



WESTMINSTER

Staff Report

TO: The Mayor and Members of the City Council

DATE: September 9, 2010

SUBJECT: Briefing and Post-City Council Briefing Agenda for September 13, 2010

PREPARED BY: J. Brent McFall, City Manager

Please Note: Study Sessions and Post City Council briefings are open to the public, and individuals are welcome to attend and observe. However, these briefings are not intended to be interactive with the audience, as this time is set aside for City Council to receive information, make inquiries, and provide Staff with policy direction.

Looking ahead to Monday night's Briefing and Post-City Council meeting briefing, the following schedule has been prepared:

Dinner 6:00 P.M.

Council Briefing (*The public is welcome to attend.*) 6:30 P.M.

CITY COUNCIL MEETING 7:00 P.M.

POST BRIEFING (*The public is welcome to attend.*)

PRESENTATIONS

1. Community Recycling Services – Attach1 – Attach2
2. Use of Public Facilities by Private Telecommunication Companies – Attach1 – Attach2

CITY COUNCIL REPORTS

1. Report from Mayor (5 minutes)
2. Reports from City Councillors (10 minutes)

EXECUTIVE SESSION

1. Obtain direction from City Council regarding a proposed Economic Development Agreement with LSG Innovations pursuant to W.M.C. 1-11-3(C)(4), W.M.C. 1-11-3(C)(7) and CRS 24-6-402(4)(e)

INFORMATION ONLY

1. Water Conservation Customer Survey – Attach1

Items may come up between now and Monday night. City Council will be apprised of any changes to the post-briefing schedule.

Respectfully submitted,

J. Brent McFall
City Manager



Staff Report

City Council Post Meeting
September 13, 2010



SUBJECT: Community Recycling Services

PREPARED BY: Rachel Harlow-Schalk, Environmental Administrative Services Officer

Recommended City Council Action:

Provide direction to Staff on the next steps toward a community-wide recycling program.

Summary Statement:

Staff is currently working with Skumatz Economic Research Associates (SERA) to evaluate the state of recycling and trash collection in Westminster. This research is intended to create recommendations to help City Council achieve their Strategic Plan objective of having a recycling program that is convenient for and regularly used by businesses and residents. The preliminary research has been shared with the Staff Green Team and the Environmental Advisory Board. It concludes there are no incentives provided for recycling in Westminster and the current curbside recycling options provided to residents are a disincentive to recycling. Staff believes revisions to the Solid Waste Collection Code would constitute a significant step toward accomplishing Council's recycling objective for the community.

In order to develop consensus for revisions to the Code, Staff would engage impacted stakeholders with specific recommendations. These stakeholders include homeowners associations, licensed trash collectors, business owners, the Environmental Advisory Board and other residents. Over the next 6 months, Staff would seek input on the following recommendation for revising the Solid Waste Collection Code:

- Setting a recycling diversion rate for all of Westminster,
- Requiring all licensed trash collectors to offer recycling to multifamily units and commercial customers and allowing these units to place recycling dumpsters in areas that may be unenclosed,
- Defining homeowner associations as residential customers for purposes of increasing availability of private recycling services, and
- Establishing a pay-as-you-throw trash collection system for all single family residences.

Expenditure Required: \$0

Source of Funds: N/A

Policy Issue:

Should the City engage stakeholders to establish a recycling goal, a pay-as-you-throw trash collection system for single-family residences (including those in homeowners associations) and require trash collectors to offer recycling to multifamily and commercial customers?

Alternatives:

Staff could engage stakeholders in measures to implement additional recycling strategies beyond those recommended in this Staff Report. This could yield up to a 20-25% increase in recycling rate whereas the measures recommended in this phase by Staff could yield a 17-18% rate. Expanding the list of measures to implement would be significantly more complex and would delay revisions needed in the Solid Waste Collection Code. Staff believes the phased approach to implementation would be most effective for engaging stakeholders.

Council could also decide that no changes are necessary at this time. Staff believes this alternative would not move Council toward accomplishment of their recycling objective.

Background Information:

Under City Council's Strategic Plan Goal of Beautiful and Environmentally Sensitive City, Council has identified as an objective having a convenient recycling program available to residents and businesses to help ensure a high level of recycling in the community. On December 21, 2009, City Council was provided a report from Staff informing them of the contract with Skumatz Economic Research Associates (SERA) to conduct a comprehensive review of the current trash and recycling collection system in Westminster.

Since December, SERA has completed the following tasks:

- Researched trash and recycling services provided within other cities and Westminster.
- Surveyed licensed trash collection companies on services currently provided.
- Observed and documented the amount of recyclables set-out by residents in single-family dwellings.
- Surveyed residents on trash and recycling services in Westminster via a statistically valid web-based system.
- Observed and documented the amount of recyclables set-out by businesses.
- Surveyed businesses on trash and recycling services in Westminster via a statistically valid web-based system.
- Identified 25 opportunities that the City could pursue to achieve an increase in recycling in Westminster.
- Provided an evaluation of nine opportunities selected by the Green Team and the Environmental Advisory Board for further evaluation of implementation in Westminster.

The specific results of each of these project steps are detailed in the attached report from SERA.

What follows are highlights of the work completed by SERA that have been used to develop Staff's recommended first phase toward achieving City Council's recycling objective.

Trash and Recycling in General:

- In general, residents are satisfied with their trash service, but not with the recycling services.
- There are twelve companies licensed to provide trash and recycling services in Westminster. Of these, four do not provide residential service and all have different costs for trash and recycling services available to customers. Additionally, at the time the survey was conducted, all were providing recycling services for varying materials. In June of this year, based on the recommendation of the Environmental Advisory Board, the City Manager designated a more comprehensive list of recyclables for which trash companies must provide recycling options. The recyclables included on this list mirror those that are collected at City sponsored drop-off locations, which helps reduce confusion among residents.
- Westminster has no recycling/trash diversion rate goal and provides no incentive for diversion of recyclables especially in the multi-family, commercial and construction/demolition sectors.
- In Westminster, residents recycle approximately 11% of their waste—7% at the curb and 4% at City drop-off locations. According to SERA and based on State of Colorado estimates, the general population of Colorado is diverting 19.5%.
- Residences signed-up to recycle with their trash collection company are recycling on a level similar to those in other Colorado communities. However, most recycling containers utilized by Westminster residents are too small to accommodate significant recycling (15 gallons, compared to 96 gallons for single stream in surrounding communities).
- Pay as you throw (PAYT) types of trash collection systems provide the highest economic incentive for recycling. SERA survey results show that there is strong support for this program by residents (about 70% somewhat or strongly support the option). Because there is no set system for PAYT, Staff has the opportunity to engage stakeholders to craft a program to meet the recycling needs of Westminster.
- All solid waste collection companies in Westminster currently charge extra to provide recycling. Citizens are offered a base service trash pickup rate and then an additional rate to recycle. From the residential survey, residents noted they are willing to pay on average \$7.87 more in their trash rate for recycling service. Also on average, the survey found households currently subscribing to recycling pay \$3.00 extra on top of an average \$16.50 monthly trash bill. Hauler interviews reported trash fees for residential customers of \$12 to \$21 per month, and recycling charges ranged from \$2.25 to \$5 per month. Some homeowner associations (HOAs) provide recycling at no additional fee that is, the cost to recycle is combined in the service price. SERA was not able to determine the number HOAs in this situation.
- Survey results showed that residents want to recycle when visiting public areas like parks, want more recycling education done by the City and support curbside recycling costs combined with trash fees.
- Survey results found that 2/3 to 3/4 of residents said they had high volumes of compostables (organics like yard waste and food scraps).
- There are no set days for trash service citywide and, on any given day, the types of containers used by residents for trash and recycling as well as the types of materials collected vary. With regard to licensing, each trash collector is required to pay \$250 for a license to operate in the City plus \$250 per trash truck and \$10 per recycling vehicle running within City limits. In 2010, the City collected \$3,000 in licensing fees from the 12 trash collectors and \$27,750 additional for 111 licensed trash vehicles and 28 licensed recycling vehicles. That is \$30,750 to operate in the City, removing materials weekly from approximately 40,000 households. No portion of monthly fees charged to residents is returned to the City.
- City drop-off locations are not convenient and cost the City thousands of dollars every year to maintain--\$20,000 in expected 2010 costs plus additional staff time cleaning up and handling calls. Residents receive the greatest convenience to recycle by doing so at the curb.

Evaluation of services provided by other cities compared to Westminster:

- SERA surveyed 18 communities in the Front Range to compare trash and recycling services provided. Of these communities, over half had recycling services that collected the conventional materials (glass, aluminum, plastics 1-7, paperboard, office paper, magazines, tin/steel, junk mail). The remaining cities reported that the materials collected were dependent upon the trash collection company.
- Services provided in cities vary based upon the community need. For more detailed results from this survey, please see Section 2 and Appendix 3 from the SERA Report.

Homeowner Associations (HOAs):

- Administratively, homeowners' associations that contract for trash collection on behalf of HOA homes are considered commercial customers and therefore, solid waste collections companies are not required to provide recycling to neighborhoods within HOAs. Staff completed additional research and estimates that only 18% of the residential population of the City lives outside of a homeowner association. That is, trash collection companies are not being required to provide recycling to 80% of the population. Thankfully, SERA's survey work found that most HOAs offer recycling; however, only 50% of the population within them actually recycles—many citizens in association areas pay for the service, but are not using it.
- To remove this administrative determination, the Solid Waste Collection Code needs to clarify those homes within homeowner associations are residential units for the purposes of trash collection and recycling requirements.

Businesses and Multi-family Developments:

- The survey showed businesses are generally satisfied with their trash service, but not with recycling.
- The survey found that many of the business and multifamily living locations do not have room for recycling collection.
- The City's Solid Waste Collection Code does not require trash collection companies to provide recycling to these customers.
- The survey found that only about 25% of businesses said they contracted for recycling service, another 20% said they had an "informal" program (usually employees collecting and bringing materials to a drop-off or home program), and half are not recycling. "Upscale" or office-type buildings were the most likely to recycle.
- The survey found that food waste and organics are generally not recycled: less than 10% of businesses reported generating a significant amount of food waste (half generate none) and 80% generate no yard waste. SERA noted that most communities that address food waste do so through programs targeted at specific sectors, not across all businesses.
- The survey found that materials most commonly recycled by businesses in Westminster are paper and cardboard.
- SERA suggested that recycling containers utilized in cooperation across multiple businesses may help address many of the business recycling hurdles, but businesses need help to address space and economic issues.

Based on their research, SERA identified 26 opportunities to improve recycling in Westminster (see Section 9 of the Report for a list of all 26 opportunities). The Environmental Advisory Board in consultation with the Green Team selected the following nine opportunities for further review of implementation impacts by SERA.

Staff Report – Community Recycling

September 13, 2010

Page 5

| Id | Program & Description | Est Tons & Pct Diverted | Generator Cost per Ton | Cost per generator ¹ | City Cost per Ton | City Annual Budget Impact |
|-------|---|--|------------------------|---|--------------------|--|
| Com5 | Bar and Restaurant Recycling-ABC Rule: All businesses with permits to consume alcoholic beverages on-site must recycle all beverage containers. If they do not recycle the containers they cannot renew their permits | 1,300; 1% of total generation | \$180-\$240 | \$150-\$250 per month per bar/restaurant | \$10-\$20 | \$14K-\$18K |
| Com6 | Embed recycling costs in the garbage fee for all commercial units. All commercial entities pay for recycling service. Most aggressive commercial program. | 5,100, 4% of total generation. | \$100-150 | \$20-\$40/month on average for all businesses in city | \$1-\$5 | \$26K-\$32K |
| Com7 | Require haulers to offer commercial recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. Least aggressive program. | 400; 1% of total generation | NA | Minimal | \$10-\$20 | \$4K-\$6K |
| Govt2 | Set a city diversion goal, passing a resolution or similar | NA | NA | None | NA | Minimal |
| Govt3 | Education: Expand current programs to inform residents of recycling options in City including drop-offs, bulky collection by haulers, web-based tools, and others. | 700; 1% of total generation. | Minimal | None | \$75-\$150 | \$60K-\$70K (-\$1.5/hh/year) |
| Govt5 | Recycling Drop-off Improvements: Full set of options described in report. Options includes site improvements, operational hours and staffing, closing some or all locations, and new site development | -2,600 to 2,600; 3% of total generation. | Free | None | Depends on options | (\$33K)- \$100K (includes one-time capital improvements) |
| MF3 | Require haulers to offer Multifamily recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. | 60; 0.1% of total generation. | \$275-\$325 | \$1-\$1.50/ HH/ month for participating MFUs | \$150-\$200 | \$9K-\$13K |
| Res1 | Haulers must include the costs of recycling in residential trash rates. All residents pay for recycling and are provided with recycling service. It is up to them whether or not they use the service. | 2,100; 2% of total generation. | \$550-\$600 | ~\$3/HH/Month for all HHS in Westminster | \$1-\$5 | \$4K-\$6K |
| Res2 | Pay As You Throw (PAYT): Haulers must charge for residential materials by a base unit (32 gallons) and embed costs of recycling in trash rates. Provides an economic incentive to recycle, source reduce, and compost. Most effective residential program available. | 6,300; 5% of total generation. | \$100-\$145 | Average \$1-\$2/HH/month for all HH; some pay more / some less based on trash size. | \$1-\$5 | \$4K-\$6K |

Note: Generator refers to the person/entity that generates the trash.

After reviewing the nine possible opportunities selected, the estimated diversion possibilities and costs to those impacted, Staff believes a good step to achieving Council’s recycling objective for the community is to focus on the following four key objectives that would be written into the Solid Waste Collection Code:

- o set a recycling diversion rate for all of Westminster,
- o require all licensed trash collectors offer recycling to multifamily units and commercial customers,
- o define homeowner associations as residential customers, and
- o establish a pay-as-you-throw trash collection system for all single family residences.

¹ Generator cost is the *average* cost for the impacted generator. Residential programs will impact households and business programs will impact businesses.

Key stakeholders that Staff proposes taking these recommendations to include those living in single-family and multifamily homes (including those in homeowner association neighborhoods), businesses and licensed trash collection companies. Staff anticipates this phase to take six months for comprehensive revisions and hopes to have final recommendations for City Council in January of 2011.

These changes represent the lowest cost options for residents and the City, and vastly increase the convenience of recycling at the curb as well as establish a system that incentivizes recycling. Once implemented, these changes are projected to achieve a 70% increase in recycling by residents increasing Westminster's recycling/diversion rate from 10-11% to 17-18%.

A pay-as-you-throw (PAYT) trash collection system is the most common way to include recycling costs in trash fees and incentivize recycling—the less trash you have, the less you pay for collection service. There are typically three PAYT systems:

Hybrid bag/tag – In this system, households only pay for waste beyond a specified “base” volume. They pay a fixed bill that entitles them to a first can or bag of garbage (size limits are usually around 30 gallons). Additional waste is charged on a per-bag or per-sticker system. This system is a “hybrid” between existing trash pickup programs and the new incentive-based approach, and minimizes billing and collection changes;

Variable can – In this system, households sign up for a specific number of containers (or size of container) for their usual garbage service and get a bill that is higher for bigger disposal volumes. This system is commonly used in conjunction with automated cart collection and variable can sizes are typically 32, 64, and 96 gallons. This is the most common program in the Front Range of Colorado and is used by Lafayette, Louisville, Boulder, Loveland, and Longmont.

Bag/sticker – In this system, households purchase special tags or stickers to put on their bags of garbage. The sticker price includes some or all of the cost of collection and disposal of the amount of waste in the bag. As with hybrid programs, some programs have a customer charge or base fee in addition to the sticker fees to help make sure they cover fixed costs. Bags are usually sold at convenience and grocery stores in addition to public outlets.

A common misperception is that PAYT leads to greater dumping in the community. In a supplemental memorandum, according to SERA there is no correlation of increased dumping due to the creation of a PAYT trash system. In general, from 2009 and 2010 national community survey data, SERA found that illegal dumping was more prevalent in communities before establishing PAYT instead of after.

Staff believes engagement of stakeholders in the establishment of a community-needs based trash collection system will make these changes more acceptable to the Westminster community. Moving forward with the recommended recycling changes would help Council accomplish their Strategic Plan community recycling objective. This topic has been placed on Monday evening's Study Session agenda so that Council can provide feedback and direction on Staff's recommendations.

Respectfully submitted,

J. Brent McFall
City Manager

Attachment

SERA Report Acronyms Listing

ABC: All Beverage Recycling - Requirement that all businesses separate, store and recycle all beverage containers generated at their establishments

Average Annual Tons of Residential Trash Generated per Year in Westminster:

3.1 tons per person per year = 1,047,490 tons per year from residential population of 109,000

C&D: Construction and Demolition

COM: Commercial customers

DNK: Do not know

EAB: City of Westminster Environmental Advisory Board

Govt: City of Westminster Government

Haulers: Licensed Trash Collectors in Westminster

HH(s): Household(s)

HHW: Household Hazardous Waste

HOA: Homeowners Association

MRF: Materials Recovery Facility

MTCE: Metric tons of carbon equivalents

MFU or MF: Multi-Family Units or Multi-Family - Households sharing at least one wall with another household

MSW: Municipal Solid Waste

NA: Not available

PAYT: Pay as You Throw – a program whereby trash costs per household are reduced the more they recycle. Often times, a trash bin size is set as a minimum and any trash in addition to that bin is charged at an agreed upon rate thereby incentivizing increased recycling to reduce charges should the trash be more than the minimum bin size.

Res: Residential customers

SERA: Skumatz Economic Research Associates

WM: Waste Management, Inc.

YW: Yard waste

SERA

Boulder Office: 762 Eldorado Drive, Superior, CO 80027
Voice: 303/494-1178 FAX: 303/494-1177
email: skumatz @ serainc.com
Website: www. serainc.com; payt.org

TRASH AND RECYCLING IN WESTMINSTER: STATUS QUO AND THE NEXT STEPS FOR MOVING FORWARD

REVISED Report

*Submitted to:
Environmental Services Office
City of Westminster*

*Prepared by:
Lisa A. Skumatz, Ph.D. and Juri Freeman
Skumatz Economic Research Associates, inc. (SERA)
762 Eldorado Drive, Superior, CO 80027
303/494-1178 www.serainc.com*

June, 2010

ORGANIZATION OF THE REPORT

| | |
|---|----|
| SECTION 1: EXECUTIVE SUMMARY..... | 1 |
| SECTION 2: CITY COMPARABLES..... | 6 |
| 2.1: City Comparable Highlights..... | 7 |
| Trash and Recycling Collection..... | 7 |
| Drop-offs, Yard Waste, and Ordinances..... | 8 |
| Special Services..... | 8 |
| SECTION 3: RESIDENTIAL SET-OUT SURVEY..... | 10 |
| 3.1: Survey Method..... | 10 |
| 3.2: Trash Results and Observations..... | 11 |
| Recyclables, Yard Waste, and Others in the Trash..... | 12 |
| 3.3: Recycling Results and Observations..... | 13 |
| Contamination in the Recycling Stream..... | 13 |
| 3.4: Recycling Diversion Rate..... | 14 |
| 3.5: Implications and Recommendations..... | 14 |
| Implications..... | 14 |
| SECTION 4: RESIDENTIAL WEB SURVEY..... | 17 |
| 4.1: Survey Collection..... | 17 |
| 4.2: Implications..... | 17 |
| Trash and Recycling Services..... | 17 |
| Costs..... | 18 |
| Satisfaction and Barriers..... | 18 |
| Comparisons of HOA and non-HOA areas..... | 19 |
| 4.3: Survey Results..... | 19 |
| Trash Services..... | 20 |
| Recycling Services..... | 20 |
| Organics..... | 23 |
| Home Owners Associations..... | 24 |
| Costs..... | 25 |
| Satisfaction, Barriers, and Programmatic Choices..... | 25 |
| Willingness to Pay..... | 28 |
| Demographics and Outreach..... | 29 |
| Comparison of HOAs and Non-HOA Areas..... | 31 |
| SECTION 5: COMMERCIAL SET-OUT SURVEY..... | 35 |
| Implications..... | 35 |
| Business types..... | 36 |
| Observed Trash Services..... | 36 |
| Recycling Service..... | 38 |
| Materials Generated and Recycled..... | 39 |
| SECTION 6: COMMERCIAL SURVEY RESULTS..... | 41 |
| 6.1: Survey Collection..... | 41 |
| 6.2: Implications..... | 41 |
| Trash and Recycling Services..... | 41 |
| Satisfaction and Barriers and Willingness-to-Pay..... | 42 |
| 6.3: Survey Results..... | 43 |
| SECTION 7: HAULER INTERVIEWS..... | 51 |
| 7.1: Trash and Recycling Rates..... | 51 |
| SECTION 8: GAP ANALYSIS..... | 53 |

| | |
|---|-----|
| SECTION 9: PROGRAM RECOMMENDATIONS | 59 |
| Commercial Programs | 64 |
| Bar and restaurant Recycling- ABC Rule (COM 5) | 65 |
| Government Programs..... | 69 |
| Residential Programs..... | 71 |
| SECTION 10: PAY-AS-YOU-THROW IMPLEMENTATION | 78 |
| Ordinance versus Contracting..... | 78 |
| Key Elements of an Ordinance: | 80 |
| Key Elements of a Contract: | 81 |
| Choosing a PAYT system: | 82 |
| Rate Setting | 85 |
| SECTION 11: DROP-OFF RECYCLING ANALYSIS | 86 |
| Impact Estimates..... | 86 |
| 11.1: Potential Changes to Drop-Offs | 88 |
| Status Quo | 88 |
| Existing facility improvements | 88 |
| Hours and operational changes | 89 |
| Development of central drop-off..... | 90 |
| Drop-off closures..... | 91 |
| Photos..... | 91 |
| SECTION 12: SUMMARY AND CONCLUSIONS..... | 92 |
| 12.1: Introduction and Goals | 92 |
| 12.2 Estimate of Residential Diversion..... | 92 |
| 12.4: Recommended Programs | 93 |
| 12.4 Recycling Drop-Offs | 96 |
| 12.4 "Gap" Analysis..... | 98 |
| 12.5: City Comparables..... | 98 |
| 12.6: Residential Set-Out Survey..... | 99 |
| 12.7: Residential Web Survey..... | 100 |
| Comparisons of HOA and non-HOA areas | 101 |
| 12.8: Commercial Set-Out Survey..... | 101 |
| 12.9: Commercial Web Survey..... | 102 |
| 12.10: Hauler Surveys..... | 103 |
| APPENDIX 1: COMMERCIAL RECYCLING STRATEGIES AND PRACTICES | 104 |
| APPENDIX 2: RECYCLING DROP-OFF PHOTOS | 108 |
| APPENDIX 3: CITY COMPRABLES TABLES | 112 |
| APPENDIX 4: RESIDENTIAL OPEN-ENDED RESPONSES | 120 |
| APPENDIX 5: COMMERCIAL OPEN-ENDED RESPONSES | 130 |

SECTION 1: EXECUTIVE SUMMARY

Purpose and Approach

The City of Westminster was interested in reviewing its trash and recycling system, benchmarking against surrounding communities, and identifying feasible programs for improving residential and commercial recycling in Westminster. The City's consultants (Skumatz Economic Research Associates / SERA) gathered data from a number of sources to identify performance, gaps, and feasible programs for the City, including:

- Statistically-valid web-based residential recycling survey;
- Statistically-valid survey of trash set-outs by residents in single-family dwellings;
- Survey / interviews with commercial areas on trash set outs and recycling opportunities for employees and customers;
- Web-based survey of businesses;
- Surveys of licensed trash collection companies of services currently provided; and
- Comparisons of programs and performance in 20 regional communities.

Current Performance, Comparisons, and Gaps

Two things are fairly universal about solid waste across the US:

- There are three main waste streams that represent the biggest potential for diversion: recycling "mix", organics (yard and food waste), and construction / demolition (C&D), and they usually represent roughly 75% of the materials generated; and
- In typical communities, the residential sector is usually responsible for about 40-60% of the disposed material, with commercial responsible for the remainder.

The project research indicates that the residential sector in Westminster recycles about 10-11% of its waste, with about 7% from curbside service, and 4% from the City's drop-off network. This compares to statewide estimates of 19.5% statewide, and rates in the 27-48% in some of the surrounding communities that have undertaken specific steps to increase recycling (Superior, Lafayette, and Louisville). Figures for generation or recycling in the commercial sector are unknown (in Westminster or around the State) because haulers handle this sector independently and do not report the data. The highlights of comparisons to program offerings and performance in 20 surrounding communities are shown in Table 1.1. Additional detail is included in later chapters.

