his/her duly authorized representative.

DISPOSAL AREA: Any site, location, tract of land, area, building, structure or premises used or intended to be used for refuse transfer and/or disposal.

GARBAGE: Every accumulation of animal, vegetable or other matter that attends the preparation, consumption, decay, dealing in or storage of meats, fish, fowl, birds, fruit or vegetables, including the cans, containers or wrappers wasted along with such materials.

OCCUPANT: The person occupying a dwelling unit or the person operating, managing or keeping any hotel, restaurant, food establishment, commercial establishment, business

establishment, school, church, institution or premises wherein or whereon refuse accumulates or is likely to accumulate.

REFUSE: Any waste product solid or having the character of solids rather than liquids in that it will not flow readily without additional liquid and which is composed wholly or partly of such materials as garbage, swill, seepings, cleanings, trash, rubbish, litter, industrial solid wastes or domestic solid wastes; organic wastes or residue of animals sold as meat; fruit or other vegetable or animal matter from kitchens, dining rooms, markets, food establishments or any places dealing in or handling meat, fowl, fruits, grain or vegetable offal, animal excreta, or the carcasses of animals; brick, plaster or other waste matter resulting from the demolition, alteration or construction of buildings or structures; accumulated waste material, cans, containers, tires, junk, or other such substance which may become a nuisance.

REFUSE COLLECTION: The process whereby refuse and/or refuse containers containing refuse are taken from designated locations on any premises and are loaded into vehicles of any kind intended to transport refuse from the premises to a disposal area, and whereby empty containers are returned to such designated location.

REFUSE COLLECTOR: The person who is or intends to be engaged in the collection and/or transportation of refuse, including garbage, rubbish or waste matter in any part of the city.

REFUSE DISPOSAL: The complete process required for the disposal of any refuse and shall include all tools, equipment, treatment space, buildings, structures, appurtenances and materials required to take refuse from a refuse collector at the premises line or other designated transfer point of a disposal area, and transport, bury, incinerate, destroy or

otherwise dispose of such refuse.

RESIDENTIAL REFUSE GENERATOR: Any person generating refuse other than a "commercial refuse generator" as defined above.

RUBBISH: Wood, leaves, trimmings from shrubs, dead trees or branches thereof, shavings, sawdust, excelsior, wooden ware, printed matter, paper, paper board, pasteboard, grass, rags, straw, boots, shoes, hats and all other combustible material not included under the term "garbage".

TRANSPORTATION OF REFUSE: That portion of the refuse disposal operation which provides for the hauling of refuse in bulk or in refuse containers to the designated transfer point at a disposal area.

WASTE MATTER: Waste material composed of soil, earth, sand, clay, gravel, loam, stone, bricks, plaster, crockery, glass, glassware, ashes, cinders, shells, metals and all other noncombustible material which has been or is discarded or is to be discarded. (Ord. 2339, 4-2-1984; amd. Ord. 2599, 6-24-1991)

6-1-2: STANDARDS FOR ACCUMULATION OF REFUSE AND GARBAGE:

The following standards and requirements are established as a minimum for the sanitary accumulation and storage of refuse and garbage pending collection:

- A. All refuse and garbage shall be placed in city owned containers, or containers approved by the director of public works.
- B. Residential refuse and garbage generators equipped with city owned rollout containers shall place refuse and garbage containers on the scheduled collection days at the curb line in front of their residences. Containers shall not be placed for collection before six

o'clock (6:00) P.M. on the day preceding the day of collection, and after the containers are emptied they shall be removed from the curb line on the day of collection.

C. City owned containers shall be distributed and positioned as approved by the director of public works. Containers serving more than one residence shall be positioned along the rear or side alley in a manner to facilitate efficient collection and accessibility for refuse and garbage generators and city refuse and garbage collectors, as determined by the director of public works. (Ord. 2339, 4-2-1984)

6-1-3: STORAGE OF RUBBISH:

Rubbish shall be placed and stored in city owned containers or containers approved by the director of public works.