Residential Programs in the Area

Table 1.1 shows that high-performing communities in the region (Boulder, Louisville, Longmont, and Lafayette) have established:

- Embedded recycling fees – recycling is not offered as an option, but instead, is provided to all and paid as part of the trash bill.
- PAYT – Pay as you throw, or higher fees for bigger trash containers, provides an incentive to recycle more and put less in the trash container.
- Organics – Organics (yard waste or yard waste and food waste) collection is included or planned for most of these communities (included in Boulder, Louisville, planned for Lafayette and being considered in Longmont)

The table also shows that:

- About half the communities have standing yard waste drop-offs, beyond holiday trees (Westminster does not have a standing program),

- Ten have city-wide “clean-ups” at no fee (Westminster dropped; so has Boulder dropped it due to the cost)
- About half have some sort of electronics waste program (Westminster does not sponsor any events)¹

Table 1.1: Summary of City Comparables

| City | Diversion rate | Trash Collection | Recycling Collection | Organics (Yard, Food Waste) | Large Item Pick Up |
|-----------------|--------------------------------------|---------------------------------------|---|--|---|
| Westminster | ~7% for Res at curb, ~10-11% Total | Mult. Pvt | All pvt haulers | No | Haulers |
| Arvada | DNK | Mult. Pvt | Some pvt haulers | Drop-off | City |
| Aurora | DNK | Mult. Pvt | Some pvt haulers | Drop-off | Haulers |
| Boulder | 31% all sectors, >50% res. | Mult. Pvt, PAYT | All pvt haulers, embedded recy fee, organics program | Curbside, including food waste; extra fee for larger volumes plus drop-off | Haulers |
| Brighton | DNK | Mult. Pvt | Some pvt haulers | No | City, also clean-up |
| Broomfield | 23% in Broadlands HOA; elsewhere DNK | Mult. Pvt | Some pvt haulers | Drop-off | City, also clean-up |
| Centennial | DNK | Mult. Pvt | Some pvt haulers | No | Not sure |
| Commerce City | DNK | Muni mostly | Contracted | | Haulers (free) |
| Denver | 13% (2008) | Muni | Muni, embedded recy fee | Pilot curbside | City |
| Edgewater | DNK | Muni, | NA | Drop-off | City |
| Englewood | DNK | Mult. Pvt | Some pvt haulers | | Haulers |
| Federal Heights | DNK | Mult. Pvt | Some pvt haulers | | No |
| Golden | DNK | New 1-hauler contract (previously) | New contract | Yes in new system | City and hauler; also drop-off clean-up |
| Lakewood | DNK | Mult. Pvt | Some pvt haulers | | No |
| Lafayette | 30% | Contract, PAYT | Embedded recy fee | Planning | Unknown |
| Littleton | DNK | Mult. Pvt. | Some pvt haulers | Yes | City, also clean-ups by appointment |
| Longmont | 23% | Muni, PAYT | Muni, embedded recy fee | Planning curbside; have drop-off | City |
| Louisville | 48% 9/09 Res. only | Contract, PAYT | Contracted, embedded recy fee; includes organics | Yes, fully embedded fee; have drop-off also | Haulers, also clean-up (4/yr) |
| Superior | 27% (res) | 2 contracts (HOA & town) ² | Both contracts have embedded recycling; HOA uses RecycleBank™ incentive | Drop-off only | Hauler; plus annual town clean-up |
| Thornton | 11% 2008 | Muni mostly, PAYT | Muni, embedded fee | | City, plus clean-up |
| Wheat Ridge | DNK | Mult. Pvt | Some pvt haulers | Drop-off | City, plus clean-up |

¹ Electronics is not likely a large concern. 1) it is not a large part of the waste stream; 2) there are private recycling firms that provide these services; 3) several “big box” stores offer free or discounted take-backs for these products.

² Limited PAYT in area under Town contract, but not effective (rate incentives small, minimum container is large).

Commercial and C&D: Although the interviews did not go into detail on the commercial³ programs, there are few initiatives in the commercial sector in any of the regional communities interviewed. Boulder offers some limited incentives (three free months for new sign-ups), but otherwise the only initiatives include requirements for equal space for recycling and trash dumpsters in new buildings or significant remodels to reduce the “space” barrier to recycling in the commercial sector in several of the communities. There is virtually no activity in the construction and demolition sector in the area.⁴

Opportunities, Barriers, Gaps

Residential: We conducted surveys, field-inspections and weighing of set-outs (trash and recycling), and hauler interviews. We found:

- **Low residential recycling:** current diversion is about 7%; given the extra fee required for recycling⁵, only 15% subscribe to recycling. Those that are subscribed are recycling on a level similar to those in high-performing communities. In addition, the recycling containers are too small to accommodate significant recycling (15 gallons, compared to 96 gallons for single stream in many surrounding communities). There is significant potential both in participation (number of households) and in material that can be diverted from each home.
- **HOA differences:** HOAs were more likely to have curbside recycling at no additional fee (embedded for 50% of HOA respondents, and 10% of non-HOA respondents). As a consequence, HOA respondents reported higher satisfaction levels.
- **Support for more recycling:** Residents want more recycling in public areas / parks and businesses, want more recycling education and support curbside recycling embedded in trash fees. Although some respondents were not willing to pay extra for additional recycling opportunities, the average amount households were willing to pay was an additional \$7.87 per month for expanded service.
- **No current PAYT, but strong interest:** PAYT provides an economic incentive for recycling; that is not in place in Westminster. There is strong support for this program (about 70% somewhat or strongly support the option).
- **Interest in organics:** The survey made it clear there is interest in yard waste collection; 2/3 to ¾ of residents said they had high volumes of compostables, and
- **Satisfaction:** Residents are generally satisfied with their trash service, but not with recycling.

Commercial: We conducted on-site interviews with a sample of businesses and the haulers, and conducted a web survey as well.

- **Low recycling participation and volumes:** Only about 25% of businesses said they contracted for recycling service, another 20% said they had an “informal” program (usually employees collecting and bringing materials to a drop-off or home program), and half are not undertaking any recycling behaviors at all. “Upscale” or office-type buildings were the most likely to recycle.
- **Food waste and organics not a priority sector-wide:** Less than 10% of businesses reported generating a significant amount of food waste (half generate none) and 80%

³ Or programs for large multifamily buildings

⁴ Except some education / demonstration materials, and a fairly active “Roofs to Roads” asphalt shingle recycling program in Boulder.

⁵ On average, the survey found households subscribing to recycling pay \$3.00 extra in addition to an average \$16.50 trash bill. Some HOAs provide recycling at no additional fee, but the prevalence is unknown. Hauler interviews reported trash fees of \$12-21 per month, and recycling charges ranged from \$2.25 - \$5 per month.

generate no yard waste. (However, note that most communities address food waste through programs targeted at specific sectors, not across all businesses.)

- **Priority materials are paper and cardboard**, based on survey responses.
- **Shared services:** Offering recycling containers across multiple businesses may make sense, addressing the space and the economics issues.
- **Satisfaction:** Businesses are generally satisfied with their trash service, but not with recycling

Infrastructure and Context: Westminster is located in a fairly opportune area. It has:

- Nearby recycling infrastructure (recycling centers)
- Haulers with expertise and capabilities for additional diversion activities.
- Tonnage reporting by haulers
- Organics / composting sites in the region
- Reasonably green ethos from residents, businesses, staff, and Council.

However, it does not have:

- Recycling / diversion goals
- Incentives for diversion
- Recycling-related ordinances
- Much in the way of activity or incentives for recycling in the multi-family, commercial, or construction / demolition sectors.

Recommended Programs

The consultants considered and assessed more than 25 programs that could capitalize on the opportunities present in Westminster. We developed recommendations including about 12 programs, designed to divert significant material, provide opportunities in multiple sectors (residential, commercial), address key material streams (recycling, organics, C&D), diversify intervention approaches (ordinances, incentives, and programs), and be as cost-effective as possible. Discussions with the Environmental Advisory Board led to 9 programs being forwarded as recommended in this report.⁶ Chapter 12 includes a detailed description of the programs, including detail on costs, greenhouse gas impacts, and other information; Table 1.2 contains a summary.

- **City programs and policies** include: setting a recycling / diversion goal; and improving the recycling drop-offs;
- **Commercial programs** include: requiring recycling of all beverage containers from bars and restaurants; requiring recycling to be offered, and embedding the recycling costs in the garbage fees.
- **Residential programs** include: PAYT / incentive-based trash rates with the cost of recycling embedded in the garbage fees; and requiring haulers to offer multifamily recycling.

If all of the programs were implemented, it is estimated that they would increase the total diversion rate by around 10-12% (the total diversion rate is the amount of the overall waste stream (includes single-family, multi-family, and commercial generators) that is diverted from disposal in the landfill). The residential diversion rate is estimated to increase by around 10-14%, bringing the total residential diversion to between 20-25%, approximately doubling the current residential diversion rate.

⁶ The programs that were not endorsed by the EAB at this stage included: space for recycling ordinance, yard trimmings / food waste options, and construction / demolition (C&D) opportunities. These should be considered for the future, as they represent significant shares of the disposal stream.

Table 1.2: Detailed Strategy Impacts (Com=Commercial, Govt=Government, Res=Single-family Residential, MF=Multi-family Residential)

| Id | Program & Description | Est Tons & Pct Diverted | Generator Cost per Ton | Cost per generator ⁷ | City Cost per Ton | City Annual Budget Impact |
|-------|---|-----------------------------------|------------------------|---|--------------------|---|
| Com5 | Bar and Restaurant Recycling-ABC Rule: All businesses with permits to consume alcoholic beverages on-site must recycle all beverage containers. If they do not recycle the containers they cannot renew their permits | 1,300; 1% of total generation | \$180-\$240 | \$150-\$250 per month per bar/restaurant | \$10-\$20 | \$14K-\$18K |
| Com6 | Embed recycling costs in the garbage fee for all commercial units. All commercial entities pay for recycling service. Most aggressive commercial program. | 5,100; 4% of total gen. | \$100-150 | \$20-\$40/month on average for all businesses in city | \$1-\$5 | \$26K-\$32K |
| Com7 | Require haulers to offer commercial recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. Least aggressive program. | 400; 1% of total gen | NA | Minimal | \$10-\$20 | \$4K-\$6K |
| Govt2 | Set a city diversion goal, passing a resolution or similar | NA | NA | None | NA | Minimal |
| Govt3 | Education: Expand current programs to inform residents of recycling options in City including drop-offs, bulky collection by haulers, web-based tools, and others. | 700; 1% of total gen. | Minimal | None | \$75-\$150 | \$60K-\$70K (-\$1.5/h h/year) |
| Govt5 | Recycling Drop-off Improvements: Full set of options described in report. Options includes site improvements, operational hours and staffing, closing some or all locations, and new site development | -2,600 to 2,600; 3% of total gen. | Free | None | Depends on options | (\$33K)-\$100K (includes one-time capital improvements) |
| MF3 | Require haulers to offer Multifamily recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. | 60; 0.1% of total gen. | \$275-\$325 | \$1-\$1.50/ HH/ month for participating MFUs | \$150-\$200 | \$9K-\$13K |
| Res1 | Haulers must include the costs of recycling in residential trash rates. All residents pay for recycling and are provided with recycling service. It is up to them whether or not they use the service. | 2,100; 2% of total gen. | \$550-\$600 | ~\$3/HH/Month for all HHs in Westminster | \$1-\$5 | \$4K-\$6K |
| Res2 | Pay As You Throw (PAYT): Haulers must charge for residential materials by a base unit (32 gallons) and embed costs of recycling in trash rates. Provides an economic incentive to recycle, source reduce, and compost. Most effective residential program available. | 6,300; 5% of total gen. | \$100-\$145 | Average \$1-\$2/HH/month for all HH; some pay more / some less based on trash size. | \$1-\$5 | \$4K-\$6K |

⁷ Generator cost is the *average* cost for the impacted generator. Residential programs will impact households and business programs will impact businesses.

SECTION 2: CITY COMPARABLES

Detailed interviews were completed with Westminster staff and the municipal staff of 19 surrounding cities and communities. The interviews were conducted to allow Westminster staff and decision makers to see how the City compares to surrounding areas in waste collection systems, recycling collection, drop-offs, and specialty programs such as Christmas tree drop-offs, electronics waste programs, and others. Table 2.1 displays a summary of the results uncovered throughout the interview process. The entire set of results of the city comparables research can be seen in the appendix 1 to this report.

Table 2.1: Summary of City Comparables

| City | Population | Diversion rate | Trash Collection | Trash Costs | Recycling Collection | Large Item Pick Up |
|-----------------|------------|-----------------------------------|------------------|---|----------------------|--------------------|
| Westminster | 106,300 | ~7% for Res | Mult. Pvt | \$8-\$25 | All pvt haulers | Haulers |
| Arvada | 107,361 | DNK | Mult. Pvt | DNK | Some pvt haulers | City |
| Aurora | 319,057 | DNK | Mult. Pvt | DNK | Some pvt haulers | Haulers |
| Boulder | 94,171 | 31%, 2009 est, 40% 2006, 34% 2005 | Mult. Pvt | \$16 -\$23/Mo | All pvt haulers | Haulers |
| Brighton | 31,380 | DNK | Mult. Pvt | DNK | Some pvt haulers | City |
| Broomfield | 54,858 | 23% in Broadlands HOA | Mult. Pvt | Hauler dependent | Some pvt haulers | City |
| Centennial | 99,680 | DNK | Mult. Pvt | | Some pvt haulers | Not sure |
| Commerce City | 42,473 | DNK | Muni mostly | \$13/Mo for trash and recycling | Contracted | Haulers |
| Denver | 598,707 | 13% 2008 | Muni, | \$10/HH/Mo | Muni | City |
| Edgewater | 5136 | DNK | Muni, | \$12.50/Mo | NA | City |
| Englewood | 32,669 | DNK | Mult. Pvt | DNK | Some pvt haulers | Haulers |
| Federal Heights | 11,732 | DNK | Mult. Pvt | DNK | Some pvt haulers | No |
| Golden | 17,321 | DNK | Mult. Pvt | \$15/Mo for trash and recycling to \$28.25/Mo, costs are a year old; averages to \$20-\$25/Mo | All pvt haulers | City and hauler |
| Lakewood | 140,989 | DNK | Mult. Pvt | \$30/Mo | Some pvt haulers | No |
| Littleton | 40,777 | 70% city blds, DNK for res | Mult. Pvt | \$26.02/Mo | Some pvt haulers | City |
| Longmont | 85,928 | 23% since SS, 18% 2008 | Muni | \$14.28/1 96gal/Wk, \$11.27/1 48gal /Wk, extra 96gal \$10.14/Mo, extra 48gal \$6.60/Mo | Muni | City |
| Louisville | 19,133 | 48% 9/09 | Contract | Whole range of prices for 96gal, 64gal, 32gal trash and compost from \$11.20-\$29.40/Mo; have sheet of tonnages | Contracted | Haulers |

| City | Population | Diversion rate | Trash Collection | Trash Costs | Recycling Collection | Large Item Pick Up |
|-------------|------------|----------------|------------------|---|----------------------|--------------------|
| Thornton | 113,429 | 11% 2008 | Muni mostly | Weekly trash & EOW recycle, 1 container \$13.50/Mo, 2 \$16/Mo, 3 \$25.20/Mo, 4 \$34.40/Mo | Muni | City |
| Wheat Ridge | 30,894 | DNK | Mult. Pvt | \$13.00/Mo | Some pvt haulers | City |

2.1: City Comparable Highlights

Trash and Recycling Collection

- **Trash collection:** Residential trash is collected by multiple haulers via open market everywhere except municipal collection in four cities (Denver, Longmont, Thornton, and Edgewater) and contract in Louisville.
- **Recycling collection:** Curbside recycling collection is available in all cities except Edgewater. Service is provided by some or all of the private haulers serving the City in all locations except those with municipal collection (Denver, Longmont, Thornton) where the city provides collection and Louisville where there is a contract for collection.
- **How trash is paid:** In almost all, trash is paid through individual payments to private haulers. The City of Denver charges for residential trash collection through the City's property taxes. The four cities that charge for trash collection through the utility bills are Edgewater, Longmont, Louisville, and Thornton. These four cities, and Denver, are also the same cities that either have municipal collection or contracts for collection.
- **Why haulers provide recycling:** The cities were asked to report on why the haulers in their community (if multiple private haulers provide collection) decided to provide recycling service. All of the cities reported that it was a business decision/ to provide a value added service for residents with the exception of Boulder. The City of Boulder has a mandate that all haulers must provide recycling service embedded in the trash rates.
- **Recycling materials:** About half of the Cities (Aurora, Boulder, Commerce City, Longmont, Louisville, Thornton, Wheatridge) reported that they collect the following "conventional" materials:
 - Glass
 - Aluminum
 - OCC
 - Plastic 1-7
 - Paperboard
 - Office paper
 - Magazines
 - Tin/steel
 - Junk mail

The remaining cities reported that the materials collected were dependent upon the hauler.

- **Recycling single stream** Just under half of the cities reported that recycling was collected in a single stream⁸ (Aurora, Boulder, Commerce City, Golden, Lakewood for WM, Longmont, Louisville, Thornton, Wheatridge)

Drop-offs, Yard Waste, and Ordinances

- **YW / Organics collection:** Only three cities reported having yard waste/organics collection (Boulder, Littleton, and Louisville). The City of Denver has an organics pilot program in place and Golden and Longmont are planning to implement organics/yard waste programs in the future.
- **Recycling drop-off:** All cities, with the exception of Federal Heights, Littleton, and Louisville, reported that they have some sort of recycling drop-offs available for residents. Most of the cities reported that they have 1-2 drop-offs (9 cities). The cities that reported more than one or two drop-offs were Brighton (5), Commerce City (15), Thornton (4), and Wheatridge (8). The most typical way for a recycling drop-off to be operated was by a private company or non-profit (13 cities). The private drop-offs may only be in grocery store, or other similar type, parking lots and may not be as large as the city sponsored drop-off areas in Westminster. In seven of the cities the drop-offs are operated by the municipality and in 1 city it is operated by county staff. Only two of the cities reported that the drop-offs were staffed (Aurora, Longmont). All of the drop-offs were reported to be open 24/7 or from dawn to dusk except the two cities with staffed sites. Single stream recyclables were accepted at 5 of the drop-offs and commingled glass at 8. Contamination issues were reported by 7 of the 19 cities interviewed. Some of the techniques these cities used to deal with contamination included installing cameras, increasing signage, or having city staff assist in periodic clean-ups. Two cities reported they might discontinue their drop-off programs.
- **How are HOAs handled:** HOAs are not addressed / not monitored and/or handled by private individual HOA contracts in 9 of the cities interviewed (Arvada, Aurora, Broomfield, Centennial, Federal Heights, Lakewood, Littleton, Thornton; Golden). In two of the cities when the current trash contracts come up for renewal the HOAs must incorporate recycling (Boulder, Commerce City). In Longmont and Louisville which have municipal collection and a contract, respectively, an opt-out is possible for HOAs if they have equivalent service for their members.
- **Ordinances / regulations:** The majority of cities interviewed reported that they did not have an ordinance pertaining to trash or recycling services. Golden, Louisville, Longmont, Boulder and Englewood reported that they do have ordinances pertaining to trash and/or recycling. In Golden the haulers must provide recycling if asked. In Boulder and Louisville there are PAYT ordinances where haulers must provide recycling embedded in the trash fees and charge variable rates for trash collection. These two cities also require that organics collection at the curb is provided by the haulers. In Longmont, all single-family households must use city services with mandatory recycling. The City of Englewood mandates that all households must have trash service.

Special Services

- **Large item service available:** Large item service is available in all 19 cities with the exception of Centennial, Englewood, Federal Heights, and Lakewood). Whether or not

⁸ Single-stream recycling is all recyclables collected together in one-bin or cart as opposed to dual stream where recyclables are separated into two bins.

the residents must schedule ahead of time or they can just call and order collection is split about evenly. Large item service is provided by the municipality in 10 cities and provided by the haulers in seven. Payments follow provider in all except Commerce City where the hauler (Waste Management) is paid by City. If service is not provided on an “on call” basis, it is provided 1/yr (7 cities); 4/yr (1 city), and once every 5 weeks (1 city).

- **Large Item Payments:** Resident charges were not listed except in Longmont where the cost is \$33/collection. Most of the cities reported that the charges were up to the hauler. For the cities that provide large item service the costs of the program ranged from \$30-35K (Golden, Littleton) to \$250K in Thornton or from \$.85/resident/year to \$2.20/resident/year.
- **Tree Limbs:** About half of the cities reported that they do have tree limb programs (Arvada, Aurora, Boulder, Broomfield, Edgewater, Longmont, Louisville, Wheatridge).
- **Tree Limb Service:** Tree limb drop-off programs were available in seven of the cities (Arvada, Boulder, Broomfield, Golden, Lakewood, Longmont, and Thornton). One city, Edgewater, reported they have year round collection at the curb. Longmont has both an annual city wide collection program and collection by appointment. Louisville and Boulder allow residents to include smaller tree limbs in the curbside organics program. In seven of the cities, the tree limb service is provided by the city (Arvada, Boulder, Broomfield, Edgewater, Longmont, Louisville, Thornton). The haulers provide the service in Aurora and maybe in Centennial (city staff was not sure). The cost for city provided service varies from \$10K-\$160K.
- **Christmas Tree Program:** Yes for all cities except Centennial, Federal Heights, and Lakewood.
- **Electronics Waste Programs:** About half of the cities reported that they do have an electronics waste program (Aurora, Brighton, Broomfield, Edgewater, Englewood, Golden, Littleton, Longmont, Louisville, Thornton). Most hold events 1-2/yr (7 cities); a few reported that they accept e-waste for a fee at their drop-off facilities (3 cities); and several reported that they collect e-waste in conjunction with HHW days.

SECTION 3: RESIDENTIAL SET-OUT SURVEY

3.1: Survey Method

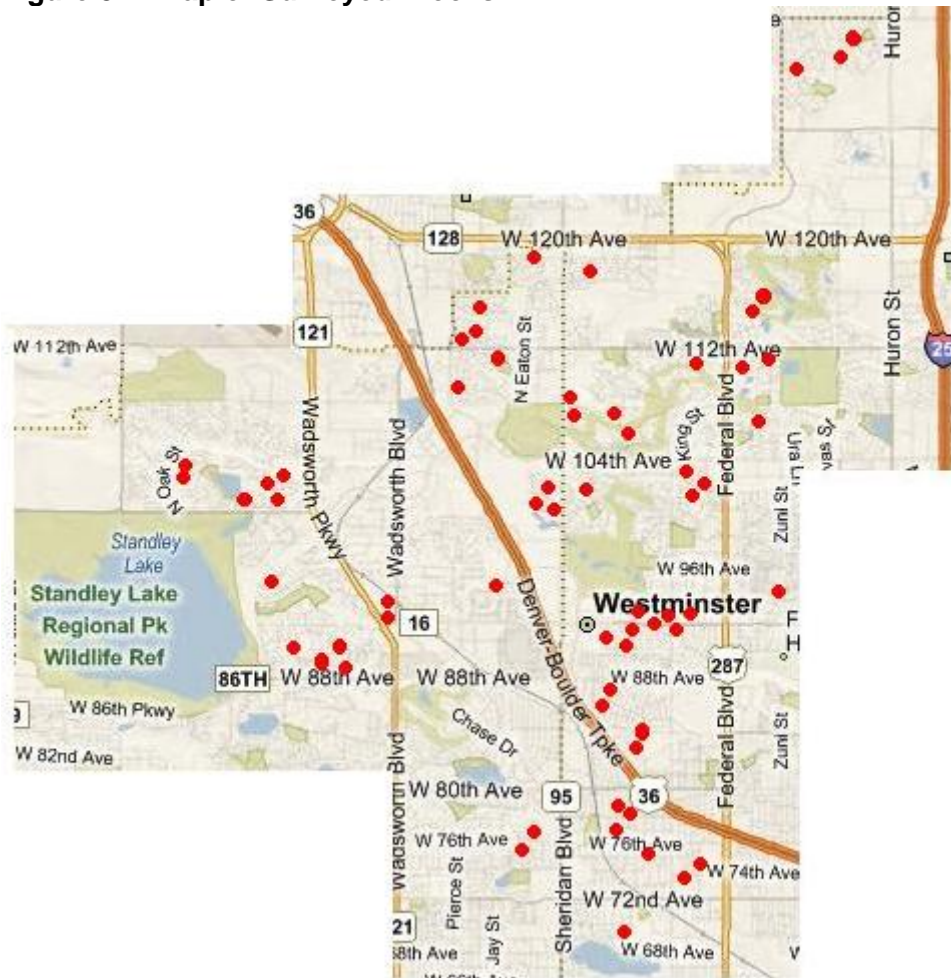
During the first two weeks of November, 2009, SERA Inc. conducted a set-out survey to collect trash, recycling, diversion, contamination, and observational data of Westminster residential material set-outs. The survey collected data from 365 houses for two consecutive weeks. It was necessary to conduct two weeks of surveying to ensure that any recycling activity would be recorded. Recycling collection in Westminster typically occurs on an every-other-week basis; however, not every hauler collects on the same week. Thus, the researchers needed to survey the same addresses for two consecutive weeks to record any possible recycling.

To collect the data, a random selection of blocks throughout the City was generated and ten homes on each of the randomly selected blocks were surveyed. For each surveyed house:

- Both the trash and (if present) recycling containers were weighed, and observational data was collected to determine the type of container and the contents of the trash and recycling.
- A cursory examination was conducted to determine whether there was a significant amount of recycling, yard waste, or other materials such as household hazardous wastes in the trash, and also to see if there were contaminants in the recycling bins.

The figure 3.1 shows a map of the city and denotes the blocks on which trash was sorted.