Materials that do not fit into city owned containers shall be secured in neat bundles, easily handled by the collector and not exceeding four feet (4') in length. Bundles shall be placed neatly in a pile in the generator's portion of the alley (for alley service), or adjacent to the generator's curb line (for street service). Refuse and garbage containers and public rights of way shall not be blocked by placement of said material.

Whenever possible, the refuse generator shall attempt to break down materials so that they will readily fit into the container. Whenever special handling is required, the refuse generator shall be responsible to contact the sanitation department to arrange for special collection. (Ord. 2339, 4-2-1984)

6-1-4: PROHIBITION:

It is prohibited to place the following materials in a city owned container:

- A. Large limbs or trimmings that do not allow the container lid to close.
- B. Flammable liquids.
- C. Large construction, demolition, or remodeling debris.
- D. Concrete, dirt or plaster.
- E. Appliances or other furniture that will not allow the container to close.
- F. Hot ashes.
- G. Dead animals, or parts thereof. (Ord. 2339, 4-2-1984)
- H. Tires. (Ord. 2749, 9-25-1995)

6-1-5: STORAGE OF WASTE MATTER:

Waste matter shall be placed in sturdy, well built containers which will not break, fall apart, rip or tear while being handled by the collector, or shall be secured in neat bundles, easily handled by the collector, not exceeding four feet (4') in length. Prohibited waste matter specified in section [6-1-4](#) of this chapter shall not be placed in city owned containers. (Ord. 2339, 4-2-1984)

6-1-6: BULK STORAGE:

Bulk handling or storage of refuse of any character shall be subject to review by the public works director, and the owner or occupant of any industrial, commercial or business establishment shall make such provisions as the director of public works may require for the sanitary storage and collection of such refuse as may be produced in bulk. (Ord. 2339, 4-2-1984)

6-1-7: STANDARDS FOR THE COLLECTION OF REFUSE AND GARBAGE:

The following standards and requirements are established as a minimum for the sanitary collection of refuse and garbage:

A. Every owner or occupant whose container, or the place where the containers are kept pending collection, not meeting the requirements aforesaid, shall be duly notified by mail or by personal contact by the public works director.

B. Upon notifying the owner or occupant of the aforesaid violation, the investigating representative shall establish an improvement deadline and shall give the owner or occupant at least seven (7) days' written notice of the improvement deadline.

The director of public works, at the time established for correction, shall investigate, and if the condition has been found to continue, said director shall declare it to be a misdemeanor.

C. If the director of public works receives notice in writing from the owner that a structure has been permanently abandoned; or if the director of public works receives notice in writing from the city director of building and safety or a Lewis and Clark County health officer that a structure has been condemned as not habitable, or unsanitary and dangerous to human life, refuse and garbage service may be discontinued and monthly charges stopped. (Ord. 2339, 4-2-1984)

6-1-8: RESPONSIBILITIES:

Every person shall have the duty of maintaining premises or equipment under his supervision, or of maintaining containers or disposal areas, in compliance with the requirements of this chapter, Lewis and Clark County health regulations, and all applicable provisions of state law.

Every owner remains liable for violations imposed upon him by this code even though an

obligation is also imposed on the occupants of his buildings, and even though the owner has, by agreement, imposed on the occupants the duty of complying with all the requirements of this chapter.

A. All commercial refuse generators shall maintain their alleys and keep the area surrounding the refuse and garbage containers free from refuse, garbage and other potential hazards to the public health, safety or welfare.

B. Those commercial establishments using city owned containers shall bear the complete responsibility of keeping the containers in a sanitary condition at all times. No building permit for a commercial establishment shall be issued without provision having been made for refuse and garbage container storage and sanitation.

C. Containers for the receipt of accumulation of refuse and garbage may be placed in parks, recreation areas, places of public assembly and along public ways, subject to the approval of the director of public works. Refuse and garbage containers in such places shall be placed only in designated locations acceptable to the director of public works.