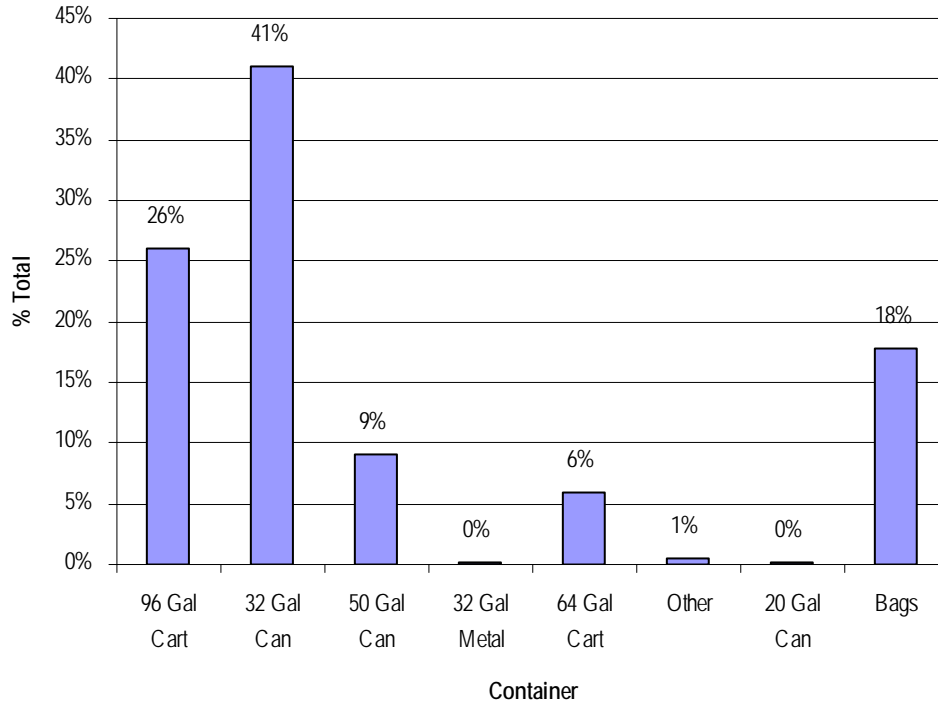
Figure 3.1: Map of Surveyed Blocks



3.2: Trash Results and Observations

About two-fifths of the total trash weighed was in 32-gallon plastic type containers. In general, these are containers supplied by the customer, not the trash hauler. Just over one-quarter of the material surveyed was in 96-gallon roll-carts. In many cases, these carts are purchased (or provided) from the waste hauler. Other popular trash containers included 45-60 gallon plastic containers and 64-gallon roll carts. In addition to containerized trash, about 20% of the trash weighed was in bags and not in containers at the curb. Figure 1.2 shows the percent of trash observed in the different container options.

Figure 3.2: Trash Container Types



The average weight for the surveyed household trash set outs was 52.5 pounds and the median observed weight was 42.75 pounds. The maximum observed weight was 253 pounds and the minimum was zero pounds.

Table 3.1: Trash Weights

| | Weight (in lbs) |
|---------|-----------------|
| Average | 52.5 |
| Median | 42.75 |
| Maximum | 253 |
| Minimum | 0 |

Overall, this is an average per capita trash disposal rate of 2.9lbs/person/day for single family residents in Westminster.

Recyclables, Yard Waste, and Others in the Trash

More than 50% of the households had recyclables in their trash. Recycling in the trash was a qualitative measurement; in order for a household to qualify as having recyclables in their trash they needed to have a significant amount of recyclables observable in the can. If there were only a few pieces of paper or one or two cans or bottles in the trash, this did not qualify as “recyclables in the trash”. The most common recyclables observed in the trash were cardboard, plastics, and aluminum.

Only 11% of the surveyed households had yard waste in their trash. This is a relatively low percent. However, since the survey was conducted in the late fall/early winter, it is expected that

at other times of the year there would be more yard waste in the trash. The yard waste observed ranged from brush, to weeds and limbs and in some cases, dirt and soil.

Another 4% of households had “other” notable items in their trash. Some of the other items observed include: electronics, drywall, shingles, oil, household hazardous waste, and metal. The table below displays the materials seen in the trash.

Table 3.2: Materials in Residential Trash Cans

| Material | Percentage of Households |
|------------|--------------------------|
| Recycling | 53% |
| Yard waste | 11% |
| “Others” | 4% |

3.3: Recycling Results and Observations

The majority of surveyed households do not subscribe to curbside recycling services. Only 14.7% of the households were recycling at the curb. The vast majority of the recycling at the curb was placed in open-top 15 gallon bins. A very small portion of the households used carts or larger containers for recycling while some others used laundry baskets, milk carts, or other make-shift containers (less than 5%). None of the households surveyed were observed to have weekly recycling, all of the households recycled on an every-other-week basis.

On average, the weight of recycling set out by all surveyed households over a, including those that did not set out any recycling, was 7.6 lbs, with a median value of 0 lbs. The maximum weight of recycling observed was 110 lbs and the minimum was zero lbs. If the households not setting out any recycling are not used in the calculation, the average recycling set out was much higher at 31.3 lbs with a median value of 29.3 lbs. The table below shows the recycling set out weights for the surveyed Westminster households.

Table 3.3: Bi-Monthly Recycling Set Out Weights

| | All surveyed HHs | Only HHs setting out recycling (15% participation rate) |
|--------------------|------------------|--|
| Average Weight Lbs | 7.6 lbs | 31.3 lbs |
| Median Weight Lbs | 0 lbs | 29.3 lbs |
| Minimum Weight Lbs | 0 lbs | 2.3 lbs |
| Maximum Weight Lbs | 110 lbs | 110 lbs |

Contamination in the Recycling Stream

The recycling containers were examined to determine what contaminants existed in the recycling stream. The most common contaminants were plastic bags and clamshell-type containers (plastic vegetable containers⁹). A repeated problem was that residents were putting all of their recyclables in a plastic bag and putting the bag in the recycling bin. There were also a lot of non-recyclable freezer wrapped paperboard, other non-recyclable plastic in the recycling

⁹ Clamshells type containers were considered contaminants because although some haulers might accept these materials, others do not.

bins, and in a few cases there was trash in the recycling containers. Of those households recycling, 52% had some type of contamination in their recycling stream.

3.4: Recycling Diversion Rate

Only 15% of the households in Westminster set out recycling. To determine the residential recycling diversion rate, the weight of observed recycling was divided by the summation of recycling and trash ($\text{Recycling lbs} / \sum (\text{recycling lbs, trash lbs})$) for two consecutive weeks. The average recycling diversion rate for all households, including those with zero diversion (trash with no recycling set outs) was 7%. The median recycling rate was 0%. If households not setting out any recycling are subtracted from the equation, the average recycling diversion rate for *only* the households that set out recycling was 29%. The set outs for trash and recycling, along with the calculated household diversion rate across all households are displayed in the table below.

Table 3.4: Trash, Recycling, and Diversion

| | | Pounds |
|------------------------------|---------|--------|
| Trash (Weekly) | Average | 52.5 |
| | Median | 42.8 |
| Recycling (Every-other week) | Average | 7.6 |
| | Median | 0.0 |
| Overall Diversion Rate | Average | 7% |
| | Median | 0% |

Table 3.5: Total Per Capita Generation and Recycling

| | Lbs/Person/Day |
|----------------------|----------------|
| Trash Generation | 2.9 |
| Recycling Generation | 0.2 |
| Overall Generation | 3.1 |

3.5: Implications and Recommendations

Implications

By examining the trash and recycling set-out from nearly 400 Westminster households and analyzing the collected data, the following implications can be drawn:

Trash

- There is little to no restrictions on the amount of trash households in Westminster can set-out per week and little uniformity in collection schedules, container types, or routes. It was observed that in many neighborhoods there were multiple haulers serving the same street on the same day. In addition to using 32-gallon trash cans, households also use 96-gallon carts and everything in between. About one-fifth of all trash disposed at the curb was in non-containerized bags. For many streets studied, the mis-matched containers, unlimited bags and containers, and multiple haulers on different days means that on two or three days of the week there is highly visible trash on the streets of Westminster. In the HOA areas with same day collection in carts, the difference in aesthetics was noticeable.

- There is a significant amount of recyclables being disposed of in the trash containers. Of the households surveyed, over 50% had large amounts of recyclables readily apparent in their trash. There is a large potential for households in Westminster to reduce trash disposal and increase recycling, either at the curb or drop-off.
- Only about 11% of households were disposing of yard waste in their trash. However, the set-out survey was conducted in early winter and this percentage would be expected to vary greatly depending on the season with the largest amounts of yard waste in the spring and the fall.
- The HHW program in Westminster appears to be working well. There was very little HHWs observed in the residential disposal stream (less than 2% of HHs)

Recycling

- Less than 2 out of every 10 households in the City are participating in a curbside recycling program. With nearly unlimited trash disposal for a flat fee and recycling service not “embedded” in trash rate, there is little economic incentive for residents to reduce their trash and use recycling bins.
- The 15% of residents that are recycling are either in HOAs with recycling included in their trash bills or most likely are the “avid” recyclers in the community. The diversion rate for households that are participating is nearly 30% which is on par with some of the better performing cities in Colorado.
- The 15% of residents that are recycling are quite knowledgeable about which materials they can and cannot recycle. However, nearly half of the households were putting some type of contaminant in their recycling.
- Households that are recycling are using open-topped 15 gallon bins. Studies have shown that these bins are not the most effective for high diversion due to: 1) *Running out of room*- once resident have filled their recycle bins they tend to throw the extra materials in the trash, this is especially true with every-other-week collection 2) *Wind and weather*- High winds can blow materials out of the bins and rain or snow can reduce the value of fiber commodities in the recycling stream
- The most common individual contaminant observed was vegetable containers, indicating that increased education about this material could be useful. In addition to vegetable containers, education could be used to raise awareness about plastic bags by themselves in the recycling and keeping all of the recycling out of bags before recyclables are placed in the cart.
- Some of the barriers to residential recycling observed during the survey include:
 - For most households (with the exception of some HOA areas) recycling service costs extra (uncovered through interviews with residents during the survey)
 - There is little to no economic incentive to recycle with nearly unlimited trash disposal for a flat fee
 - Every-other-week collection combined with small 15-gallon open topped bins may not be a high enough level of service to maximize recycling

Diversion Rate

- The overall recycling diversion rate for the surveyed households was 7% but for participating household it was 29%. There is significant room for Westminster to improve both participation (only 14%) and the recycling diversion rate (7%). Other high performing cities in Colorado have single family residential diversion ranging from around 22% (Longmont) to over 50% (Loveland).

SECTION 4: RESIDENTIAL WEB SURVEY

4.1: Survey Collection

As a means of assessing the trash and recycling behaviors, program preferences, and willingness to pay among Westminster residents, SERA Inc. administered a statistically valid web-survey in late December 2009. The survey was collected using a web-based survey instrument with an option for those without a computer to complete the survey over the phone. Less than 2% of the surveys were conducted over the phone.

Postcards advertising the survey web site were sent to a randomly selected sample of 4,000 households in Westminster. A total of 332 residential surveys were collected as of January 7th 2010. The table below displays the number of postcards sent out, the response rate, and the confidence interval.

Table 4.1: Postcard Responses

| Postcards mailed | Completed Surveys | Completion Rate | Confidence Interval |
|------------------|-------------------|-----------------|---------------------|
| 4000 | 332 | 8.1% | 95% +/- 5.5% |

4.2: Implications

The following set of implications and results was developed through a detailed analysis of the collected data.

Trash and Recycling Services

Curbside recycling costs extra, potentially limiting residential participation- Only about 28% of respondents reported that they have recycling included in their trash rates for *no extra charge* and combined, only about 50% reported that they are recycling at the curb. If the Home Owner Associations are excluded, only about 30% of households report that they are recycling at the curb (this is addressed in more detail later in the section). By charging extra for recycling, haulers are creating a barrier to curbside recycling participation.

There is little economic incentive for residents to undertake source reduction efforts- About two-fifths of all respondents reported that they have unlimited trash collection (they can put out as much trash as they want per week with no extra charges) and less than 1% reported that they have a pay-as-you-throw program that charges more the more they trash they put out. Without limits on trash set-outs or charging extra for more trash disposal, there is no incentive for residents to decrease their trash generation.

The recycling drop-offs are very popular among residents- Nearly two-thirds of the respondents reported that they use the city recycling drop-offs. The most popular drop-off is the West View Recreational Center (23% reported using this site) followed by the MSC Complex (14%).

Larger recycling bins could be needed- Nearly 75% of households reported that they use 18-gallon open-topped bins for curbside recycling. Over 75% reported that their recycling bins are 100% full or overflowing. Previous studies have shown that 18-gallon bins can be a barrier to increased recycling due to weather (wind blowing materials around the street, rain and snow compromising fiber material quality) and running out of room (residents typically dispose of

recyclables that do not fit in the recycling bin in the trash can). Larger recycling carts could be needed to increase recycling amounts.

Future programs may want to focus on organic wastes- Over 75% of residents reported that they had large amounts of food waste in their garbage and 66% reported that they had large amounts of yard waste in the garbage. Over half of the respondents reported that they disposed of their lawn clippings in the trash while less than 10% reported doing any composting efforts. Overall, organics make up a large portion of the residential waste stream. Future program considerations should include the possibility of year round yard waste drop-offs and/or curb-side organics collections.

Costs

There is a large opportunity for PAYT- Less than 1% of households reported that they have a pay-as-you-throw program for trash collection. Pay-as-you-throw uses economic incentives to encourage recycling while making trash costs more equitable for small households and good recyclers. There is a large opportunity for Westminster to encourage diversion through the adoption of PAYT programs.

Average monthly costs are in line with neighboring communities- The average costs for trash service, per month was reported to be around \$16.50. The average additional cost for recycling was reported to be about \$3.00 per month. Combined the average total monthly costs for all households (including those with and without curbside recycling) was reported to be \$17.50. This is within the range of costs observed in communities surrounding Westminster. However, some of these communities include the costs of recycling in the trash costs, effectively providing more services for the same cost.

Satisfaction and Barriers

In general, private haulers are providing good trash services but could improve recycling services- Overall, residents reported that they are quite satisfied with most of the services that the private waste haulers are providing. On a scale of -2 to 2, where -2 is very dissatisfied and 2 is very satisfied, residents reported an average satisfaction level of 1.5 on their overall trash services and .9 on their value/rates of their trash. However, when asked to report their level of satisfaction with curbside recycling services, the average satisfaction level went down to .4 indicating that while residents are satisfied with their trash services, the recycling services could use improvement.

Additional City efforts toward education and recycling could be needed- When it came to City services, the levels of satisfaction were much lower. On the same -2 to 2 scale, residents reported a satisfaction level of -.07 regarding city recycling efforts and a level of -.15 with the City's recycling education efforts indicating that additional City efforts toward both could be needed.

Expense, difficulty of bringing materials to drop-off, and the lack of curbside programs are the largest barriers to recycling- When asked to report on barriers to recycling, over 20% of residents reported that the largest barriers were: recycling service was too expensive to sign-up for, it was too hard to bring materials to the recycling drop-off, or the there was no program available. The City should focus on removing these barriers through programs such as embedding recycling in trash rates for all households, pay-as-you-throw, and others.

There is strong support for additional recycling programs among City residents- On a scale of -2 to 2 where -2 is strongly disagree and 2 is strongly agree, residents scored an average of 1.45 when asked to respond to the statement “*I would like to see more recycling for households*”. Likewise, they scored an average ranking of 1.39 when asked to respond to the statement “*I would support more recycling for businesses*”. On the same scale where -2 is strongly disagree and 2 is strongly agree, the programs with the most support among Westminster residents were:

- Recycling for businesses in Westminster (1.39)
- Recycling in public areas and parks (1.35)
- Encourage/increase public/private partnerships in the City to increase recycling (1.32)
- Curbside recycling for all households with the fee embedded in the trash rates (1.28)
- Increased education/outreach for residents (1.27)

There is strong support for Pay-as-you-throw- Overall, 69% of residents reported that they either *somewhat support or strongly support* a pay-as-you-throw program.

Residents are willing to pay for more services- Although there were a number of residents who reported that they did not want to pay for any additional recycling services, on average, residents were willing to pay an addition \$7.87 per month for expanded recycling programs. The median amount residents reported they would pay per month was reported to be \$5.00.

Comparisons of HOA and non-HOA areas

The results of the survey were grouped into residents that lived in HOAs and those that did not. A comparison of the results from the sub-groups was completed. A few of the implications of this comparison include:

HOAs are more likely to have curbside recycling programs for no extra fee- Over 50% of residents in HOAs reported that they had recycling included in their trash rates compared to less than 10% of residents in non-HOA areas. Non-HOA residents were more likely to pay extra for recycling at the curb and were also more likely to use the city’s drop-off areas when compared to residents in HOA areas.

HOA’s are more satisfied with their services in general than non-HOA areas- On the -2 to 2 scale, where -2 is very dissatisfied and 2 is very satisfied, HOA residents reported an average satisfaction level of nearly 1 with their recycling services compared to an average satisfaction of only .1 for non-HOA residents. Non-HOA residents were also less satisfied with the City’s recycling efforts and education efforts compared to their HOA counterparts. The figure below compares satisfaction between the two groups for a number of programs.

Table 4.2: Comparison of Satisfaction in HOA and non-HOA Areas

| | HOAs | Non-HOA | Difference |
|------------------------|------|---------|------------|
| Recycling service | 0.9 | 0.1 | .8 |
| City Recycling efforts | 0.1 | -0.2 | .3 |
| Education/outreach | 0.0 | -0.3 | .3 |

4.3: Survey Results

The following set of tables, figures, and charts displays the results of the residential statistical survey:

Trash Services

Q2. Who provides your trash collection services? (n=303)

| Answer Options | Response Percent |
|--------------------------|------------------|
| Waste Management | 41.6% |
| Allied/Republic Services | 12.2% |
| Pac-Man Disposal | 14.5% |
| Beeline Disposal | 8.9% |
| Western Disposal | 2.0% |
| Best Cleaner Disposal | 4.0% |
| EDS Waste Solutions | 2.6% |
| Waste Connections | 0.3% |
| Your-Way Disposal Inc. | 6.6% |
| "Other" | 7.3% |

Q3. About how full are your trash containers on average? (n=302)

| Answer Options | Response Percent |
|-------------------------|------------------|
| A quarter (25%) or less | 7.0% |
| About half full (50%) | 15.9% |
| About (75%) full | 33.4% |
| Full (100%) | 41.7% |
| Overflowing | 3.3% |

Recycling Services

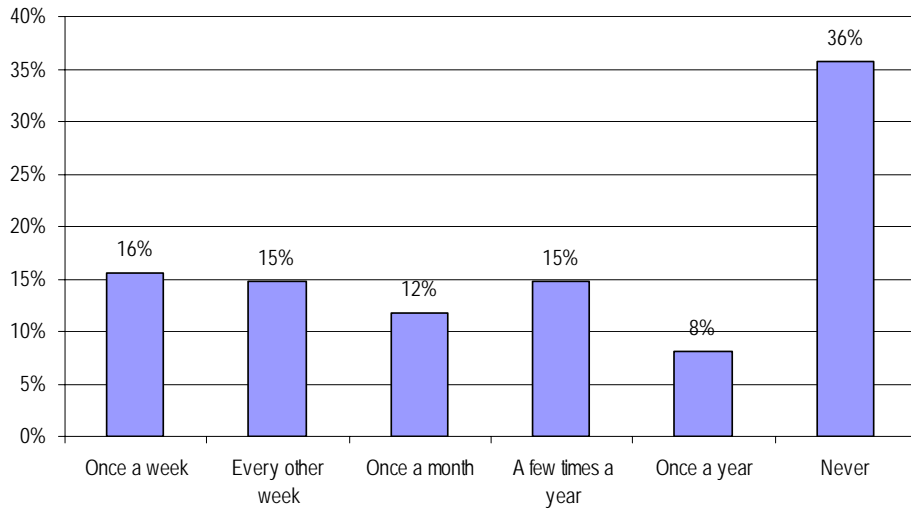
Q4. Does your garbage hauler provide any of the following options? (n=306)

| Answer Options | Yes | No | Not Sure |
|--|-------|-------|----------|
| Curbside recycling for NO extra charge | 28.6% | 52.1% | 19.3% |
| Curbside recycling for an extra charge | 43.2% | 25.1% | 31.7% |
| Bulky item collection | 22.1% | 33.2% | 44.6% |
| Unlimited trash set out | 42.1% | 33.9% | 24.0% |
| Limited trash set outs | 28.4% | 27.3% | 44.3% |
| PAYT | 0.7% | 48.2% | 51.1% |

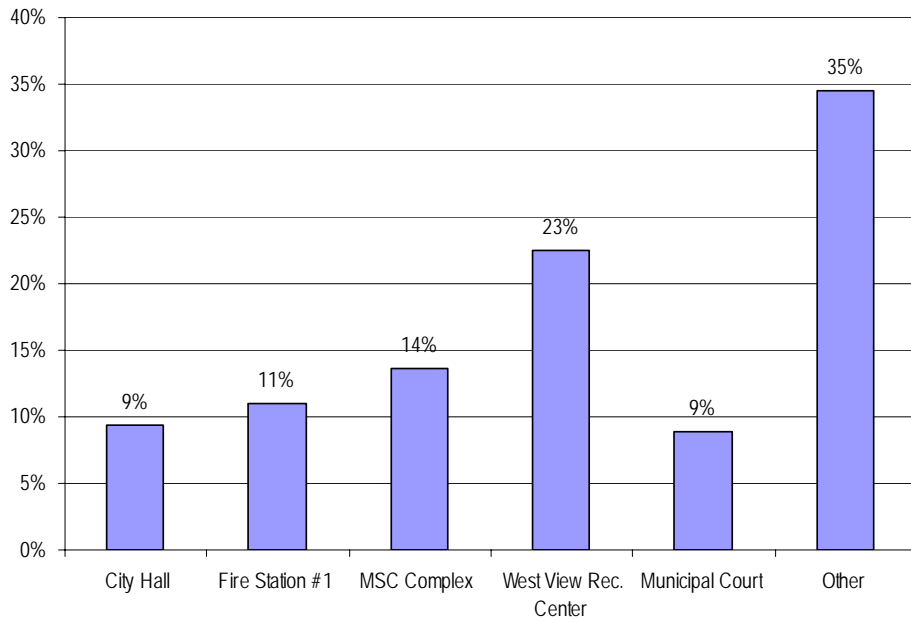
Q5. Does your household recycle in any of these ways? (Check all that apply) (n=307)

| Answer Options | No | Yes | Don't know |
|---|-------|-------|------------|
| Regular curbside collection service by hauler for NO extra charge | 65.5% | 29.5% | 5.0% |
| Regular curbside collection service by hauler for an additional fee | 72.2% | 21.2% | 6.6% |
| Recycling drop-off center | 33.6% | 61.4% | 5.1% |
| At my/spouse's workplace | 81.6% | 15.2% | 3.2% |
| With a friend/relative in a town with recycling | 87.7% | 9.1% | 3.2% |
| Do not recycle much | 69.9% | 26.3% | 3.8% |

Q6. If you use any of the recycling drop-offs in the City, how often do you bring materials there? (n=283)



Q7. Which drop-off(s) do you use most often? (n=191)



Q8. About how much material do you recycle on a regular basis (including all recycling you do, both drop-off and curbside)? (n=305)

| Answer Options | Response Percent |
|--|------------------|
| None- I don't recycle | 13.8% |
| I recycle a little- maybe about 10% of the material that would go in my trash can | 12.5% |
| I recycle quite a bit- maybe about a quarter (25%) of the material that would go in my trash can | 10.5% |
| I recycle a lot -maybe about a third (33%) of the material that would go in my trash can | 16.4% |
| I recycle about half of the waste material I generate | 23.0% |
| I recycle more than half of the material I generate | 24.6% |

Q9. If you have curbside recycling service provided by a hauler, how are materials collected? (n=137)

| Answer Options | Response Percent |
|--|------------------|
| In two or more 18-gallon bins(no lid, rectangular type bins) | 71.5% |
| In a roll-cart with a flip-top lid | 8.0% |
| In a container you provide | 21.9% |
| In bags | 3.6% |

Q10. About how full are your recycling containers on average? (n=174)

| Answer Options | Response Percent |
|-------------------------|------------------|
| A quarter (25%) or less | 4.0% |
| About half full (50%) | 9.8% |
| About (75%) full | 12.6% |
| Full (100%) | 44.8% |
| Overflowing | 32.2% |

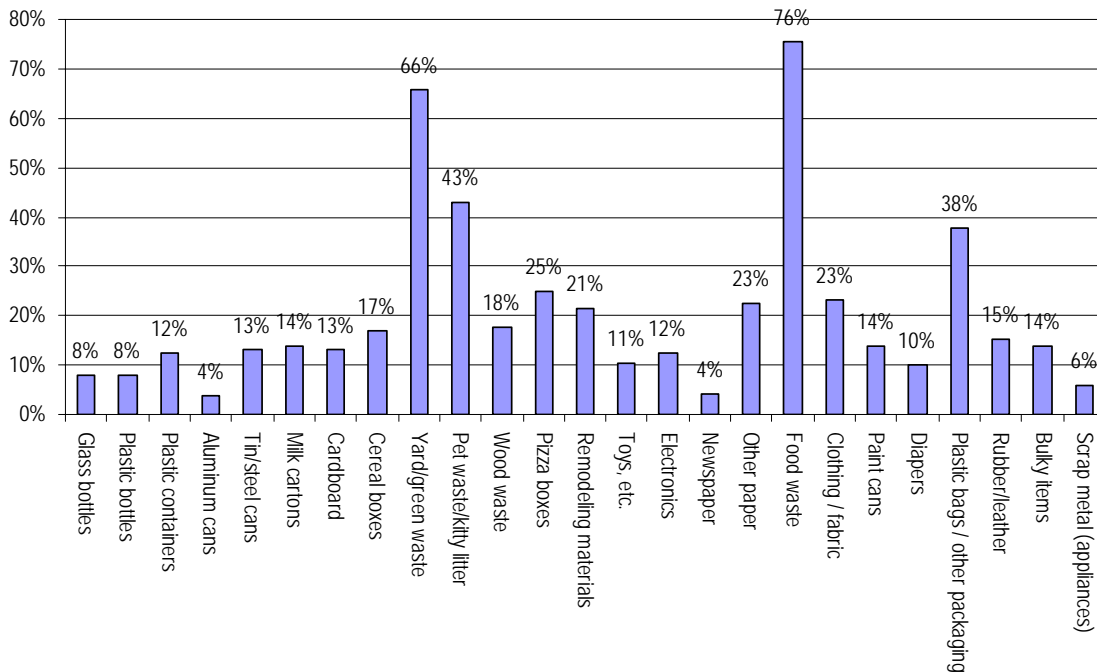
Q11. If you have curbside recycling service, are your materials collected in separate streams (i.e. paper in one bin, cans, plastics and other containers in a different bin) or are they collected in a single stream (all materials together in one container)? (n=147)

| Answer Options | Response Percent |
|-----------------------|------------------|
| Single stream | 57.1% |
| Two streams | 25.2% |
| More than two streams | 9.5% |
| No recycling service | 4.8% |
| Don't know | 3.4% |

Q12. Which of the following materials do you recycle fairly regularly? (Select all that apply) (n=290)

| Answer Options | Response Percent |
|---------------------|------------------|
| Glass bottles | 79.3% |
| Plastic bottles | 82.1% |
| Other plastic | 70.3% |
| Aluminum cans | 79.0% |
| Tin/steel cans | 65.9% |
| Milk cartons | 53.4% |
| Newspaper | 74.5% |
| Cardboard | 69.7% |
| Cereal boxes | 59.7% |
| Other paper | 60.0% |
| Plastic bags | 39.3% |
| None, don't recycle | 9.0% |

Q13. Which materials still remain in your trash after any recycling efforts that you do (please select the top three or four)?



Organics

Q14. Which of the following do you have at your house?

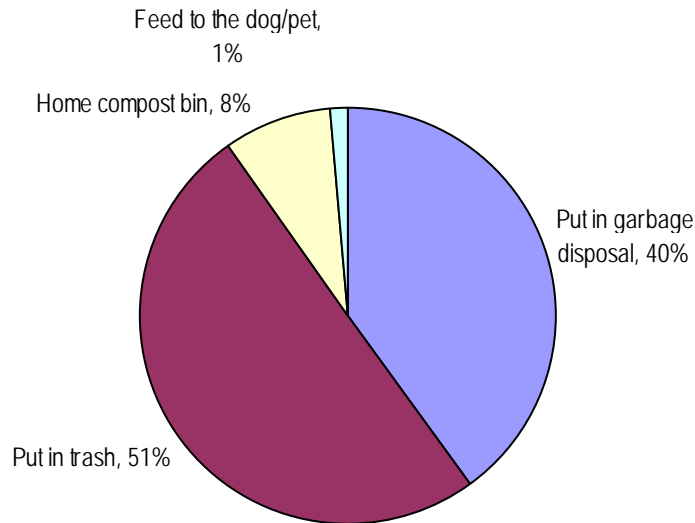
| Answer Options | Response Percent |
|-----------------------------|------------------|
| Lawn | 97.7% |
| Mature trees | 85.2% |
| Garden (flowers or edibles) | 73.4% |
| Shrubs | 79.3% |
| Xeriscaping | 14.8% |
| No lawn or yard | 0.7% |

Q15. Does your household do any of the following with their green waste (grass, tree trimmings, leaves, plant waste, etc.) (check all that apply) (n=302)

| Answer Options | Yes | No | Don't know | Don't have any materials |
|---|-------|-------|------------|--------------------------|
| Leave grass on lawn after cutting | 52.2% | 43.6% | 2.1% | 2.1% |
| Put grass in trash after cutting | 52.2% | 42.8% | 2.5% | 2.5% |
| Have a compost bin in our back yard | 22.8% | 75.3% | 0.0% | 1.9% |
| Lawn service takes grass clippings away | 14.8% | 79.5% | 0.8% | 4.9% |
| Lawn service puts clippings in our trash | 3.8% | 88.1% | 1.7% | 6.4% |
| Tree pruner takes away | 23.1% | 64.5% | 2.9% | 9.5% |
| Tree pruner puts in trash | 22.2% | 65.0% | 3.7% | 9.1% |
| We put yard waste materials other than grass in trash | 75.3% | 20.8% | 0.7% | 3.2% |
| We bring to a yard waste/compost site | 13.7% | 83.0% | 0.4% | 2.9% |
| Bring to a landfill or transfer station | 6.3% | 89.9% | 0.4% | 3.4% |

| Answer Options | Yes | No | Don't know | Don't have any materials |
|---|------|-------|------------|--------------------------|
| No plants or lawn materials to speak of | 8.2% | 80.6% | 4.1% | 7.1% |
| Property manager handles everything | 6.7% | 86.1% | 1.5% | 5.7% |

Q16. What do you do with most of your food waste? (n=303)



Home Owners Associations

Q17. Do you live in a Home Owners Association neighborhood with HOA fees? (n=306)

| Answer Options | Response Percent |
|----------------|------------------|
| Yes | 43.8% |
| No | 56.2% |

Q18. If you live in an HOA, about how many homes are in your development? (n=134)

| Answer Options | Response Percent |
|----------------|------------------|
| 0-100 | 26.1% |
| 101-250 | 37.3% |
| 251-500 | 14.9% |
| 501-750 | 6.0% |
| 751-1000 | 2.2% |
| 1001-1500 | 0.0% |
| 1501-2000 | 0.0% |
| Over 2000 | 0.0% |
| Don't know | 13.4% |

Q19. How is your trash/recycling service paid for? (n=130)

| Answer Options | Response Percent |
|---|------------------|
| Our household contracts directly with the hauler and we choose whichever hauler we want | 30.0% |

| Answer Options | Response Percent |
|--|------------------|
| We contract directly with the hauler but we only have one to choose from | 2.3% |
| Collection services are included in our HOA fees | 58.5% |
| Collection services are included in our HOA fees as a separate line item | 6.9% |
| Don't know | 3.1% |

Costs

Q20. Do you have a Pay-as-you-throw rate structure for your trash collection (you pay an additional fee for throwing away more trash and pay less for less trash)? (n=299)

| Answer Options | Response Percent |
|----------------|------------------|
| Yes | 1.0% |
| No | 87.6% |
| Don't know | 11.4% |

Q21. About how much on average, is your garbage and recycling (if service available) bill per month?

| | Cost for trash | Cost for recycling | Total cost |
|----------------------|----------------|--------------------|------------|
| Average monthly cost | \$16.48 | \$3.14 | \$17.50 |
| Median monthly cost | \$15.00 | \$3.00 | \$15.00 |

Q22. If you have recycling service, are your recycling bins provided to you by the hauler?

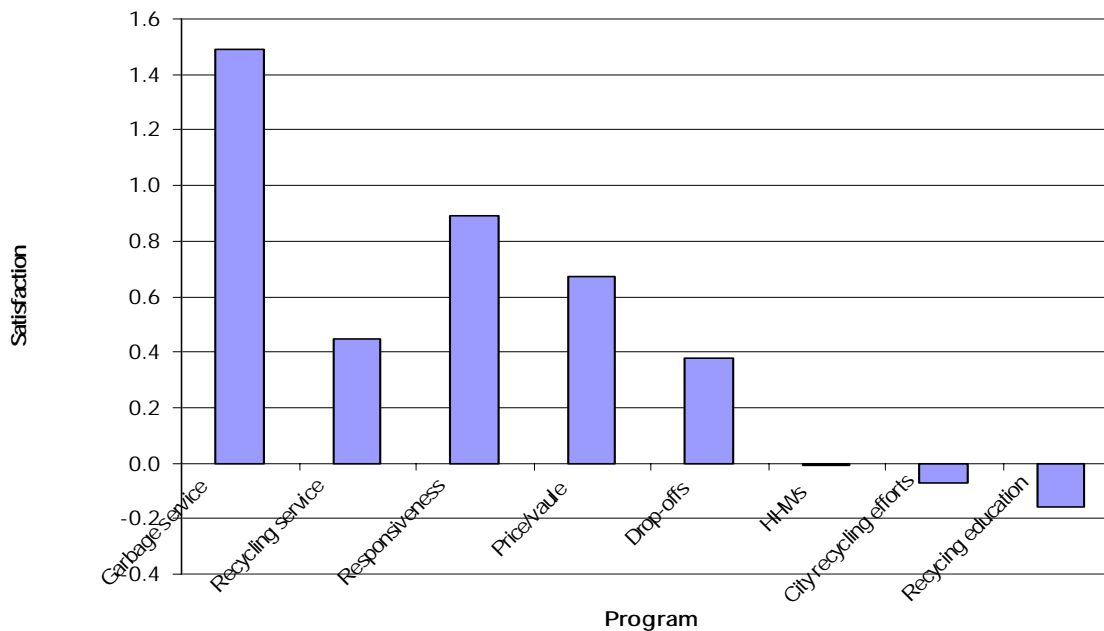
| Answer Options | Response Percent |
|---|------------------|
| Yes, hauler provides for no additional charge | 45.5% |
| Yes, hauler provides the containers but I must pay for them | 21.8% |
| No, I provide my own containers | 34.6% |

Satisfaction, Barriers, and Programmatic Choices

Q23. How satisfied are you with the following?

| Answer Options | Very satisfied | Somewhat satisfied | Neutral | Somewhat dissatisfied | Very dissatisfied | N/A |
|--|----------------|--------------------|---------|-----------------------|-------------------|-------|
| Current curbside garbage service | 63.8% | 24.2% | 5.7% | 2.7% | 0.0% | 3.7% |
| Current curbside recycling service | 25.5% | 14.8% | 8.6% | 5.9% | 7.6% | 37.6% |
| Responsiveness of garbage service to issues / problems | 37.5% | 19.8% | 18.4% | 3.8% | 1.0% | 19.4% |
| Garbage rates / value of service | 31.3% | 24.4% | 18.2% | 11.0% | 4.5% | 10.7% |
| Recycling drop-offs | 19.5% | 19.9% | 17.1% | 9.4% | 5.9% | 28.2% |
| Household Hazardous Waste collection | 11.4% | 11.7% | 22.4% | 14.1% | 10.7% | 29.7% |
| The City's efforts to encourage recycling | 12.6% | 17.1% | 29.0% | 21.3% | 14.0% | 5.9% |
| The City's recycling education and outreach programs | 6.6% | 15.0% | 37.1% | 18.9% | 12.6% | 9.8% |

Figure Q23: Weighted Scores for Program Satisfaction (2=very satisfied, -2=very dissatisfied (n=299)



Q24. What do you see as primary barriers to doing more recycling? (check all that apply)

| Answer Options | Response Percent |
|---|------------------|
| No curbside program | 20.6% |
| Bins/containers fill up too quickly | 19.9% |
| Don't know of any drop-off sites | 14.5% |
| Too hard to take materials to drop-off | 20.2% |
| Not enough materials accepted | 17.0% |
| Don't know what can / can't be recycled | 14.9% |
| I already recycle a lot – no barriers | 41.8% |
| Busy / not interested | 5.0% |
| Expensive to sign up for service | 20.9% |
| What I do doesn't make a difference | 2.5% |
| Not sure it really gets recycled anyway | 17.0% |
| HOA doesn't offer recycling | 2.1% |

Q25. How would you respond to the following statements? (n=293)

| | Strongly agree (2) | Somewhat agree (1) | Neutral (0) | Somewhat oppose (-1) | Strongly oppose (-2) | Weighted Score |
|--|--------------------|--------------------|-------------|----------------------|----------------------|----------------|
| The current trash service fits all my service needs | 31% | 42% | 14% | 11% | 2% | 0.90 |
| I would like to see more recycling for households | 63% | 22% | 13% | 1% | 1% | 1.45 |
| I would like to see more recycling for businesses | 62% | 18% | 19% | 0% | 1% | 1.39 |
| I am interested in the cheapest possible service / no "frills" | 34% | 20% | 35% | 8% | 3% | 0.73 |

| | Strongly agree (2) | Somewhat agree (1) | Neutral (0) | Somewhat oppose (-1) | Strongly oppose (-2) | Weighted Score |
|--|--------------------|--------------------|-------------|----------------------|----------------------|----------------|
| I would be willing to pay more to get recycling | 11% | 23% | 27% | 22% | 17% | -0.13 |
| I would be willing to only have one hauler to choose from if my monthly costs were lowered | 33% | 28% | 24% | 9% | 6% | 0.74 |
| I would be willing to pay a fee for a recycling bin if the city were to provide recycling collection service at no additional charge | 40% | 22% | 19% | 11% | 7% | 0.76 |

Q26. Which of the following program and operational changes for the City's solid waste management would you support? (n=289)

| | Strongly support | Somewhat support | Neutral | Somewhat oppose | Strongly oppose | Don't know | Weighted score |
|---|------------------|------------------|---------|-----------------|-----------------|------------|----------------|
| Curbside recycling for households included in trash bills- no separate fee | 56% | 25% | 13% | 3% | 3% | 1% | 1.28 |
| Recycling in public areas / parks | 59% | 24% | 10% | 3% | 2% | 2% | 1.35 |
| Recycling for Westminster businesses | 59% | 23% | 14% | 0% | 1% | 2% | 1.39 |
| Variable rates for residential trash collection where household pay less for less trash disposed | 37% | 32% | 20% | 6% | 5% | 0% | 0.89 |
| Curbside yard waste service with no separate bill | 49% | 24% | 21% | 2% | 3% | 1% | 1.15 |
| Curbside yard waste service with a charge for those who need the service | 16% | 27% | 30% | 14% | 11% | 3% | 0.23 |
| Permanent yard waste drop-off bin in the City | 44% | 23% | 22% | 5% | 4% | 2% | 0.99 |
| Setting a recycling and diversion goal for the City | 43% | 29% | 20% | 2% | 3% | 3% | 1.07 |
| Mandatory commercial recycling | 41% | 26% | 16% | 6% | 10% | 1% | 0.82 |
| Increased education / outreach for residents | 52% | 28% | 17% | 1% | 1% | 1% | 1.27 |
| Electronic waste special events (round-ups) with small fees for monitors, etc. | 51% | 24% | 19% | 3% | 1% | 3% | 1.19 |
| Encourage / increase public/private partnerships in the City to increase recycling options | 54% | 28% | 12% | 1% | 2% | 2% | 1.32 |
| Banning the disposal of yard waste in residential trash | 10% | 13% | 24% | 22% | 28% | 2% | -0.44 |
| Banning the disposal of certain recyclables in the trash | 29% | 24% | 19% | 13% | 14% | 2% | 0.42 |
| A program where only one hauler or multiple haulers are assigned certain portions of the City, thus limiting your choice in haulers but potentially lowering your monthly fee | 30% | 31% | 19% | 10% | 9% | 2% | 0.64 |

| | Strongly support | Somewhat support | Neutral | Somewhat oppose | Strongly oppose | Don't know | Weighted score |
|-----------------------|------------------|------------------|---------|-----------------|-----------------|------------|----------------|
| Larger recycling bins | 38% | 24% | 30% | 2% | 2% | 4% | 0.96 |

Willingness to Pay

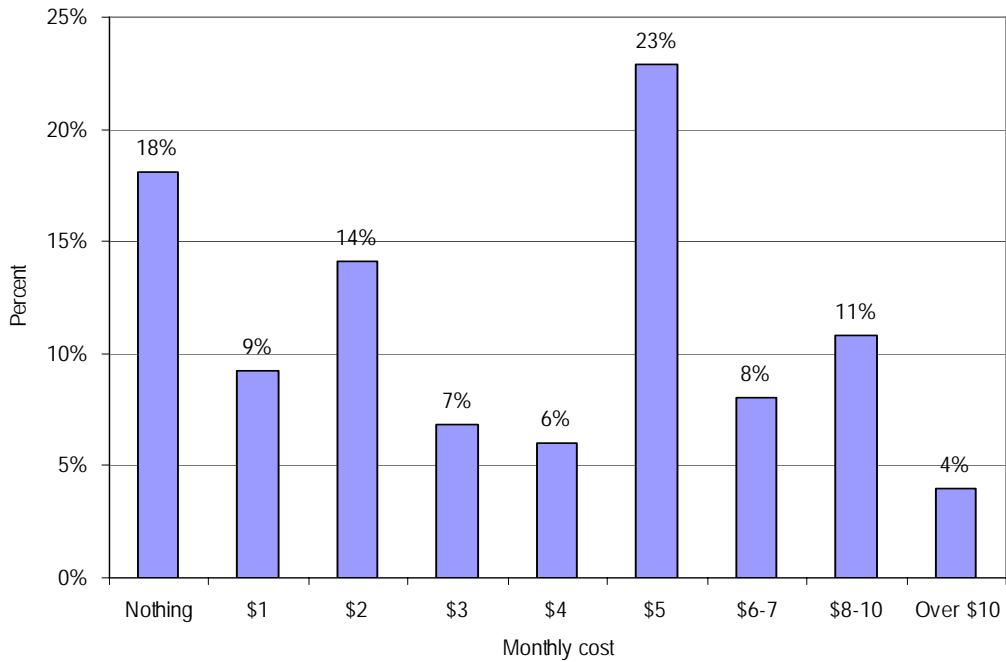
Q27. If the City chose to implement some of the above programs but it cost a little more, how much would you be willing to pay, per month, for the expanded service(s)? (n=283)

| Monthly willingness to pay | |
|----------------------------|---------|
| Average | \$7.87 |
| Median | \$5.00 |
| Max | \$65.00 |
| Min | \$0.00 |

Q28. How likely would you be to use the expanded services under the following conditions? If your costs went up.....(n=225)

| Answer Options | Very likely (90%) | Likely (75-90%) | More likely than not (51-75%) | Not likely (10-50%) | Won't use (0-10%) | Don't need service regardless of price | Don't know |
|----------------|-------------------|-----------------|-------------------------------|---------------------|-------------------|--|------------|
| \$1/month | 73.0% | 7.3% | 5.1% | 4.4% | 4.0% | 4.7% | 2.2% |
| \$2/month | 52.6% | 20.4% | 4.4% | 4.0% | 9.5% | 5.5% | 2.2% |
| \$4/month | 28.8% | 15.7% | 16.1% | 13.5% | 16.1% | 5.5% | 2.2% |
| \$6/month | 17.5% | 12.0% | 13.5% | 21.2% | 25.5% | 5.8% | 2.6% |

Q29. What is the most you would be willing to pay, per month, for curbside recycling service? (n=249)

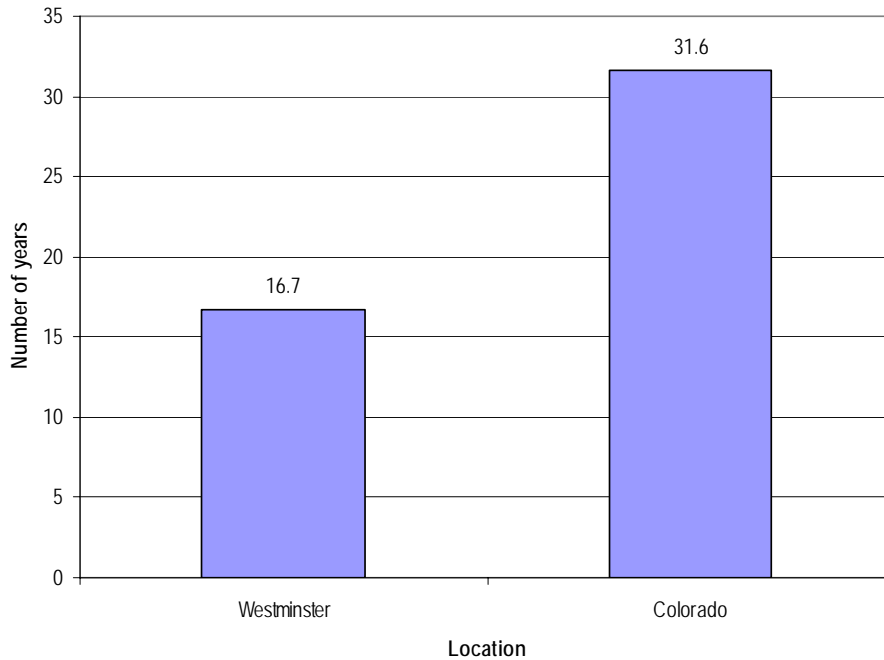


Demographics and Outreach

Q30. What is the best way to contact you regarding trash and recycling programs in Westminster? (n=295)

| Answer Options | Response Percent |
|---------------------|------------------|
| City website | 16.9% |
| Mail | 80.7% |
| Bill inserts | 29.8% |
| Newspaper | 5.4% |
| HOA newsletter | 12.5% |
| Local TV ads | 2.4% |
| Radio announcements | 2.0% |

Q31. How long have you/your family lived in..... (n=289)



Q32. How old is the head of your household? (n=249)

| Answer Options | Response Percent |
|--------------------|------------------|
| Under 25 | 0.4% |
| 25-34 | 7.6% |
| 35-44 | 22.5% |
| 45-54 | 27.3% |
| 55-59 | 14.1% |
| 60-64 | 11.6% |
| 65-79 | 14.1% |
| 80 and above | 1.6% |
| Don't know/refused | 0.8% |

Q33. Which of the following types best describes your home? (n=288)

| Answer Options | Response Percent |
|---|------------------|
| Single family detached home | 95.1% |
| Single family attached home (duplex, townhouse, etc.) | 4.5% |
| Apartment with 2-4 units | 0.3% |
| Apartment with 5 or more units | 0.0% |
| Manufactured/mobile home | 0.0% |

Q34. Do you or members of your household own or rent? (n=290)

| Answer Options | Response Percent |
|----------------|------------------|
| Own | 96.2% |
| Rent | 3.8% |

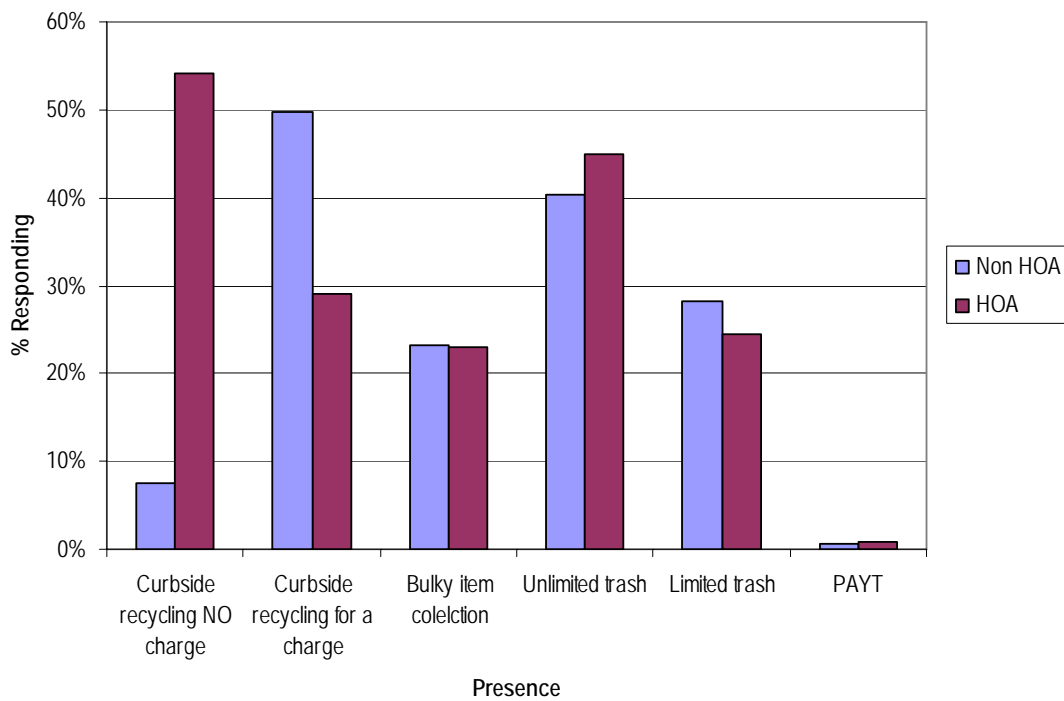
Q35. Including yourself, how many people normally live in your household (n=284)

| | Average HH Size |
|-------------|-----------------|
| 18 or older | 2.0 |
| Ages 6-17 | 0.4 |
| 5 or under | 0.2 |
| Total | 2.6 |

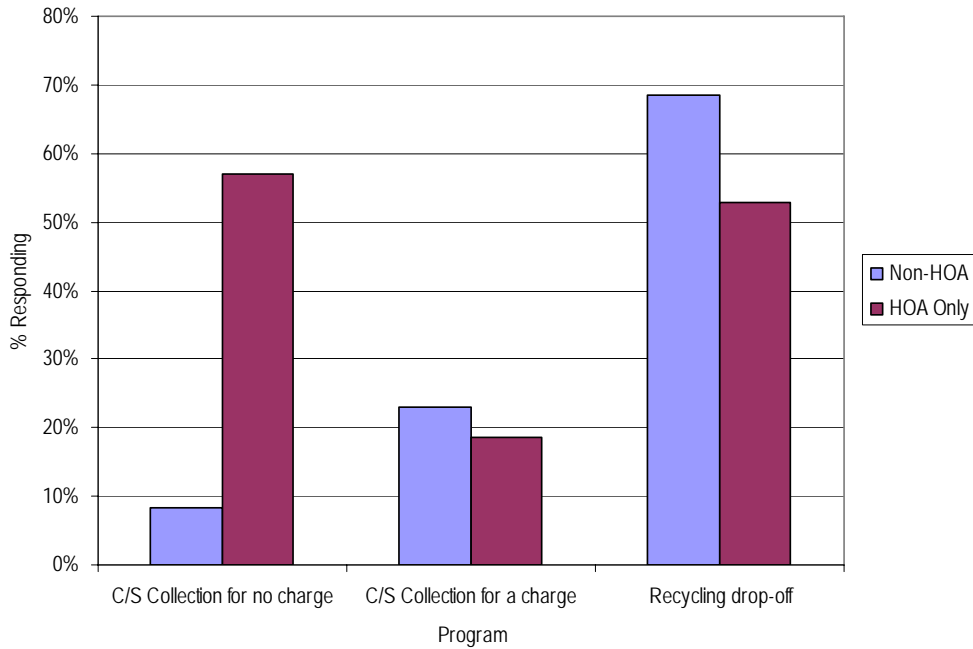
Comparison of HOAs and Non-HOA Areas

The results of the survey were grouped into residents that lived in HOAs and those that did not. A comparison of the results from the sub-groups was completed. The figures below display the differences and similarities between the two sub-groups.