D. Public markets, all food service establishments producing putrescible waste and all business areas shall provide adequate and sufficient storage containers to hold all waste accumulated between collections, without creating a public hazard.

E. Refuse and garbage shall be placed for collection and collected at a frequency which precludes the possibility of unsightly, unclean and unhealthy premises or the occurrence of a nuisance, and in no event shall placement and collection be less than once every two (2) weeks.

F. Every tenant and/or owner of the places or occupancies referred to above shall be responsible for the regular collection of refuse and garbage from said places of

occupancy by authorized collectors of refuse and garbage, and they shall also be responsible for the payment of all services by said authorized collectors for said collection from said places of occupancy.

G. No person shall remove or permit the removal of any refuse and garbage placed in containers or placed in an approved manner for collection except by an authorized collector.

The collector shall transfer the contents of all containers into the vehicles provided therefor, without spilling the contents of said containers on stairs, walks, yards or streets. The collector shall clean up any spillage occurring during collection and shall completely empty containers. (Ord. 2339, 4-2-1984)

H. No person shall throw or deposit any refuse, garbage, rubbish, waste matter, dead animal, or tires or cause the same to be thrown or deposited upon any street, alley, gutter, park or other public way or throw or deposit the same in or upon any premises or vacant lot or in any water or waterway thereto, or store or keep the same except in containers required by this chapter. (Ord. 2339, 4-2-1984; amd. Ord. 2749, 9-25-1995)

No person shall store, deposit or keep refuse in any place or in any manner where rodents can have access to or feed thereon, or can use such refuse as a harborage, nest or breeding place.

I. No person shall deposit or cause to be deposited any refuse in any place not authorized as a disposal area by the director of public works.

When acceptable to the director of public works, the owner of a premises or any public agency having jurisdiction, may place rubbish and waste matter in low areas and low lots when properly filled, leveled and covered, and when such practice is not likely to create

an unsanitary condition or nuisance.

The owner of the property receiving such deposit will be held responsible for any unsanitary condition or nuisances resulting from such deposit.

J. Every vehicle used for the collection of refuse and garbage shall be of a design and type suitably constructed for the intended use, and acceptable to the director of public works.

K. Each person engaged in the construction, repair or demolition of any building or structure or part thereof, shall remove and dispose of in an authorized manner, from any street, alley, gutter, park, sidewalk, curbing, curb space, any public way or any premises not owned by him, all waste matter or rubbish deposited thereon in connection with that portion of the repair, construction or demolition work under his special or general supervision.

Such refuse, waste matter and rubbish shall be cleaned up, removed and disposed of in a sanitary manner within seven (7) days of the final cessation of work on such building or structure or part thereof, and the area shall be restored to its original condition by the person conducting said work, unless otherwise specifically authorized by the director of public works.

L. No person may pick over, sort, segregate or salvage any garbage or refuse deposited in an authorized disposal area.

M. No person, who is the owner, agent or occupant of a lot or premises whereon a building of any kind may exist or of a vacant lot, shall allow any collection of refuse, garbage, rubbish, waste matter or filth of any description to remain on such lot or premises longer than three (3) days, or any shorter period of time specified by the director

of public works, after the date of a written notice issued by the director of public works to remove the offending material.

N. No refuse, garbage, rubbish, waste matter or manure shall be transported along any public street, alley or public way unless such vehicle is so constructed and loaded that no such material can fall through or out of such vehicle.

O. Every person who is the owner or custodian of any animals, fowl, livestock, or game which has died (other than by slaughter for food), any animal offal from slaughterhouses, slaughter pens, or any offal or putrescible waste from any place where meat, fish, poultry, game, or fowl are sold, handled or discarded as unfit for food, or spoiled or condemned, shall dispose of the remains, carcasses, parts, or entrails thereof within the next available period of daylight, after such death or accumulation, in a sanitary manner and in conformance with all requirements and orders of the director of public works.