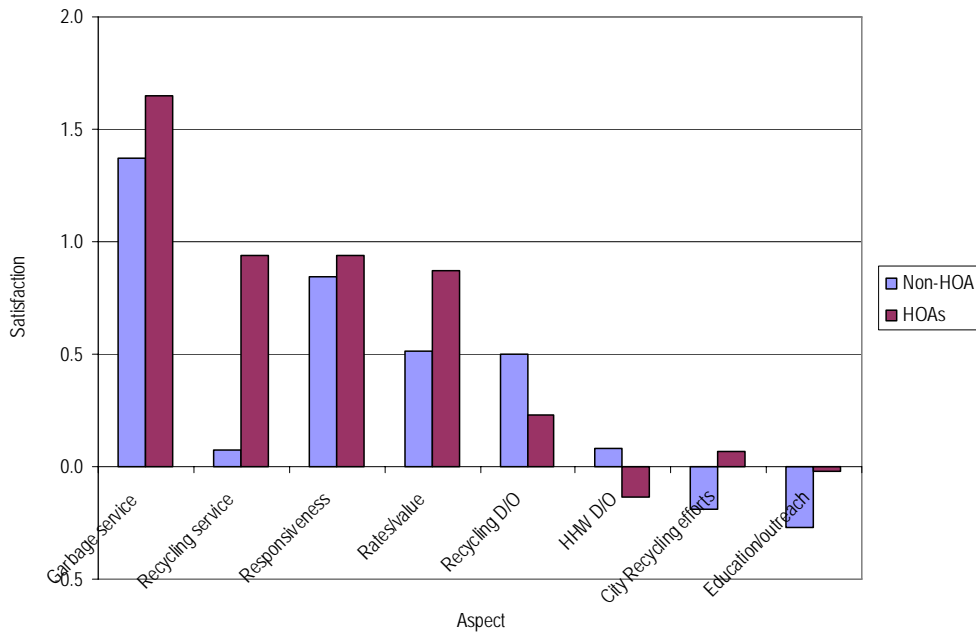
Q1. Programs Offered by Haulers for HOA and Non-HOA Neighborhoods



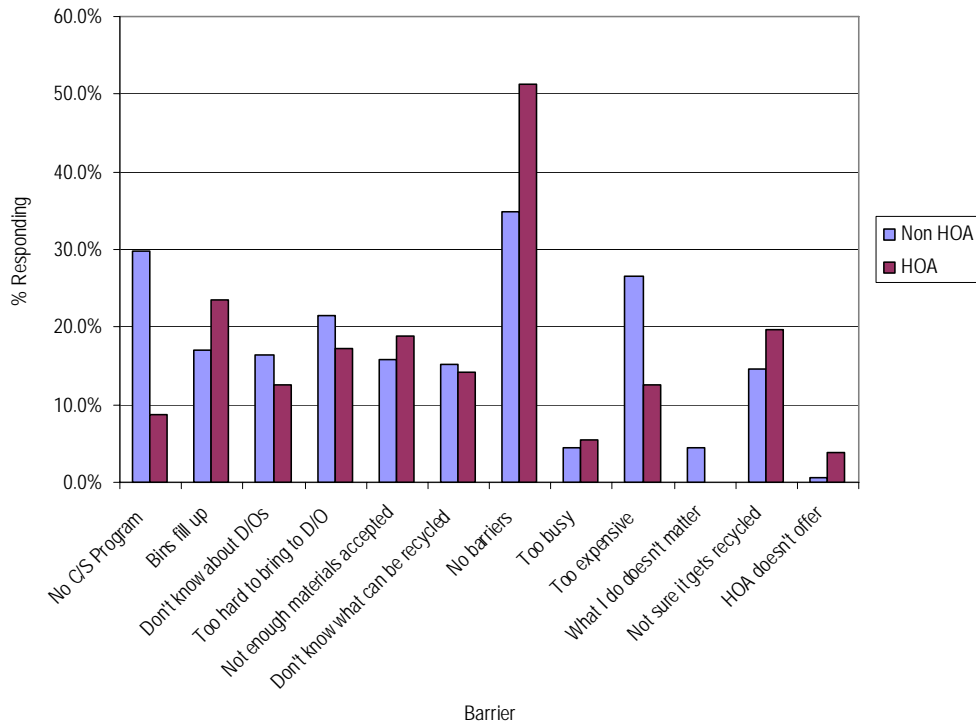
Q2. How Respondents Recycle in HOA and Non-HOA Neighborhoods



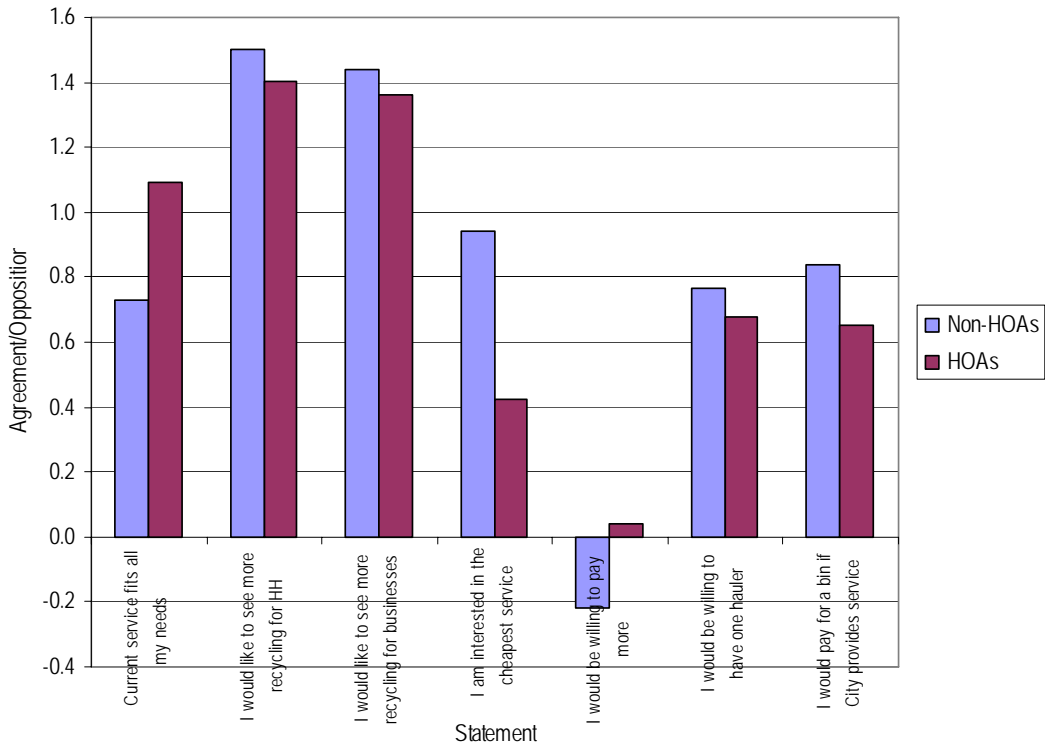
Q3. Weighted Average of Satisfaction with Current Services for HOA and Non-HOA Neighborhoods (2=Very satisfied, -2=very dissatisfied)



Q4. Barriers to Recycling for HOA and Non-HOA Neighborhoods



**Q4. Agreement or Opposition to Statements for HOA and Non-HOA Neighborhoods
(2=Strongly agree, -2=Strongly disagree)**



SECTION 5: COMMERCIAL SET-OUT SURVEY

To determine the approximate number of businesses in Westminster that are actively recycling a windshield survey and a series of business interviews was conducted. Working from the City provided list of all businesses in Westminster, a random sample of businesses was generated. For each of the selected businesses, SERA researchers recorded observations of the trash and recycling containers (if present) outside of the building and recorded observations on whether or not there was recycling available for customers. SERA researchers also conducted 54 interviews with business staff to determine the main materials generated and what, if any, recycling efforts were being undertaken.

Implications

- *Additional recycling programs are needed to address the businesses sector-* Only one quarter of the businesses surveyed had an official recycling program with a dedicated recycling hauler. Even if the businesses did have a hauler operated program, in many cases it was only for one material such as cardboard.
- *There is support among businesses for additional programs-* While only 25% had a hauler for recycling services, nearly 20% of the businesses had an informal recycling program where an employee brought the materials to a drop-off or other area for recycling. While these types of programs may not be diverting large amounts of materials they do indicate a strong willingness to recycle amongst Westminster businesses. The table below displays the businesses that were recycling:

Table 5.1: Westminster Business Recycling

| | Hauler Provided Recycling | Informal Programs | Recycling for Customers | Total with some type of recycling |
|-----------------------|---------------------------|-------------------|-------------------------|-----------------------------------|
| Percent of businesses | 24.5% | 21% | 6% | 46% |

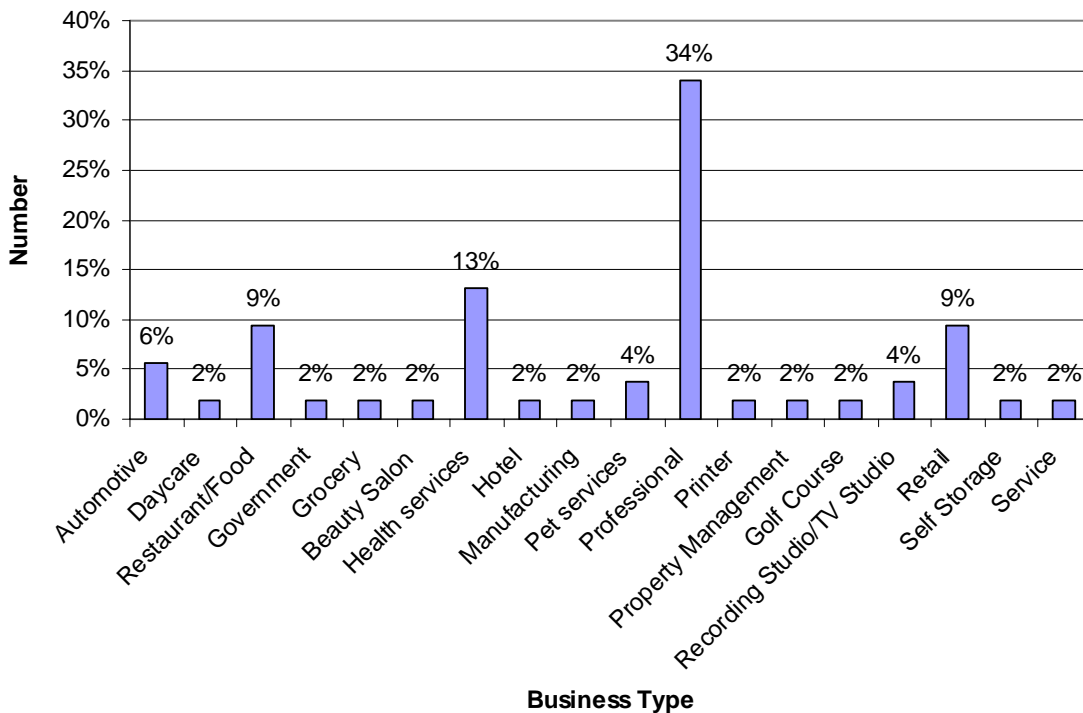
- *Offices and “upscale” businesses were more apt to recycle-* Professional businesses such as banks, insurance offices, and others were observed to be recycling most often. Bars and restaurants were less likely to have recycling programs. This may be due to limited budgets, shared dumpsters, lack of control over their trash services, or other barriers.
- *Additional education may be needed-* During the interviews with the businesses a pre-conceived notion that recycling is not cost-effective was repeatedly uncovered. While this may be true for some smaller businesses, this is not necessarily the case for the entire commercial sector. Additional outreach and education may be needed to help overcome this potential barrier.
- *A shared recycling container program may be a strong option-* Only 27% of the businesses interviewed were on individual dumpster service while the majority shared a dumpster with other businesses. There is an opportunity to explore a shared dumpster

recycling program as many of the businesses already share a dumpster for their trash. Cities such as Charlotte, NC have successfully implemented a shared dumpster service for cardboard and office paper.

Business types

The most typical business type interviewed was professional. About one-third of all the businesses were in this category and ranged from banks and investment companies to insurance offices, a tax preparation company and a temporary staffing office. Over 10% of the businesses interviewed were in the health services sector including a dentist office, a chiropractor, and a massage therapy office. About 10% of the businesses were retail and about 10% were restaurants. Figure 5.2 displays the distribution of the businesses interviewed.

Figure 5.2: Business Types



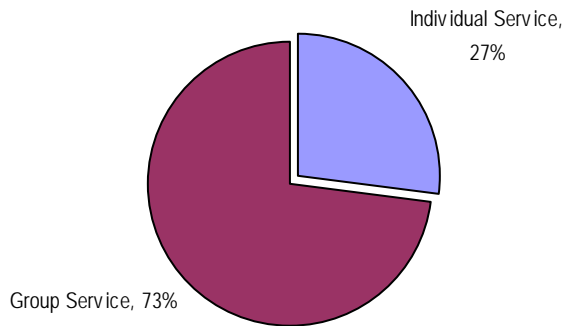
The average business size was 14 employees and the largest business interviewed had 94 employees. The business with the least number of employees had only one employee.

Observed Trash Services

Just over one-quarter of the businesses interviewed were on individual trash service meaning that they had their own dumpster that they did not share with any other businesses. More common was group trash service where a number of near-by businesses share dumpster service. Shared dumpster service may provide a lower trash rate for individual businesses.

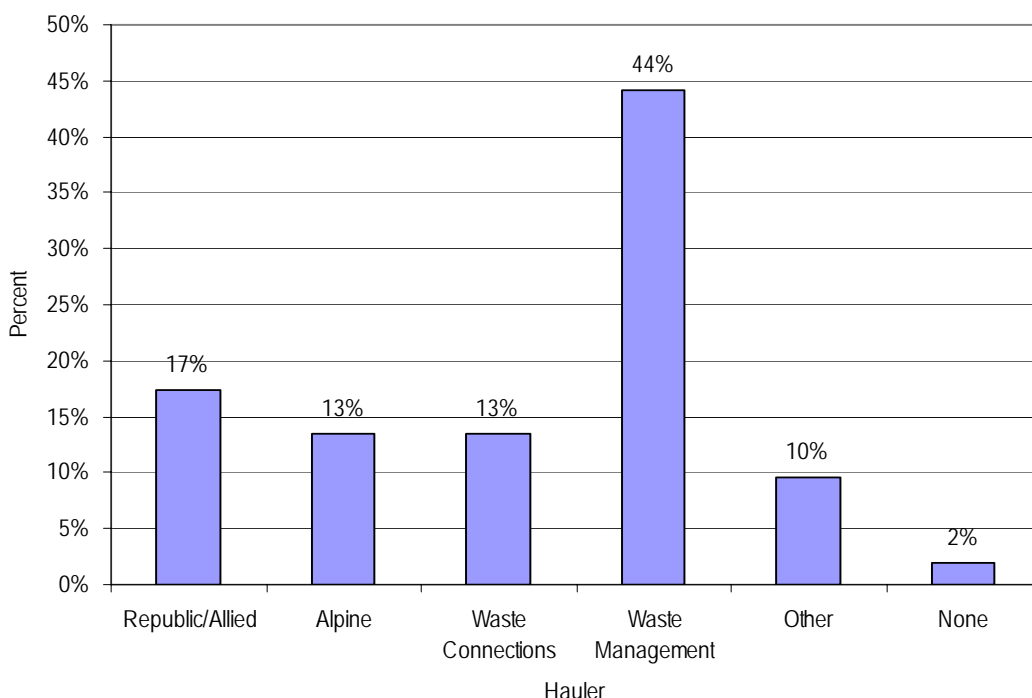
Figure 5.3 shows the number of observed businesses with individual and shared or group service for trash collection.

Figure 5.3: Businesses Trash Service



Waste Management provided service to nearly half of the businesses surveyed. Republic Services/Allied had just under one-fifth of the observed accounts while Waste Connections and Alpine Waste and Recycling each had 13% of the observed accounts. One of the businesses reported that they did not have trash collection services but instead brought all the materials generated on-site home and disposed of them in their residential trash collection. Figure 5.4 shows the distribution of haulers providing commercial services in Westminster.

Figure 5.4: Commercial Haulers



Recycling Service

Recycling service and the presence of recycling service was ascertained using three methods:

- Observed recycling containers outside of the business
- Observed recycling containers inside of the business for staff/customers
- Reported recycling activities by business staff

While all but one of the businesses had a trash dumpster, only 24.5% had a recycling dumpster. The remaining 75% did not have outdoor recycling containers. Inside of the businesses, only 6% had recycling bins for customers or staff that was readily apparent. However, when business staff was interviewed a higher rate of businesses reported that they were in fact recycling. Nearly half, 45% reported that staff recycled at least some portion of the materials they generated.

For the businesses that did have recycling service (45% of total) the service type was about evenly split into two categories; those that hire a hauler for recycling (54%) and those businesses that have an informal program (46%). Some of the formal programs included businesses that had cardboard only recycling (some retail and offices), a manufacturing company that had a metal recycling program, and an auto parts salvage company that takes usable parts out of old cars for re-use and sends the old cars to a recycler in Denver. Some of the informal programs included businesses where an employee brought materials home to be recycled in Westminster, others who brought the materials to drop-offs in Boulder or Longmont, or those that only recycled aluminum cans in the lunch room. The table below displays the percent of interviewed businesses with recycling programs.

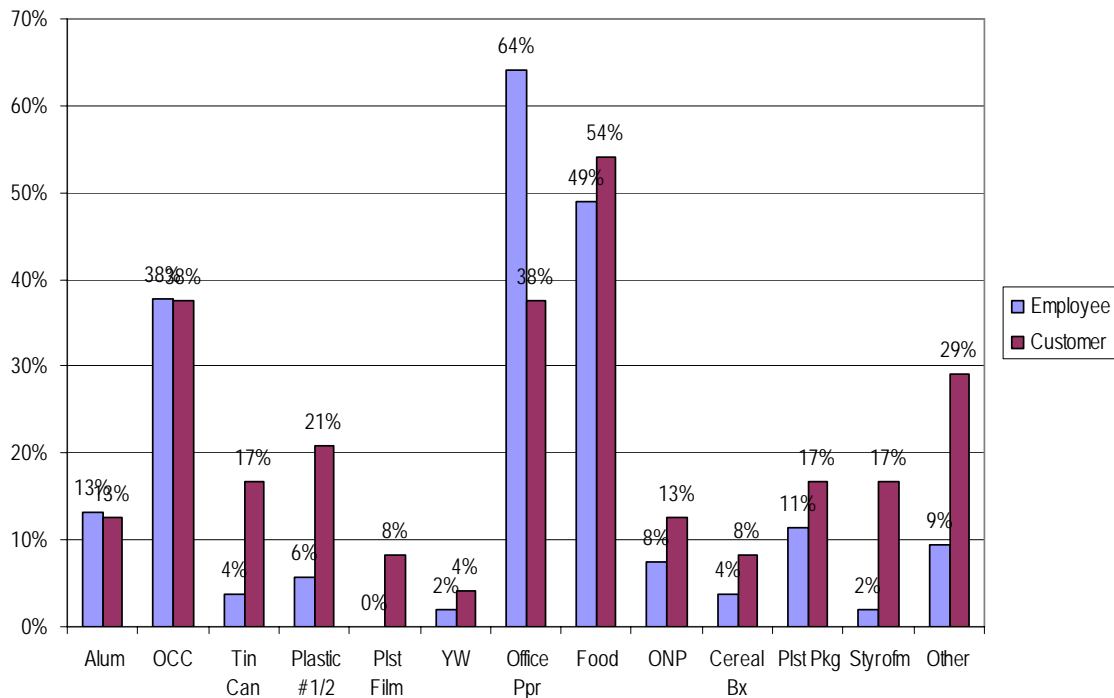
Table 5.5: Westminster Business Recycling

| | Hauler Provided Recycling | Informal Programs | Recycling for Customers | Total with some type of recycling |
|-----------------------|---------------------------|-------------------|-------------------------|-----------------------------------|
| Percent of businesses | 24.5% | 21% | 6% | 46% |

Materials Generated and Recycled

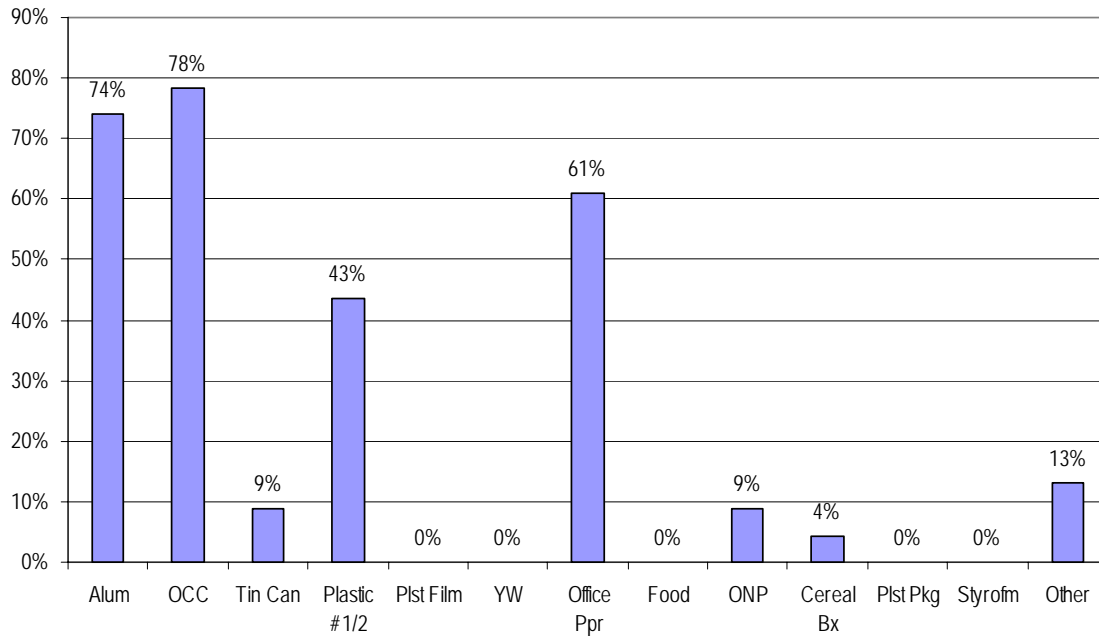
The businesses interviewed were asked to report on two categories of generation, the materials that customers generate and the materials that employees generate. About half of the businesses reported that their customers did not generate any materials on-site (these businesses are not included in the figure below). Nearly two-thirds of the businesses reported that their employees generated significant amounts of office paper and almost half reported that their employees generated food waste. For customers, over half of the businesses in which customers generated waste on site reported that they generated food waste, followed by 38% that reported customers generated cardboard. Neither customers nor employees typically generated yard waste. Figure 5.6 below displays the waste generation reported for both employees and staff.

Figure 5.6: Materials Generated by Employees and Customers



For business that reported that they were recycling, the three most common materials recycled were cardboard (78%), aluminum (74%), and office paper (61%). The figure below shows the reported materials recycled by the businesses interviewed.

Figure 5.7: Materials Recycled



SECTION 6: COMMERCIAL SURVEY RESULTS

6.1: Survey Collection

The Westminster statistical commercial survey was conducted in much the same way as the residential statistical survey. Postcards advertising the web-based survey were sent to all 1,878 businesses in the City. The business names and addresses were provided to SERA by the City. To ensure that the statistical survey had enough responses to reach an adequate level of confidence, phone surveys were also conducted by SERA staff with a random sample of the businesses. Approximately 36% of the surveys were collected over the phone. The table below displays the number of postcards sent out, the response rate, and the confidence interval.

Table 6.1: Postcard Responses

| Postcards mailed | Completed Surveys | Completion Rate | Confidence Interval |
|------------------|-------------------|-----------------|---------------------|
| 1887 | 68 | 3.6% | 90% +/- 10% |

6.2: Implications

The following set of implications and results was developed through a detailed analysis of the collected data.

Trash and Recycling Services

Most businesses are contracting with one of two haulers and one-fifth have little to no control over their trash services- Less than 2% of the businesses reported that they did not contract for trash services and instead chose to self-haul. For those that do contract for services, about 55% are with either Waste Management or Republic/Allied Services. It is important to note however, that over one-fifth of businesses reported that their property manager handles the trash service and they were not sure who the hauler was. This will be an important aspect to consider when designing commercial programs and outreach.

Haulers are typically not providing recycling services to businesses- Only about one-fifth of the businesses reported that they contracted with their hauler to provide recycling service. Nearly half of the businesses reported that they were *not* undertaking any recycling behavior. About one-fifth of businesses reported that they had an “unofficial” recycling program. These results gel with the on-site surveying and research completed during the commercial set-out surveys. Examples of these types of programs uncovered include:

- Employees collecting materials at work and bringing them home to recycle
- An employee collecting materials and bringing them to a recycling drop-off
- Special electronics waste recycling
- Re-using materials at work (such a as a dry cleaner re-using hangers and bags)
- Separating metals out of the garbage and leaving them out back to be “scavenged”

Food waste/organics programs may be a lower priority in the commercial sector – Overall 80% of the businesses reported generating no yard waste and almost 50% reported generating no

food waste. Less than 10% of the businesses interviewed reported generating a significant amount of food waste¹⁰.

Recycling programs targeting fiber streams are the most common and the most needed- For the businesses that do recycle, the items most often recycled include:

- Aluminum (53%)
- Old corrugated cardboard (44%)
- Shredded paper (44%)
- Office/other paper (35%)

When asked to report on what materials they would most like to see a program for, 33% of the respondents reported office/other paper and 25% reported OCC. Similarly, office/other paper was reported to be the item that most often remains in the trash after any recycling activities that the businesses undertake.

Satisfaction and Barriers and Willingness-to-Pay

Businesses are generally satisfied with their trash service and unsatisfied with recycling options- On a scale of -2 to 2, where 2 is very satisfied and -2 is very unsatisfied, businesses reported a satisfaction (weighted average) of nearly 1 with their garbage service. However, the weighted average of satisfaction for recycling options was -.15 and the average level of satisfaction with the City's efforts toward encouraging recycling was -.05. These results indicate that overall, businesses are dissatisfied with recycling options and efforts.

Programs targeting property management companies and overcoming space issues are needed- Businesses reported that the largest barrier to recycling was that a property management company handles the trash and recycling contracting and the business owner has little say in the decision-making. It is important that the City investigate programs/outreach to work with the property management companies to overcome this barrier. In addition, nearly 30% of the businesses reported that they do not have adequate space for recycling. This is a typical barrier in the commercial (and multi-family) sector and there are a number of ways to overcome the issue¹¹.

There is a disconnect between business wants/need and their willingness-to-pay- Overall, businesses in Westminster are supportive of additional and expanded recycling programs. Nearly 70% of the respondents reported that they would like to see more recycling for businesses in the City. However, when asked if they agreed or disagreed with the statement “I would be willing to pay more to get recycling”, the weighted score on a -2 to 2 scale (where -2 is strongly disagree and 2 is strongly agree) was -.14. Most businesses reported they were not willing to pay for more programs. Additionally, when asked directly how much more they would be willing to pay, the average per monthly amount was only \$13.58 with a median of \$0.00.

Bar/restaurant recycling, sharing recycling containers, education, and setting a goals were the most highly supported programs among the business community- When asked to report their

¹⁰ This does not imply that food waste should *never* be addressed in the commercial sector. When asked to report on what materials remained in the trash after any recycling, 46% of the businesses reported they had food waste in their trash and national waste composition studies indicate that nearly 25% of the total US waste stream is made up of organic materials (2007 Municipal Solid Waste in the United States, US EPA 2008)

¹¹ Options and programs for overcoming barriers to recycling are discussed in Section 9- Program Recommendations.

level of support for various recycling and diversion programs, the following programs received the highest weighted scores on a -2 to 2 scale (-2 strongly oppose to 2 strongly support):

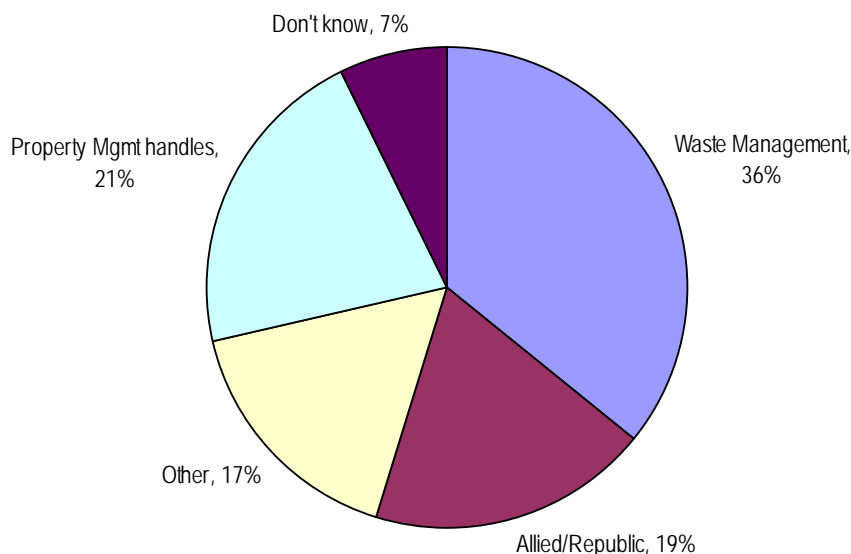
- Bar and restaurant recycling program for glass and aluminum (1.45)
- A program where near-by businesses can share a recycling container for cardboard (1.43)
- Increased education/outreach for businesses (1.25)
- Setting a recycling goal for the city (1.13)

6.3: Survey Results

Q1. Do you have regular garbage / trash service by a hauler? (n=65)

| Answer Options | Response Percent |
|---------------------------------|------------------|
| Yes | 93.9% |
| No service / we haul on our own | 1.5% |
| Don't know | 6.1% |

Q2. If you contract with a private hauler, who is it?



Q3. Does your business recycle? If so, how? (n=66)

| Answer Options | Response Percent |
|---|------------------|
| We don't recycle | 43.3% |
| Collected by hauler | 20.9% |
| We bring it to a buy-back center or a material recycling facility in the area | 4.5% |
| We bring to drop-off | 14.9% |
| One of employees brings materials to drop-off (or home) / unofficial program | 20.9% |

| | |
|---|------|
| We recycle on our own in another way (please specify below) | 9.0% |
| Don't know | 0.0% |

Q4. Does your business generate any green waste? If so, what do you do with it?

| Answer Options | Don't have any | Leave on lawn | Landscaper collects | Put in garbage | Compost on site | Other |
|-------------------------|----------------|---------------|---------------------|----------------|-----------------|-------|
| Grass | 79.7% | 3.4% | 10.2% | 5.1% | 0.0% | 1.7% |
| Tree trimmings/prunings | 76.3% | 0.0% | 10.2% | 8.5% | 1.7% | 1.7% |
| Plant waste/prunings | 76.3% | 0.0% | 10.2% | 6.8% | 1.7% | 1.7% |

Q4. Does your business generate food waste? (n=64)

| Answer Options | Response Percent |
|-------------------------------|------------------|
| Don't generate any | 47.7% |
| Generate a little | 43.1% |
| Generate quite a bit | 9.2% |
| It is a major material for us | 0.0% |
| Don't know | 0.0% |

Q5. What do you do with your food waste? (n=62)

| Answer Options | Response Percent |
|------------------------------|------------------|
| Don't generate any | 42.9% |
| Garbage | 54.0% |
| Garbage disposal | 12.7% |
| Compost | 6.3% |
| Donate | 0.0% |
| Sell (for animal feed, etc.) | 0.0% |

Q6. About how much material do you recycle? (n=63)

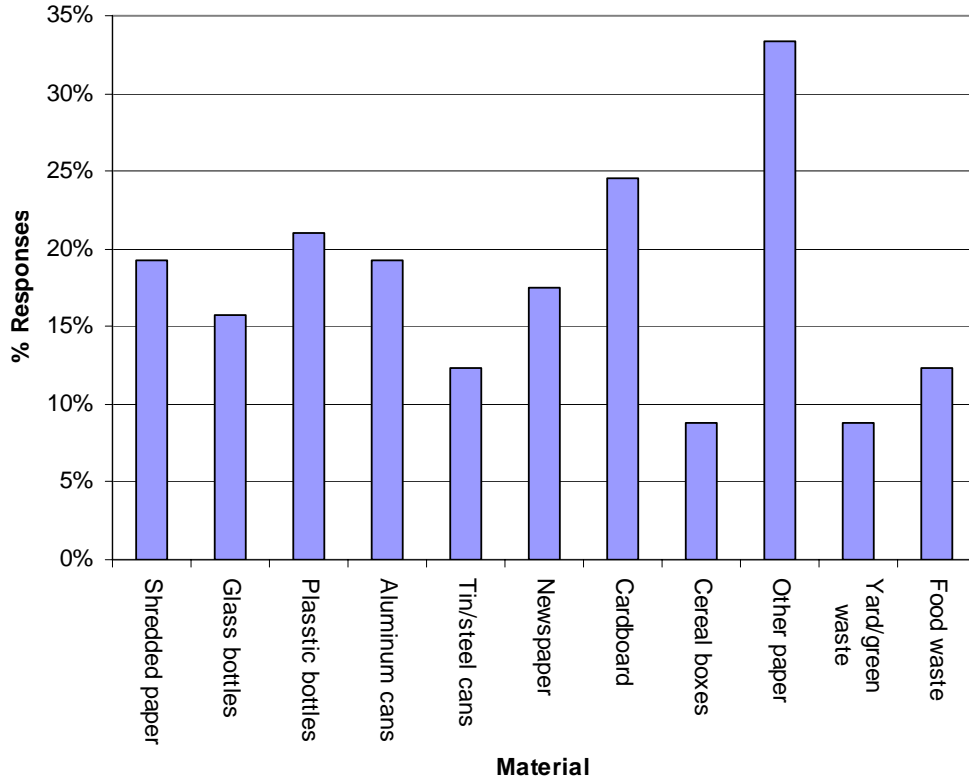
| Answer Options | Response Percent |
|---|------------------|
| Don't recycle at all | 35.9% |
| We recycle a little – maybe about 10% of the material that would go into our trash can | 20.3% |
| We recycle quite a bit - about a quarter (25%) of the material that would go into our trash can | 17.2% |
| We recycle a lot - almost half of the material that would go into our trash can | 10.9% |
| We recycle the majority - half or more of the material that would go into our trash can | 15.6% |

Q7. Which of the following materials do you recycle fairly regularly / in great volumes? Which materials would be helpful to have more opportunities to recycle?

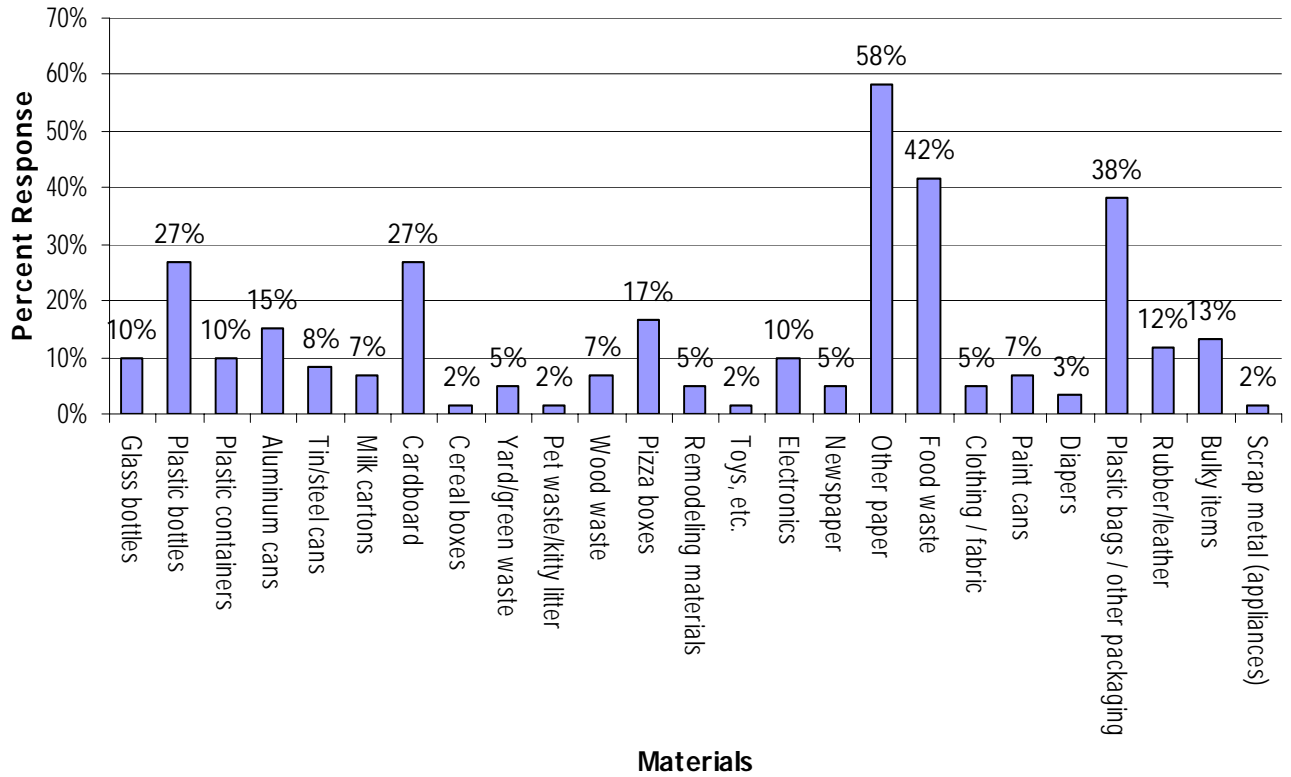
| Answer Options | Already recycle a lot | Need a program | Don't recycle | Don't know | N/A |
|-----------------|-----------------------|----------------|---------------|------------|-------|
| Shredded paper | 43.9% | 19.3% | 29.8% | 0.0% | 7.0% |
| Glass bottles | 38.6% | 15.8% | 28.1% | 0.0% | 17.5% |
| Plastic bottles | 47.4% | 21.1% | 29.8% | 0.0% | 7.0% |
| Aluminum cans | 52.6% | 19.3% | 26.3% | 0.0% | 8.8% |
| Tin/steel cans | 33.3% | 12.3% | 31.6% | 1.8% | 17.5% |
| Newspaper | 29.8% | 17.5% | 33.3% | 0.0% | 17.5% |
| Cardboard | 43.9% | 24.6% | 29.8% | 0.0% | 7.0% |
| Cereal boxes | 22.8% | 8.8% | 33.3% | 1.8% | 28.1% |
| Other paper | 35.1% | 33.3% | 22.8% | 0.0% | 10.5% |

| | | | | | |
|--------------------|------|-------|-------|------|-------|
| Yard / green waste | 0.0% | 8.8% | 33.3% | 0.0% | 47.4% |
| Food waste | 1.8% | 12.3% | 38.6% | 1.8% | 33.3% |

Q8. Which materials would be helpful to have more opportunities to recycle?



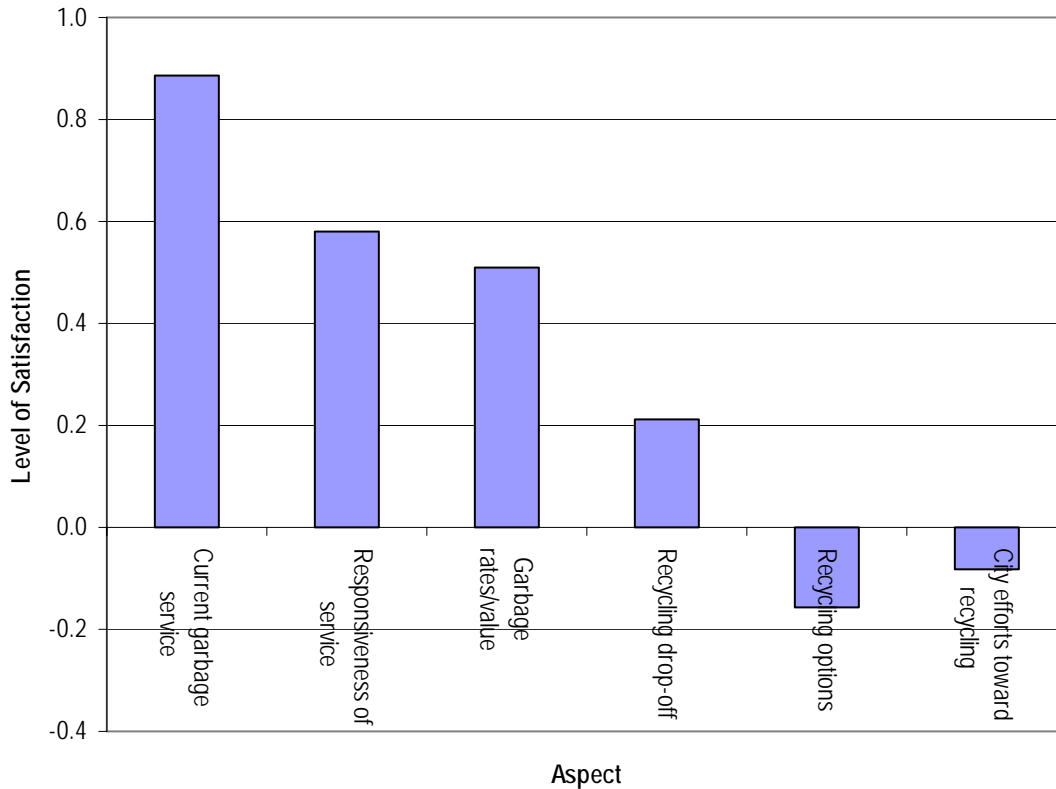
Q9. Which materials still remain in your trash after any recycling efforts that you do? (n=59)



Q10. How satisfied are you with the following?

| | Very satisfied | Somewhat satisfied | Neutral | Somewhat dissatisfied | Very dissatisfied | N/A |
|--|----------------|--------------------|---------|-----------------------|-------------------|-------|
| Current curbside garbage service | 35.5% | 24.2% | 6.5% | 3.2% | 1.6% | 29.0% |
| Responsiveness of garbage service to issues / problems | 22.6% | 19.4% | 24.2% | 6.5% | 0.0% | 27.4% |
| Garbage rates / value of service | 19.7% | 23.0% | 18.0% | 8.2% | 1.6% | 29.5% |
| Recycling drop-off | 14.8% | 14.8% | 21.3% | 9.8% | 6.6% | 32.8% |
| Recycling options | 10.5% | 15.8% | 21.1% | 17.5% | 17.5% | 17.5% |
| City efforts to encourage recycling | 13.1% | 11.5% | 27.9% | 16.4% | 14.8% | 16.4% |

Q11. Weighted Average of Satisfaction (-2 Very Dissatisfied to 2 Very Satisfied)



Q12. What do you see as primary barriers to doing more recycling? (n=58)

| Answer Options | Response Percent |
|--|------------------|
| No program available | 34.5% |
| We don't have enough space | 25.9% |
| Our property management company controls trash/recycling, we don't have a choice | 41.4% |
| Don't know of any drop-off sites | 15.5% |
| Too hard to take materials to drop-off | 27.6% |
| Not enough materials accepted | 6.9% |
| Don't know what can / can't be recycled | 12.1% |
| I already recycle a lot – no barriers | 13.8% |
| Busy / not interested | 5.2% |
| Expensive to sign up for service | 15.5% |
| What I do doesn't make a difference | 1.7% |
| Not sure it really gets recycled anyway | 3.4% |

Q13. How would you respond to the following statements?

| Answer Options | Strongly agree | Somewhat agree | Neutral | Somewhat oppose | Strongly oppose | Weighted Score |
|---|----------------|----------------|---------|-----------------|-----------------|----------------|
| The current trash service fits all my service | 25.0% | 19.2% | 40.4% | 7.7% | 7.7% | 0.46 |

| Answer Options | Strongly agree | Somewhat agree | Neutral | Somewhat oppose | Strongly oppose | Weighted Score |
|---|----------------|----------------|---------|-----------------|-----------------|----------------|
| needs | | | | | | |
| I would like to see more recycling for businesses | 67.3% | 15.4% | 15.4% | 1.9% | 0.0% | 1.48 |
| I would like to see more recycling for households | 54.9% | 15.7% | 29.4% | 0.0% | 0.0% | 1.25 |
| I am interested in the cheapest possible service / no "frills" | 36.0% | 22.0% | 30.0% | 12.0% | 0.0% | 0.82 |
| I would be willing to pay more to get recycling | 2.0% | 27.5% | 35.3% | 25.5% | 9.8% | -0.14 |
| I am willing to consider having the City arrange for collection via contract if the City finds it has strong advantages | 23.4% | 25.5% | 38.3% | 10.6% | 2.1% | 0.57 |

Q14. Which of the following program and operational changes for the City's solid waste management would you support?

| Answer Options | Strongly support | Somewhat support | Neutral | Somewhat oppose | Strongly oppose | Don't know | Weighted Score |
|--|------------------|------------------|---------|-----------------|-----------------|------------|----------------|
| Including recycling services in the trash fees | 36.7% | 25.0% | 20.0% | 11.7% | 3.3% | 3.3% | 0.80 |
| A program where near-by businesses can share a recycling container for cardboard | 56.7% | 30.0% | 11.7% | 0.0% | 0.0% | 1.7% | 1.43 |
| A bar/restaurant recycling program for glass and aluminum | 56.7% | 31.7% | 8.3% | 0.0% | 0.0% | 3.3% | 1.45 |
| Permanent yard waste drop-off bin in the City | 38.3% | 18.3% | 26.7% | 6.7% | 0.0% | 3.3% | 0.88 |
| Setting a recycling and diversion goal for the City | 45.0% | 26.7% | 23.3% | 3.3% | 0.0% | 0.0% | 1.13 |
| Mandatory commercial recycling | 21.7% | 23.3% | 20.0% | 21.7% | 11.7% | 1.7% | 0.22 |
| Increased education / outreach for businesses | 53.3% | 21.7% | 18.3% | 3.3% | 0.0% | 1.7% | 1.25 |
| Electronic waste special events (round-ups) with small fees for monitors, etc. | 45.0% | 28.3% | 21.7% | 3.3% | 1.7% | 0.0% | 1.12 |
| Encourage / increase public/private partnerships in the City to increase recycling options | 33.3% | 31.7% | 25.0% | 0.0% | 0.0% | 0.0% | 0.98 |
| Banning the disposal of yard waste in residential trash | 18.3% | 16.7% | 28.3% | 15.0% | 13.3% | 5.0% | 0.12 |
| Banning the disposal of certain recyclables in the trash | 28.3% | 21.7% | 16.7% | 13.3% | 16.7% | 1.7% | 0.32 |

Q15. If the City chose to implement some of the above programs but it cost a little more, how much would you be willing to pay, per month, for the expanded service(s)?

| Monthly willingness to pay | |
|----------------------------|----------|
| Average | \$13.58 |
| Median | \$0.00 |
| Max | \$200.00 |
| Min | \$0.00 |

Q16. How likely would your business be to use expanded commercial services under the following conditions? If your costs went up...

| Answer Options | Very likely (90%) | Likely (75-90%) | More likely than not (51-75%) | Not likely (10-50%) | Won't use (0-10%) | Don't need service regardless of price | Don't know | Weighted average |
|----------------|-------------------|-----------------|-------------------------------|---------------------|-------------------|--|------------|------------------|
| \$10/month | 34.4% | 13.1% | 8.2% | 6.6% | 16.4% | 11.5% | 9.8% | 49.7% |
| \$20/month | 11.5% | 9.8% | 11.5% | 13.1% | 21.3% | 14.8% | 13.1% | 30.6% |
| \$40/month | 3.3% | 4.9% | 4.9% | 14.8% | 34.4% | 18.0% | 14.8% | 16.2% |
| \$60/month | 1.6% | 0.0% | 3.3% | 9.8% | 45.9% | 19.7% | 14.8% | 8.8% |

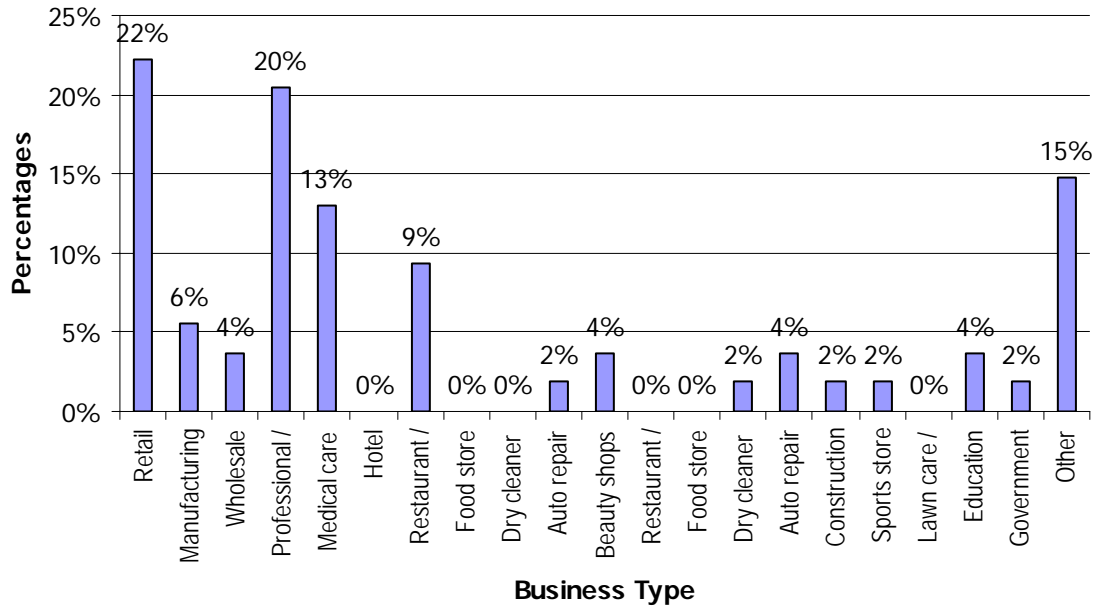
Q17. What is the best way to contact you regarding trash and recycling programs in Westminster?

| Answer Options | Response Percent |
|---------------------|------------------|
| City website | 20.4% |
| Mail | 83.3% |
| Bill inserts | 1.9% |
| Newspaper | 5.6% |
| HOA newsletter | 1.9% |
| Local TV ads | 1.9% |
| Radio announcements | 3.7% |

Q18. How many employees does your company have? (Average business size is 16.5 employees)(n=60)

| Answer Options | Response Percent |
|----------------|------------------|
| 1 | 3.3% |
| 2-4 | 46.7% |
| 5-10 | 26.7% |
| 11-15 | 6.7% |
| 16-20 | 0.0% |
| 21-30 | 5.0% |
| 31-50 | 3.3% |
| 51-100 | 1.7% |
| More than 100 | 6.7% |

Q19. Which of the following best describes your business? (n=54)



SECTION 7: HAULER INTERVIEWS

A total of 8 waste haulers were contacted to determine what services they offer residential and commercial accounts in Westminster. All haulers servicing the residential sector with the addition of Western Disposal which only serves a few select HOAs in the city were contacted via repeated telephone calls. If the haulers were unwilling to complete the interview over the phone a brief set of questions was sent to the hauler either via fax or email.