P. All dead animals, or parts thereof, which are found on or in any public street, alley, parkway, public way, or on public property, shall be reported to the Helena police department who shall be responsible for the collection, within the day reported, of the carcass of such animal.

Q. All persons owning, occupying or being in control of property fronting on an alley of this city shall keep the portion of said alley between the center line thereof and the property line of such property, and fronting on such property, free from refuse, garbage, rubbish, and waste matter.

R. No refuse or garbage shall be collected which is not contained in the manner set forth in this chapter. Special collections shall be arranged with the city by the refuse generator.

(Ord. 2339, 4-2-1984)

6-1-9: PENALTIES:

Failure to carry out such duties herein or elsewhere required for the sanitary accumulation, collection, transportation and disposal of refuse in any place or in any condition not meeting the requirements of this code is declared a misdemeanor. Any person violating the provisions of this code shall be punished as provided herein, except that the minimum fine shall be the sum of ten dollars (\$10.00). (Ord. 2339, 4-2-1984)

6-1-10: RATES AND CHARGES:

A. Rates And Charges Set Forth: It shall be the duty of the city commission to set a charge for the cost of collecting and disposing of garbage and refuse in the city by reestablishing both residential rates and commercial rates in separate classifications and that said fees for such collection shall be paid in the amounts set forth in the annual resolution hereinafter referred to:

B. Residential Rates:

Class I Residential structures having up to 4 units in 1 structure.

Class II Residential structures having more than 4 units in 1 structure.

Class III Mobile home parks.

Class IV Properties which qualify for the state of Montana class 15 taxation classification.

The public works director shall be required, annually, to calculate the cost of residential collection and disposal and submit this figure to the city commission for its consideration.

The public works director shall also annually provide the number of residential units to be assessed, as adjusted by a determination of the number of equivalent units as follows:

1. For the purposes of determining the number of units to be assessed in a class I residential structure, the public works director may, upon a proper showing by an owner of class I Property, determine on a year by year basis that the property be assessed on an equivalent number of residential units rather than on the number of actual units, but in no case less than one unit. A proper showing for determining equivalent number of units must satisfy all the following conditions:

a. The residential use must prove to be atypical and extraordinary such that the amount of solid waste generated from all the units is equal to or less than the amount of solid waste generated from a single residential unit. Atypical includes units that do not have separate cooking and eating areas; are used primarily for sleeping purposes by less than two (2) persons; are fully furnished by the owner; and the owner is responsible for providing all utility services to the units.

b. The property may not require more than weekly pickup from one 90-gallon container.

2. The determination of equivalent number of units in this subsection B is only valid for a one year period. To be eligible for an annual renewal of the determination, the property owner must provide information establishing the continuation of a proper showing. If the property generates such solid waste at least three (3) times per year that one 90-gallon container is insufficient to handle the waste, the property must be assessed for the next fiscal year on the total number of units and does not qualify for a determination of equivalent units under this section.

C. Commercial Rates: The public works director shall be required, annually, to calculate the cost of commercial collection and disposal and submit this figure to the city commission for its consideration.

D. Transfer Station/Landfill Rates: The public works director shall be required annually to apply the cost of disposal to the total tons disposed and submit this figure to the city commission for its consideration. Cost of disposal shall include transfer station and landfill charges. (Ord. 2931, 1-14-2002, eff. retroactive to 7-1-2001)

6-1-11: FEES AND CHARGES AGAINST PROPERTY:

A. The fees hereinabove established shall be assessed against the real estate from which such garbage or refuse is collected unless otherwise specifically provided herein or by the director of public works.