7.1: Trash and Recycling Rates

The monthly residential trash rates were obtained from all 8 haulers. The reported monthly cost for residential trash collection ranges from \$12.00 per month to over \$21.00 per month. None of the haulers reported that they were using a variable rate or pay-as-you-throw structure for billing¹². Typically the haulers allow the residents to dispose of a certain amount of bags of trash (or 32-gallon equivalents) and may or may not charge extra if the bag limit is exceeded. The bag limits were reported to be very high. For instance one hauler reported that residents could dispose of 10 bags of trash, 15 bags of leaves, and 15 bundles of yard waste per week. A few of the haulers reported that they use 96-gallon carts for trash collection but more often residents are allowed to use any container they want. Some haulers provide the option of purchasing a roll-cart for trash. The carts can cost as much as \$80.00. Trash collection days varied but most collect residential materials on Monday, Thursday, or Friday.

All of the haulers reported that they do offer residential recycling. Typically the haulers charged extra for residential recycling services. The exception to this was reported to be in HOA areas where recycling may or may not be included with the trash rates in the HOA fees. For haulers that do not include the cost of recycling in the trash rates recycling was reported to cost between \$2.25 and \$5.00 additional per month. Some haulers charge as much as \$15 for the purchase a recycling bin. One of the haulers partners with RecycleBank™, a recycling rewards company. RecycleBank™ provides participating households with coupons and other incentives based on the weight they set at the curb as a way to increase residential recycling participation.

All of the haulers reported that they do offer special item or bulky item pick-up. For bulky collection they ask that the residents call at least 24 hours ahead of their scheduled pick-up and inform the dispatch that they are planning on leaving a bulky item at the curb. The hauler then picks up the bulky item during the regularly scheduled trash day and either bills the customer an extra fee or requires that the customer leave a payment on the doorstep for the bulky collection. Special item pick-up was reported to cost between \$15.00 to over \$30.00 per collection depending on the hauler and the item.

Figure 7.1 displays the results of the completed hauler interviews.

¹² Three of the haulers do however offer PAYT in other communities they serve in Colorado.

Figure 7.1: Waste Hauler Interview Results

| | Contacted for Interview | Survey Sent (email or fax) | Survey Complete | % Residential Accounts | Offer Recycling Res. | % Participating Res. | Offer PAYT Res. | Offer Bulky Collection | How | % Commercial | Offer Recycling Comm. | % Participating Comm. |
|-------------------------------|-------------------------|----------------------------|-----------------|------------------------|----------------------|----------------------|--------------------|------------------------|--|--------------|-----------------------|-----------------------|
| Beeline Disposal | Yes | Yes | No | NA | NA | NA | No | NA | NA | NA | NA | NA |
| Best Cleaner Disposal | Yes | Yes | Yes | 5% or less | Yes | Not sure | No | Yes | For a fee, on-call basis | 95% | No | None |
| EDS Waste Solutions Inc | Yes | Yes | No | NA | Yes | NA | No | Yes | For a fee, on-call basis | NA | NA | NA |
| Packman Disposal | Yes | Yes | No | NA | Yes | NA | No | Yes | For a fee, on-call basis | NA | NA | NA |
| Republic/Allied Waste Service | Yes | Yes | Yes | 35% | Yes | 34% | Not in Westminster | Yes | For a fee, on-call basis | 65% | Yes | Very few |
| Waste Management of Colorado | Yes | Yes | Yes | NA | Yes | NA | Not in Westminster | Yes | For a fee, on-call basis | NA | Yes | NA |
| Your-Way Disposal Inc | Yes | Yes | No | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Western Disposal inc. | Yes | Yes | Yes | 100% | Yes | 100% | Not in Westminster | Yes | For a fee, on-call basis | 0% | NA | NA |
| Waste Connections | Yes | No | No | NA | Yes | NA | No | Yes | For a fee, on-call basis. Can collect on any day but charge added fee. | NA | NA | NA |

SECTION 8: GAP ANALYSIS

The figure below displays the results of the Westminster “gap” analysis. This analysis examines the overall MSW and diversion programs available to different sectors in the city and identifies those areas with the potential for improvement. Subsequently, it highlights possible barriers to additional programs in Westminster. The analysis was completed through interviews with city staff, a two week long set-out survey of residential disposal and recycling behaviors, over 60 commercial interviews, and interviews with the waste haulers serving the City.

Figure 8.1: Westminster “Gap” Analysis

| | Presence | Who | Description | Barriers and Incentives | Opportunities |
|------------------------------|----------|-----|---|--|--|
| Transfer Station or Landfill | No | NA | The City does not own or operate a transfer station or landfill. There are multiple near-by landfills include Denver Arapahoe Disposal Site (WM), Front Range Landfill (Republic), Denver Regional Landfill and Western Disposal Transfer Station among others. | Landfill space is not a barrier. Relatively low tipping fees make it more difficult to get haulers to recycle or reduce disposal. Multiple private disposal sites make it difficult for the City to determine how much waste (or recycling) is being generated in Westminster. | Despite the low tipping fees at the local landfills, it is possible for haulers to realize savings in the cost of recycling versus the cost of disposal. |
| MRF | No | NA | Boulder County MRF, WM Franklin Street MRF, and Alpine Waste and Recycling MRF are all located near-by Westminster and offer single-stream processing. | None | None |

| | Presence | Who | Description | Barriers and Incentives | Opportunities |
|---------------------|----------|------------------------------|--|---|---|
| Waste hauling | Yes | Multiple Private contractors | Open market waste hauling provided by privately operated haulers. Multiple haulers offer curbside recycling services, bulky collection services, and others. There is a license requirement and a requirement to offer residential recycling in Chapter 7 of the City code. All of the haulers contacted in the survey reported they did offer the service to residents. | The City currently has little control over the waste haulers serving the residential sector. In some neighborhoods there may be as many as 4 or 5 trash companies serving the same street on the same day while in HOAs there may be contracts for collection. Haulers do not report tonnage, accounts, rates, or other information to the City although it is included in the City code that they must . | Large opportunities exist to work with haulers to increase diversion in the City. Some of these include improved reporting mechanisms, PAYT rates, embedding recycling, incentives, and others. The haulers are able to provide more services if it makes sense economically. |
| Pay-as-you-Throw | No | N/A | Haulers are not using pay-as-you-throw or variable rates to charge for trash collection. Residents pay a flat monthly fee for trash service and do not realize savings (or cost increases) if they dispose of less (or more) trash. However, almost half of the haulers serving the city offer PAYT in <i>other</i> communities. | PAYT provides an economic incentive to recycle, reduce trash, and compost. Barriers include multiple haulers competing for service and without a level playing field, it does not make sense for a hauler to charge more than their competition. | There is a large opportunity for the City to increase diversion through the adoption of a PAYT program. A city-wide ordinance would create a level playing field for all haulers servicing the City and does not cause haulers to lose any accounts or residents to switch haulers. |
| Recycling drop-offs | Yes | City/Private partnership | Westminster has 7 recycling drop-offs (Muni. Service center, Rec center, Courthouse, Fire station) with 3-6cuyd containers for single stream recyclables. The annual costs for collection is around \$20K not including staff time estimated at around \$5K. SERA is working on finding the tonnage collected annually at the drop-offs. | There are issues with mess, contamination, too much staff time to maintain the sites, and overall costs of the drop-offs. Some residents have also expressed the desire for more drop-offs located throughout the community. | There may be opportunities to increase signage, reduce contamination, and conduct education/outreach to reduce staff time needed to maintain the current drop-offs. Other options will be explored to improve the existing drop-offs. |

| | Presence | Who | Description | Barriers and Incentives | Opportunities |
|----------------------------------|------------------|------------------|---|--|---|
| Tree Limb Drop-Off | Yes | City run program | The city accepts tree-limbs less than 6" in diameter and 8' in length from March to October at Stanley Lake. The materials are chipped and are made available for residents | None | Little opportunity to increase this program |
| Christmas Tree Recycling | Yes | City run program | The City offers an x-mass tree drop from Dec 26 to the end of January. The city is partnering with a local Boy Scout troop to do tree pick-up. | None | None |
| Bulky Collection | Discontinued | None | City used to offer a bi-annual program, cut it to annual, and has recently decided to discontinue the bulky collection service due to cost. Costs of the program in 2008 were ~\$455/ton of material which is relatively high for this type of program. | It was a very popular program that was reported to not pay for itself. All of the haulers do offer a bulky service for an added fee. | Residents are still able to dispose of bulky items , However it may cost more per collection to the residents than the City run program. It may be necessary to examine options to address illegal dumping if it becomes a problem in the spring. |
| Single Family Curbside recycling | Yes, but limited | Private company | All haulers are required to offer recycling in the City code. Only about 15% of Westminster residents are subscribing to recycling services. | Cost of program is a barrier. Only residents that really want to recycle or those in HOAs with recycling included in their contracts are recycling at the curb. Recycling service is not "embedded" in trash costs. Other barriers include small 18 gallon bins and differences in what materials are collected. | There are a number of opportunities to increase residential recycling that will be explored including PAYT, embedding recycling fees, outreach/education, larger containers, and others. |

| | Presence | Who | Description | Barriers and Incentives | Opportunities |
|---------------------------------|----------|-----------------|---|--|---|
| Home Owners Associations | NA | NA | There are over 100 single family HOAs in Westminster. HOAs often contract for trash services which may or may not include recycling. | HOAs can be a barrier to city-wide trash and recycling programs. HOAs may be in contracts that cannot be modified or may resist city-wide ordinances. HOA rate payers often do not see incentives for trash reduction if they pay a flat fee for their trash services in their HOA dues. | Many communities in CO have implemented various recycling and diversion programs working together with the HOAs to make them successful. Fort Collins, Boulder, and Lafayette have all used different techniques to implement PAYT with or without the HOAs involved. |
| Multi Family Curbside recycling | Yes | Private company | Available but not used by many multi-family residents. | Potential barriers include space, education and outreach for multi-family residents , and a lack of incentives to recycle, and language barriers. Property management companies and HOAs may play a large role in this sector. | There is an opportunity to increase access to recycling for multi-family units, increase space for recycling, other ordinances addressing the sector, and additional education. |
| Commercial Recycling | Yes | Private company | Service is available to businesses but a large portion is not enrolling. The larger businesses may be more prone to participate while small businesses are generally not recycling. | There is little to no incentive to participate in the program, recycling may cost more for some customers than trash disposal. Space is also an issue for many generators. | Commercial recycling programs are an option including shared dumpsters, combined routes, allowing small businesses to be on residential routes, ABC rule, etc. These will be explored further. |
| School Programs | N/A | N/A | TBA | TBA | Education programs, outreach , competitions, green teams, social marketing and other opportunities. |

| | Presence | Who | Description | Barriers and Incentives | Opportunities |
|-----------------------------|----------|--------------------------|--|--|--|
| Education/outreach | Yes | City | City distributes the Hard-to-Recycle guide, has a web-site, attends special events, is starting zero waste events, and other efforts. | Budgets and staffing. | There is an opportunity to increase the education/outreach. A current project with CDPHE is exploring outreach techniques in Broomfield to increase residential recycling through social marketing and other techniques. The results of the Broomfield project will transferable to Westminster. |
| Household Hazardous Waste | Yes | City/Private partnership | City administers all parts of the program except the actual pick-up of materials. The city offers year round collection of HHWs up to 2x month. The program is free to residents unless the pick-up is over 75lbs. | Costs of program are about \$.76/lb which is line with HHW programs around the US. | Uncover alternative funding opportunities. |
| E-waste | No | Private company | There is no official program to deal with electronics waste. There are private companies in the area that handle the material. | E-waste contains a number of toxic materials and the State is looking at programs to deal with the material. | Special events with private companies, disposal bans, product stewardship, and others. |
| Construction and Demolition | No | N/A | C&D makes up a large portion of the typical MSW stream. | No facilities or programs dealing with the waste stream. | This is a waste stream that may need to be addressed in-depth in the future. Options include deposits, requiring recycling, green points type programs, deconstruction options, etc. |
| Food/Yard Waste Collection | No | None | Not available at this time. However, a residential program may be possible in the future. | No program available at this time. | Yard waste typically makes up 12-18% of the residential waste stream and diversion/composting of the stream can greatly reduce the waste stream. Drop-offs, curbside programs, bans, etc. are all options to be explored. |

| | Presence | Who | Description | Barriers and Incentives | Opportunities |
|-----------------|----------|------|--------------------|--|--|
| Ordinances/bans | No | None | None at this time. | There is little regulation of trash and recycling hauling. | There are multiple opportunities for ordinances and/or material disposal bans including PAYT, space for recycling, e-waste, leaves, etc. |

The “gap” analysis helps to determine which aspects of Westminster’s waste management system have the greatest room for improved diversion and efficiencies. Table 1.2 highlights some of the strengths and opportunities of the city uncovered in the initial review and analysis.

Table 8.2: Strengths and Opportunities (gaps) of Westminster’s Waste Management System

| Strengths | Opportunities |
|---|---|
| <ul style="list-style-type: none"> • Strong “green” ethos among City staff and many of the residents and businesses. • Strong recycling and diversion infrastructure in place including multiple single stream MRFs, drop-offs, and haulers with the knowledge and ability to run effective diversion campaigns • Established and successful HHW program • Verbage in the current City code requiring hauler reporting • Some of the HOAs are including recycling in the trash rates and seeing significantly higher participation than non-HOA areas,(potentially as much as 2-3x higher participation) | <ul style="list-style-type: none"> • Work with haulers to encourage improved reporting of tons collected and recycled to develop a baseline diversion rate • Opportunity to set goals based on the current diversion rate • Examine ways to decrease contamination and costs at the drop-off areas • Participation in curbside recycling among residents is only around 15%. There is a great opportunity to increase residential participation in various ways including options such as Pay-as-you-throw, embedded recycling rates, and mandates. • The haulers are generally using flat rates for disposal fees ranging from about \$8/month to \$25/month. A PAYT program would increase diversion, composting and source reduction and create incentives for SF residents to participate • Examine programs for the curbside collection of yardwaste/organics materials • Multi-family programs such as space for recycling, increased outreach and education, and increased access to recycling to across the sector • Commercial recycling programs- “space for recycling” ordinance, including recycling in leases, shared recycling containers for clustered businesses, targeted materials, ABC rules, and others. • There is a large opportunity for increasing diversion in the C&D waste stream through various mechanisms and program options. |

SECTION 9: PROGRAM RECOMMENDATIONS

Following the review of the “gaps” and strengths of Westminster’s current programs, the input and program preferences of the residential and business surveys, and based on the data collected from the set-out survey and commercial survey, the following 26 potential program for the City of Westminster were drafted. The list is separated into five sectors:

- Construction and demolition
- Commercial
- Governmental
- Multi-family
- Residential

Table 9.1: List of Recommended Strategies

| Sector | Strategy / ID | Type | Description | Actors |
|--------|---|------------|--|---------------------------------|
| C&D 1 | C&D Dumpster Service | Ordinance | All new construction and significant remodels must have a trash and recycling bin on-site, whether or not they make use of the recycling bin is at their discretion. | City, builders |
| C&D 2 | Require space for recycling | Ordinance | Require space for garbage AND recycling in building codes in association with all new construction or (non-trivial) remodeling for commercial and multi-family buildings. | City codes department, builders |
| COM 1 | Require building/business recycling plans | Ordinance | Require all businesses and buildings to prepare recycling plans. These can be filed with haulers, city, or other entities. Some cities use checklists, others use more complex forms. Most require simple on-line forms. | Businesses |
| COM 2 | Require leases with recycling clauses | Ordinance | Encourage or require buildings to incorporate recycling requirements for tenant businesses or units into leases. This is a particularly good tool for public projects. | Businesses |
| COM 3 | Mandatory Menu of Choices | Ordinance | Mandate that businesses must recycle two or three of the items on a menu of recyclables. Menu choices could include glass, containers, paper, cardboard, scrap metal, concrete, etc.. Program would include recycling forms. | Businesses/haulers |
| COM 4 | Encourage recycling cooperatives | Assistance | Provide cooperative service / coordination for recycling of key materials (e.g. cardboard) for small businesses that might not otherwise get service. Grants to firms coordinating service could be provided. Coops also used successfully to buy recycled products. | Businesses, city, haulers |

| Sector | Strategy / ID | Type | Description | Actors |
|----------------|---|-----------|---|---------------------------|
| COM 5 | Bar and Restaurant Recycling- ABC Rule | Ordinance | All businesses with permits to consume alcoholic beverages on site must recycle all beverage containers. If they do not recycle the containers they cannot renew their permits | Businesses, city, haulers |
| COM 6 | Require haulers to offer commercial recycling as part of service agreements | Ordinance | Require haulers to offer commercial recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. | Haulers, businesses |
| COM 7 | Embedded recycling fees | Ordinance | Embed recycling costs in the garbage fee for all commercial units. All commercial entities pay for recycling service. | Haulers |
| Govt 1 | Multi-resource audits | Program | Waste audits can help develop tailored recommendations to increase recycling and reduce costs. Instead of waste audits only, work with energy utilities, water utilities and others to provide audits that help save multiple resources and save costs for the audits and provide a more useful combined audit for buildings. | City |
| Govt 2 | Set New Diversion Goal | Policy | Set a city diversion goal | City |
| Govt 3 | Education | Program | Expand current programs to inform residents and businesses of recycling option in City including drop-offs, bulky collection by haulers, web-based tools, and others. | City |
| Govt 4 | Environmentally preferable purchasing | Policy | Create a EPP guideline for all City purchasing and RFPs | City |
| Govt 5 | Drop-off site improvements | Program | Increased signage at existing drop-offs and increased education to limit contamination and mess. Consider locations of drop-offs and moving one to north end. | City |
| Govt 6 | Public area recycling | Program | Recycle bins in public areas and parks | City |
| Haulers 1 | Mandatory Reporting | Ordinance | Update existing ordinance to require all haulers to report tons collected and accounts on a semi-annual basis | Haulers |
| Multi-family 1 | Require leases with recycling clauses | Ordinance | Encourage or require property management companies/landlords to incorporate recycling requirements for tenants into leases. | Property mgrs |
| Multi-family 2 | Require building/business recycling plans | Ordinance | Require all MF buildings to prepare recycling plans. These can be filed with haulers, city, or other entities. Some cities use checklists, others use more complex forms. Most require simple on-line forms. | City, property mgrs. |

| Sector | Strategy / ID | Type | Description | Actors |
|----------------|--|-----------|---|--------------------------|
| Multi-family 3 | Require haulers to offer commercial / MF recycling as part of service agreements | Ordinance | Require haulers to offer MF recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. | Haulers, property mgrs. |
| Res 1 | Embed Recycling in Trash Fees | Ordinance | All HHS must pay for recycling. Include cost of recycling in trash rates. | Haulers, residents |
| Res 2 | PAYT / Variable Rates Ordinance | Ordinance | All Haulers must charge for residential materials by a base unit (32 gallons) and embed costs of recycling in trash rates. Provides an economic incentive to recycle, source reduce, and compost. Most effective residential program available. | City, haulers, residents |
| Res 3 | Yard waste | Program | Year round drop-off program for residents- no commercial allowed | City |
| Res 5 | Larger recycling bins | Program | Encourage or require haulers to provide larger recycling bins to customers | Haulers |
| Res 6 | Alternate weeks organics | Ordinance | Encourage or require haulers to provide alternate week organics collection | Haulers |
| Res 7 | RecycleBank™ Incentive Program | Program | Incentive based program that uses direct marketing to reward customers who recycle. Program adoption is based on agreements between private haulers and the RecycleBank™ company. | Haulers |

Detailed Analysis of Leading Strategies

SERA Researchers met with the City of Westminster Environmental Advisory Board (EAB) and representatives from the waste hauling companies serving the City to discuss and answer questions concerning the entire set of recommended programs. After a review of the recommended programs, the Environmental Advisory Board chose nine programs as the leading options to support the City Council’s environmental and recycling objectives¹³. If all of the programs were implemented, it is estimated that they would increase the total diversion rate by around 10-12% (the total diversion rate is the amount of the overall waste stream (includes single-family, multi-family, and commercial generators) that is diverted from disposal in the landfill). The residential diversion rate is estimated to increase by around 10-14%, bringing the total residential diversion to between 20-25%, approximately doubling the current residential diversion rate. For all of the program models, SERA used conservative estimates on diversion impacts. The table below displays the potential impact on the City’s diversion if all nine programs are implemented:

Figure 9.2: Potential Impacts on Diversion in Westminster

| Sector | Current Diversion | Estimated Impact | Estimated Total Diversion NEW |
|--------|-------------------|------------------|-------------------------------|
|--------|-------------------|------------------|-------------------------------|

¹³ SERA recommends that the City of Westminster consider additional programs from the list of options for future implementation. For example, the selected programs do not address yard trimmings and food waste or the construction and demolition waste, both of which are large contributors to the overall MSW stream.

| Sector | Current Diversion | Estimated Impact | Estimated Total Diversion NEW |
|--------------------------|-------------------|------------------|-------------------------------|
| Residential | ~10-11% | 10-14% | 20-25% |
| Commercial ¹⁴ | UNK | 12-14% | UNK |
| TOTAL | UNK | 10-12% | UNK |

The table below displays the estimated costs per ton for generators¹⁵ and the city for each program. The costs per ton numbers are useful for comparing the overall cost effectiveness for each program. A program that is modeled to cost \$450-\$500/ton is significantly less cost effective than one that costs \$100-\$150 per ton. The figure also displays the estimated average cost per generator (some generators may see larger impacts and some may see smaller impacts) and the annual impacts to the city's budget. The only program with potentially significant capital costs is the drop-off areas improvement program.

The table also displays the percentage of the stream that is diverted (i.e. the residential stream or the commercial stream), the percentage of the total generation that is diverted (includes all streams), and the estimated avoided GHG emissions from each program. Combined, the programs are estimated to avoid about 10,000 metric tons of carbon equivalents (MTCE) per year. This is the same as removing around 7,000 cars off the road per year¹⁶.

Table 9.2: Detailed Strategy Impacts

| Id | Program | Brief Description | Diversion Estimate (Tons) | Generator Cost per Ton | Cost per generator ¹⁷ | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|------|---------------------------------------|--|---------------------------|------------------------|---|-------------------|---------------------------|--------------------|---|-------------|----------------|----------|
| Com5 | Bar and Restaurant Recycling-ABC Rule | All businesses with permits to consume alcoholic beverages on-site must recycle all beverage containers. If they do not recycle the containers they cannot renew their permits | 1,300 | \$180-\$240 | \$150-\$250 per month per bar/restaurant | \$10-\$20 | \$14K-\$18K | \$190-\$260 | Costs per business vary depending on generator size, ability to recycle, and ability to reduce trash disposal | 3% | 1% | 1,000 |
| Com6 | Embed Recycling in Trash Fees | Embed recycling costs in the garbage fee for all commercial units. All commercial entities pay for recycling service. Most aggressive commercial | 5,100 | \$100-150 | \$20-\$40/month on average for all businesses in city | \$1-\$5 | \$26K-\$32K | \$100-\$155 | Costs to City are based on outreach and enforcement efforts needed, costs per business depends on size, type, and | 11% | 4% | 4,200 |

¹⁴ A commercial recycling rate cannot be estimated based upon the available data.