B. All commercial garbage and refuse generators shall pay all charges levied or assessed under this chapter to the city upon a monthly basis. (Ord. 2339, 4-2-1984)

C. If, for any cause, any sums owing for commercial service hereunder become delinquent, garbage and refuse collection service shall be discontinued until all such delinquencies have been paid in full. Notice of any such proposed discontinuance shall be sent to the commercial user through the U.S. mail, addressed to said commercial user at the commercial user's normal mailing address. Said notice shall inform the commercial user that unless all past due rates charged hereunder are paid within fifteen (15) days of the date of said notice, service shall be discontinued. In addition, the notice shall inform the commercial user that if any questions exist concerning the rates or charges owed by the commercial user, the commercial user can contact the director of public works or the director's designee at 316 North Park Avenue, Helena, Montana, to discuss the matter. If the delinquent amounts have not been paid in full within fifteen (15) days of the date of the notice, then no further service shall be rendered by the city to the delinquent commercial user. In addition, all city owned containers that service commercial user's

premises shall be removed. A twenty five dollar (\$25.00) fee shall be paid by commercial user for return of the container to commercial user's premises after all delinquencies have been paid in full. This fee may be changed from time to time, by resolution, when the commercial collection and disposal rates are changed. (Ord. 2805, 8-4-1997)

D. In the event any sums owing for disposal at the transfer station by commercial garbage and refuse generators become delinquent, said commercial generator, and/or his representatives, shall be prohibited from further disposal at the transfer station until all such delinquencies have been paid in full. (Ord. 2599, 6-24-1991)

6-1-12: DUTIES OF SANITATION SUPERVISOR:

A. It shall be the duty of the city sanitation supervisor, annually, before the passage of the resolution fixing the garbage service charge, to bring current the lists of residential and commercial users in their proper categories. (Ord. 2339, 4-2-1984)

B. It shall be the duty of the city sanitation supervisor to promulgate and adopt rules and regulations for the operation of the city transfer station, and to make said rules and regulations easily and readily available to the public. (Ord. 2599, 6-24-1991)

6-1-13: FEES TO BE ESTABLISHED:

On or before August 15 of each year, the city commission shall pass a resolution of intention tentatively establishing fees for collection and disposal of residential garbage and refuse in conformity with an established schedule. In addition, said resolution of intention shall call for a public hearing to be held within two (2) weeks of the passage of said resolution of intention, said public hearing to concern itself with the establishment of said fees for collection and disposal of garbage and refuse. (Ord. 2339, 4-2-1984; amd. Ord. 2599, 6-24-1991)

6-1-14: HEARING OF OBJECTIONS; CHARGES:

At the time set for the public hearing on the proposed fees for the collection and disposal of garbage and refuse in conformance with this chapter, or at such time to which said hearing may be continued, the city commission shall hear all proponents and opponents concerning the establishment of the proposed fees for the collection and disposal of garbage and refuse. Upon the conclusion of said hearing, the city commission shall either adopt said fees, or make such changes in the assessments as it shall deem necessary and proper, and shall pass a resolution establishing said fees for the collection and disposal of garbage and refuse. Thereafter, the city finance director shall certify said list of charges to the county clerk and recorder. (Ord. 2339, 4-2-1984)

6-1-15: REFUNDS:

No refunds of taxes collected under this chapter shall be made on objections after the passage of the resolution referred to in section [6-1-13](#) of this chapter, except in cases of obvious error, and such refunds must be authorized by the city manager. (Ord. 2339, 4-2-1984)

6-1-16: RESERVED:

(Ord. 2339, 4-2-1984)

6-1-17: CITY AS EXCLUSIVE PROVIDER OF GARBAGE AND SOLID WASTE DISPOSAL SERVICES:

Five (5) years from the effective date hereof, the city shall be the sole provider of garbage and solid waste disposal services within the corporate limits of the city. This section has

no effect on individuals, firms or companies providing commercial garbage or solid waste disposal services. However, all private collection and operation of residential garbage and solid waste disposal services shall cease and terminate within the corporate limits of the city five (5) years after the effective date hereof. (Ord. 2481, 9-26-1988)

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