¹⁵ The generator is the entity impacted by the program. For instance, in the commercial ABC program (Com5) focused on holders of on-premise consumption of liquor permits, the generators are the bars, restaurants, and liquor stores. While under the residential pay-as-you-throw program (Res2), the generators are the households covered by the program. In some of the programs, the haulers may have increased costs (new carts or recycling bins, additional collections, etc.), but for the model SERA used assumption that in general the increased costs are passed on to the rate payer, or the generator. For example, in the residential PAYT program the model includes the estimated cost impacts of residents paying for new recycling carts or containers.

¹⁶ This estimate is based on US EPA passenger car annual GHG emission per year.

¹⁷ Generator cost is the *average* cost for the impacted generator. Residential programs will impact households and business programs will impact businesses.

| Id | Program | Brief Description | Diversi on Estimate (Tons) | Gener ator Cost per Ton | Cost per generator ¹⁷ | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|-------|---|--|----------------------------|-------------------------|--|---------------------|---|---|---|-------------|----------------|---------------------|
| | | program. | | | | | | | ability to recycle. | | | |
| Com7 | Require haulers to offer commercial recycling | Require haulers to offer commercial recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. Least aggressive program. | 400 | NA | Minimal | \$10-\$20 | \$4K-\$6K | \$10-\$20 | No generator costs per ton- Only generators that realize savings decreases in bills, or strong green ethos typically sign-up for this type of program | 2% | 1% | 320 |
| Govt2 | Set New Diversion Goal | Set a city diversion goal | NA | NA | None | NA | Minimal | NA | Does not lead to diversion by itself | NA | NA | NA |
| Govt3 | Education | Expand current programs to inform residents of recycling options in City including drop-offs, bulky collection by haulers, web-based tools, and others. | 700 | Minimal | None | \$75-\$150 | \$60K-\$70K (~\$1.5/h h/year) | \$75-\$150 | Costs and impacts are for a mid-level residential education program- includes some social marketing aspects | 1% | 1% | 570 |
| Govt5 | Recycling Drop-off improvements | Full set of options described in report. Options includes site improvements, operational hours and staffing, closing some or all locations, and new site development | -2,600 to 2,600 | Free | None | Depen ds on options | (\$33K)-\$100K (includes one-time capital improvements) | Depen ds on options . Current cost is \$10-\$15 | Impacts depend on what City decides to implement. Full set of options is described in detail in the report. | -3% to 4% | 3% | Depen ds on options |
| MF3 | Require haulers to offer Multi-family recycling | Require haulers to offer MF recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. | 60 | \$275-\$325 | \$1-\$1.50/HH/ month for participati ng MFUs | \$150-\$200 | \$9K-\$13K | \$425-\$525 | Estimates based on similar program in Colorado- low participation is anticipated | 0.1% | 0.1% | 50 |
| Res1 | Embed Recycling in Trash Fees | Haulers must include the costs of recycling in trash rates. All residents pay for recycling and are provided with recycling service. It is up to them whether or not they use the service. | 2,100 | \$550-\$600 | ~\$3/HH/M onth for all HHs in Westmins ter | \$1-\$5 | \$4K-\$6K | \$550-\$605 | Program costs are based on average per HH cost for curbside recycling across North America- with weight placed on western programs | 3% | 2% | 1,700 |

| Id | Program | Brief Description | Diversi on Estimate (Tons) | Gener ator Cost per Ton | Cost per generator ¹⁷ | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|------|-----------------------|---|----------------------------|-------------------------|---|-------------------|---------------------------|--------------------|---|-------------|----------------|----------|
| Res2 | PAYT / Variable Rates | Haulers must charge for residential materials by a base unit (32 gallons) and embed costs of recycling in trash rates. Provides an economic incentive to recycle, source reduce, and compost. Most effective residential program available. | 6,300 | \$100- \$145 | \$1- \$2/HH/month for all HH(some may see decreases in bills, some may see increases, some stay the same, and this is an avg.) | \$1-\$5 | \$4K-\$6K | \$100- \$150 | Tons diverted include recycling, composting, and source reduction. (Estimate is slightly lower than in other communities with PAYT due to limited yard waste diversion opportunities). Program costs are slightly higher than for other PAYT b/c limited HHs that already have recycling carts/containers | 9% | 5% | 5,100 |

A detailed review of the nine programs and their potential impacts on the City is covered in the remaining portion of this section. Many of the potential programs may be implemented through a city ordinance. Instead of passing multiple ordinances over time it may be advisable for the city to consider one or two ordinances covering trash and recycling in the City that contain regulations for the residential, commercial, and multi-family sectors.

Commercial Programs

The EAB chose three programs focusing on the commercial sector for further research and analysis. Combined, these three programs would divert between 2-4% of the total waste stream in Westminster and 12-14% of the commercial waste stream. Appendix 1 details some of the potential barrier to addressing the commercial sectors as well as best management practices in program adoption. The three programs are displayed in the figure below:

Figure 9.2: Commercial Programs

| Id | Program | Diversi on Estimate (Tons) | Gener ator Cost per Ton | Cost per generator ¹⁸ | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|------|---------------------------------------|----------------------------|-------------------------|--|-------------------|---------------------------|--------------------|--|-------------|----------------|----------|
| Com5 | Bar and Restaurant Recycling-ABC Rule | 1,300 | \$180- \$240 | \$150- \$250 per month per bar/restaurant | \$10- \$20 | \$14K- \$18K | \$190- \$260 | Costs per business vary depending on generator size, ability to recycle, and | 3% | 1% | 1,000 |

¹⁸ Generator cost is the *average* cost for the impacted generator. Residential programs will impact households and business programs will impact businesses.

| Id | Program | Diversio n Estimat e (Tons) | Gener ator Cost per Ton | Cost per generat or ¹⁸ | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Strea m | % of Total Gen | GHG MTCE |
|------|---|--------------------------------------|-------------------------------------|---|----------------------------|------------------------------------|-----------------------------|---|--------------------|----------------------|-------------|
| | | | | | | | | ability to reduce trash disposal | | | |
| Com6 | Embed Recycling in Trash Fees | 5,100 | \$100-150 | \$20-\$40/month on average for all businesses in city | \$1-\$5 | \$26K-\$32K | \$100-\$155 | Costs to City are based on outreach and enforcement efforts needed, costs per business depends on size, type, and ability to recycle. | 11% | 4% | 4,200 |
| Com7 | Require haulers to offer commercial recycling | 400 | NA | Minimal | \$10-\$20 | \$4K-\$6K | \$10-\$20 | No generator costs per ton- Only generators that realize savings decreases in bills, or strong green ethos typically sign-up for this type of program | 2% | 1% | 320 |

Bar and restaurant Recycling- ABC Rule (COM 5)

Percent of stream- 3%
Percent total generation- 1%
Cost per ton- \$190-\$260

This program recommendation is based on the ABC bottle bill, a State of North Carolina law which was passed in 2007 and which went into effect January 2008. The bill affects all holders of on-premise alcohol permits in North Carolina, approximately 8,000 businesses. The bill states that all permit holders must separate, store, and provide for the collection of all recyclable beverage containers. Collection can be completed through drop-off recycling, contracting for collection, or in some areas the local government provides for collection. If the business fails to recycle, they will not be allowed to renew their liquor license the following year.

Originally the bill was slated to say that the businesses would have their license revoked but upon negotiations with the restaurant/bar industry it was changed to say they could not have it renewed. The estimated tonnage statewide generated by the program exceeds 30,000 tons and it was reported that 10 new collectors, processors, or end-users have moved into NC as a result of the bill. SERA recommends Westminster adopt an ordinance similar to the North Carolina law.

How it would work in Westminster: The City would need to pass an ordinance requiring that all holders of on-site liquor permits must recycle all of their bottles and containers as part of their liquor license requirements. SERA recommends following a similar course as North Carolina in that Westminster does not revoke any existing

licenses but instead refuses to renew licenses for non-compliant businesses. Enforcement would either fall on the shoulders of existing city code/alcohol enforcement staff or be a responsibility of the Environmental Services division. As with any program, enforcement and education are integral to the ultimate success and efficacy.

Why it works: There is a very strong, built-in enforcement mechanism. If businesses do not comply, they are not able to renew their liquor licenses. The regulation looks at a known waste stream and ensures that it is diverted.

Pitfalls: It does not address the entire commercial sector and only targets the bars and restaurants. In North Carolina, representatives of the industry trade group reported that they were being unfairly targeted, if they have to recycle, all businesses should have to recycle. It will be important that the City work closely with the program stakeholders (haulers, bar and restaurant owners, property managers, and others) and explain to the bar and restaurant sector that other businesses and sectors (multi-family, single family, governmental) are working together to increase diversion in the City.

Potential Impacts: It is estimated that this program would directly impact nearly 220 businesses in Westminster (not including haulers) and would increase the overall diversion in the City by about 1%. It would increase the diversion in the commercial stream by around 3%. The costs to the City are low while the costs to the generators (the bars and restaurants) may be in the mid to high range (perhaps \$150 to \$250) per month.

Require Hauler to Offer Recycling (COM 6)

Percent of stream- 2%

Percent total generation- <1%

Cost per ton- \$10-\$20

This is the least aggressive of the three commercial strategies chosen by the EAB and may be a good “bridge” from current practices to the next strategy, embedding recycling service fees in commercial trash rates. Under this program all haulers serving the commercial sector in Westminster must offer recycling services to businesses that request the service. There is already a city-wide ordinance in Westminster requiring that all haulers must offer recycling to the residential sector, however, it currently does not cover the commercial sector under this program. Businesses are not mandated to sign-up for service and the program does not set any restriction on what haulers charge for recycling service. This is both a positive and a negative attribute of the program. Since there is no requirement for participation, participation is typically low. Only businesses that may see a decrease in their trash bill due to recycling (those that can reduce the size or frequency of trash collection) and/or businesses with a strong green ethos will participate in this program. This also means that it is a relatively easy program to put in place. There is little reason for business owners to object to the program as they are under no requirement to participate, and haulers often see the program as an income opportunity.

Enforcement is completed by the City either through a clause in the ordinance that allows for annual audits of hauler records to assure they are offering the service or through random inspection calls to the hauler to see if they are offering recycling to all businesses. Typically, communities with this program also use an on-call enforcement mechanism as well. Enforcement only takes place if a business calls in and tells the city they are having trouble getting recycling service even though they requested it.

How it would work in Westminster: The program would be implemented through an ordinance or city code, similar to the existing language requiring all haulers to offer residential recycling upon request. Enforcement would be on the shoulders of Westminster staff and could be through an on-call basis or a more aggressive auditing or proactive method.

Why it works: The program increases the access to recycling and makes recycling available to any business that wants to participate.

Pitfalls: Although access to recycling service is increased, typically only businesses that can save money through recycling or those with a strong green ethos will participate. The program also does not help reduce potential costs to businesses. If all businesses are receiving recycling service (see the next program) the hauler can realize economies of scale and potentially all businesses can see a slightly reduced recycling cost.

Potential Impacts: The program would apply to all businesses in the City however only those that choose to participate would see changes in costs or services. The program would divert around 1% of the total waste stream at a total cost of around \$10-\$20 per ton.

Embed Recycling in Trash Fees (COM 7)

Percent of stream- 11%

Percent total generation- 4%

Cost per ton- \$100-155

The most aggressive commercial strategy will also result in the largest impact on the waste stream. By embedding the costs of recycling in commercial trash fees, all commercial generators will be given the chance to recycle and those that choose to do so will, in general, see a lower monthly trash bill¹⁹. This type of program is quite popular in the west coast including California and Washington and a number of counties, cities, and even states around the country are rapidly adopting programs like this to address the commercial sector. The entire state of New Jersey has mandatory commercial recycling and the California legislature has adopted a mandatory commercial recycling law which goes into effect next year. Despite the movement toward commercial recycling, it is a difficult sector to address and it potentially may be best for Westminster to phase in this strategy.

Similar to the other two commercial programs in this section, this program would be adopted through an ordinance. The city does have the power to require the program through an ordinance but may not contract for commercial services under Colorado statutes. The ordinance would cover the following issues:

- **Rates-** require that all haulers serving commercial accounts in Westminster provide recycling with trash service with the fees for recycling included in the overall trash rates. SERA prefers that the ordinance specify that the recycling fees are completely embedded, not line itemed in the trash bill. The ordinance may NOT address the actual rates that are charged by the haulers. This is completely up to hauler discretion and by Colorado law cities or counties may not set rates.

¹⁹ Commercial generators with the minimum level of trash service may not receive a price incentive to recycle. Larger generators have the opportunity to recycle more and reduce their level of trash service (lowered collection frequency or smaller sized containers) but the smallest generators are already on the lowest level of trash service and may not be able to reduce their trash costs through increased recycling.

- *Recycling*- the ordinance should include language specifying the amount of recycling that must be included in the trash rates. SERA recommends using either a 50% recycling requirement (if a business contracts for 6cuyds of trash service per week they are also given 3 cubic yards of recycling service) or a 100% requirement (equal trash and recycling service)²⁰. It should also cover what materials are considered recyclables and what should be collected.
- *Enforcement*- The ordinance should include language on enforcement and a mechanism to do so. A typical mechanism is to allow the city to request records from the hauler showing trash and recycling service levels for commercial accounts. Without any “teeth” the program will not work.
- *Education/outreach*- Provision that haulers must advise new and existing accounts about the recycling services they provide at least bi-annually. The City should also help in this effort so the entire burden of outreach does not fall on the haulers.

How it would work in Westminster: The City passes an ordinance requiring all haulers serving commercial accounts in the City to provide a minimum level of recycling service with the costs of the service embedded in the trash rates.

Why it works: The program gives all commercial generators in the City the chance to recycle. Whether or not they choose to do so is entirely up to the generator, however they will all be paying for the service and those that choose to recycle will generally have a lower trash bill than does that do not.

Pitfalls: There are a number of possible pitfalls that must be addressed when implementing this program. These include:

*Space for recycling*²¹ - The lack of space to store recycling and trash containers is a real issue for a number of businesses. The City must work closely with the haulers and generators to find the best place to store trash containers, look at existing city codes covering enclosures to ensure they are not too restrictive (if applicable), and remind haulers and generators that they can use 96-gallon roll carts for service if larger containers do not work.

Enforcement- While judging whether or not generators have recycling bins is relatively easy (a drive-by windshield survey should suffice) knowing what level of recycling service is more difficult. If the ordinance requires a 50% service level for recycling the City needs to see the size of container *and* the frequency of collection to determine whether haulers are providing the required level of service. SERA suggests a mechanism in the ordinance that allows the City to audit hauler records to ascertain compliance.

Costs- The program will increase costs for most generators. The City must work with relevant stakeholders and make them aware of the program’s goals and why costs for trash service will increase. Commercial generators will now be receiving two services, both trash and recycling, and will have to pay for both services (although the recycling costs are embedded in the trash fees). By working closely with the stakeholders to inform them of the program process, as well as conducting outreach to let generators know how they can save money through recycling, this barrier may be addressed.

²⁰ More aggressive communities require a 150% recycling service (2 cuyds of trash and 3 cuyds of recycling).

²¹ SERA recommends that the City consider adopting the Require Space for Recycling (C&D2) program from the recommended program list if Westminster decides to go forward with embedding recycling rates in trash rates for commercial accounts. The required space for recycling program will help overcome the barrier of lack of space for recycling containers in all new and significant remodel construction projects.

Potential Impacts: The program is estimated to increase diversion in the commercial sector by around 11% and would increase the overall diversion in Westminster by about 4%. It would impact all of the businesses in the City and the average costs per business may be in the range of around \$30/month per business. However, some businesses may realize cost savings, some may see no change in costs, and others may see significant increases in costs.

Government Programs

The three governmental programs include adopting a new diversion goal (no additional diversion), increased education and outreach (about 1% increase in overall diversion), as well as research into recycling drop-off area improvements. The figure below displays the potential impacts of the three programs:

Figure 9.3: Impacts of Governmental Programs

| Id | Program | Diversi on Estimate (Tons) | Gener ator Cost per Ton | Cost per generator | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|-------|---------------------------------|----------------------------|-------------------------|--------------------|---------------------|---|---|---|-------------|----------------|--------------------|
| Govt2 | Set New Diversion Goal | NA | NA | None | NA | Minimal | NA | Does not lead to diversion by itself | NA | NA | NA |
| Govt3 | Education | 700 | Minima l | None | \$75-\$150 | \$60K-\$70K | \$75-\$150 | Costs and impacts are for a mid-level residential education program- includes some social marketing aspects | 1% | 1% | 570 |
| Govt5 | Recycling Drop-off improvements | -2,600 to 2,600 | Free | None | Depen ds on options | (\$33K)-\$100K (includes one-time capital improvements) | Depen ds on options current cost is \$10-\$15 | Impacts depend on what City decides to implement. Full set of options is described in detail in the report. | -3% to 4% | 3% | Depen ds on option |

Set New Diversion Goal (Govt2)

Percent of stream- NA

Percent total generation- NA

Cost per ton- NA

Setting a new diversion goal in and of itself will not lead to additional diversion. Setting a goal will give the city, its residents, and its businesses something to aim for and will also provide a justification for the implementation of some of the other programs. If the city adopts a recycling/diversion goal, it will be able to tell the businesses and residents that they are adopting other programs (PAYT, commercial recycling) as a means of reaching its new diversion goal. It

also provides the city with a benchmark for progress. It is integral that the city have a baseline rate and continue to measure its recycling and diversion rates at least annually to understand progress toward the diversion goals.

Options for a diversion goal vary. For instance, Boulder County has adopted a very aggressive zero waste resolution while Superior has adopted a less aggressive 50% diversion goal. The town of Vail has taken another approach and has adopted a goal of reducing the amount of waste going into the landfill. States such as Florida, Oregon, and Massachusetts have adopted statewide diversion goals (in the case of Florida it is 75%). When setting a goal the City of Westminster should choose a diversion rate and a year by which they aim to reach the goal (i.e. a 50% diversion by 2015). Another option that can be combined with the diversion goal is a per capita generation or disposal goal. Some of the more progressive communities in North America have begun to look at per capita waste generation and disposal as a meaningful metrics and goal setting tools because they take into account source reduction. By setting a per capita generation or disposal goal the city can measure progress not only of the materials that are recycled and sent to the landfill, but also efforts to purchase in bulk, purchase items with less packaging, at home composting, and reductions in overall consumption and disposal. An example of a per capita generation goal could be to reduce the per capita generation of MSW by x% by 2015. A per capita disposal goal would be similar (and slightly easier to measure) and could be a goal of X.Xlbs of material disposed per person per year by 2015.

How it would work in Westminster: The City council passes a resolution to setting a diversion goal and (if the city wants to) a per capita generation or disposal goal.

Why it works: Setting a goal provides a benchmark for progress and a justification for the implementation of other programs.

Pitfalls: Once the goal is set, the City must enforce the hauler reporting rules that are already in the city code and work with the haulers to report tonnage collected and diverted. Without proper measurement the City will not be able to measure progress toward the goal.

Impacts: No direct impacts expected

Increased Outreach and Education (Govt3)

Percent of stream- 1%

Percent total generation- 1%

Cost per ton- \$75-\$150

Previous research by SERA Inc. into the best practices in waste diversion in the leading cities in North America uncovered that outreach and education was one of the most important aspects of nearly all successful diversion programs²². With the implementation of any new program making the parties that will be effected by the program aware of the program, its goals, how to participate, how to save money on bills, and penalties for non-compliance is integral. Beyond just outreach related to the implementation of the new programs in this report, an overall residential recycling education campaign is suggested. Additionally, the residential web survey conducted for this project indicated a low level of satisfaction among residents with the existing outreach efforts undertaken by the city and 80% of the residents responding to the survey

²² Skumatz, Freeman, Gordon, 2007 North American Waste Management Systems Study: Outstanding Communities and Programs in North America and Beyond, SERA Inc. 2007. Prepared for Metro Vancouver, British Columbia

supported additional outreach and recycling education efforts. The City of Westminster can choose to do a more traditional outreach program or a community based social marketing outreach program.

SERA is currently completing a study into the best practices in social marketing and outreach in Broomfield, CO for the CDPHE. An end result of the Broomfield project will be a template and “how-to” guide for other cities in Colorado that are interested in using social marketing to increase recycling. Social marketing is the practice of using a systematic approach applying sociology and classic marketing tools to change targeted behaviors in this case, recycling. The tools used include social norms, prompts, feedback, incentives, new media, and others. The toolkit (which will be available to Westminster this summer) will include the estimated costs, impacts, FTEs needed, and a step by step guide on how to conduct the outreach. Westminster could also use more classic outreach tools including the website, mailers, public meetings, multi-lingual flyers, and others.

How it would work in Westminster: The City could undertake a more traditional outreach approach using multi-media outlets, public meetings, mailers, and other tools or Westminster could use a social marketing outreach approach. The SERA/CDPHE report documenting how to conduct a full social marketing outreach campaign will be available to Westminster in the late summer 2010.

Why it works: A statistical analysis of education and outreach impacts on the recycling conducted by SERA has shown that outreach has the potential to increase diversion by around 1-3% points depending on the level of outreach and the dollars spent per household²³.

Pitfalls: Outreach and education can be an expensive program and a difficult program to measure the impacts of. Identifying the barriers to recycling, the motivations to recycle, and developing an outreach message to overcome the barriers and hit on the motivations can help return a significant impact for the amount of staff time, effort, and costs it takes to implement a proper outreach campaign.

Impacts: It is estimated that the outreach campaign will divert around 1% of the overall waste stream at a cost of \$75-\$150 per ton. The costs would be paid by the City and are in the range of \$1-\$2 per household per year.

Recycling Drop-Off Improvements (Govt5)

Please refer to section 11 of the report which is dedicated to this subject.

Residential Programs

Both the single family residential programs and the one multi-family residential program are combined in this section. Overall, if implemented these programs would result in an increase in recycling and diversion of about 5-6% in Westminster. The residential recycling rate would increase from a current estimated rate of 10-11% to around 20-22%, slightly above the State average. The figure below displays the residential programs and their estimated impacts and costs:

²³ Skumatz, Lisa, Evaluating the Impact of Recycling Education. Resource Recycling, August 2001

Figure 9.4: Impacts of Residential Programs

| Id | Program | Diversi on Estimate (Tons) | Gener ator Cost per Ton | Cost per generator | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|------|---|----------------------------|-------------------------|---|-------------------|---------------------------|--------------------|---|-------------|----------------|----------|
| MF3 | Require haulers to offer Multi-family recycling | 60 | \$275-\$325 | \$1-\$1.50/HH/month for participating MFUs | \$150-\$200 | \$9K-\$13K | \$425-\$525 | Estimates based on similar program in Colorado- low participation is anticipated | 0.1% | 0.1% | 50 |
| Res1 | Embed Recycling in Trash Fees | 2,100 | \$550-\$600 | ~\$3/HH/M onth for all HHs in Westminster | \$1-\$5 | \$4K-\$6K | \$550-\$605 | Program costs are based on average per HH cost for curbside recycling across North America- with weight placed on western programs | 3% | 2% | 1,700 |
| Res2 | PAYT / Variable Rates | 6,300 | \$100-\$145 | \$1-\$2/HH/month for all HH(some may see decreases in bills, some may see increases, some stay the same, and this is an <i>avg.</i>) | \$1-\$5 | \$4K-\$6K | \$10-\$150 | Tons diverted include recycling, composting, and source reduction. (Estimate is slightly lower than in other communities with PAYT due to limited yard waste diversion opportunities). Program costs are slightly higher than for other PAYT b/c limited HHs that already have recycling carts/containers | 9% | 5% | 5,100 |

Require Hauler to Offer Multi-Family Recycling²⁴ (MF3)

Percent of stream- .1%

Percent total generation- .1%

Cost per ton- \$425-\$525

This program is similar to the Com8 program “require haulers to offer commercial recycling”. Haulers would inform all of their multi-family accounts that recycling service is available upon request and if the property managers or owners want to pay for service they can get it. The program does not embed the costs of recycling and does not address rates in any way. The

²⁴ For the modeling purposes multi-family units were considered to be buildings with 5 or more units.

diversion estimate for the program is relatively low due to the potential high costs of recycling service. Based on other communities with similar programs the percentage of multi-family buildings that decide to participate is low. However, this is a first step in reaching the difficult multi-family sector. Some of the issues unique to the sector that make it more difficult to address include:

- **Lack of space:** The lack of space for recycling bins next to trash carts is a common barrier. Older units may not have been designed to include space for recycling and there may not be adequate space next to the trash bins. If either the trash or recycling bins are significantly more convenient than the other, contamination may be a serious issue to contend with. When disposing of materials studies have found that if the recycle cart is right next to the entrance/exit and the trash cart is located at the other end of the parking lot, residents may tend to throw both trash and recycling in the recycling cart²⁵. The opposite is also true²⁶.
- **High turnover, lack of awareness, and language barriers:** Residents in MFUs tend to move more often, report that they are unaware of the recycling practices in their building, and the materials that are recycled, the process to recycle them, and where and when to do so often varies from building to building. Property managers also report that there may be a significant language barrier that must be overcome.
- **Anonymity-** With a MFU dumpster trash and recycling disposal is anonymous. It is difficult to identify which unit is disposing of what material and which unit is or is not recycling.
- **Lack of Economic Incentives:** Unlike the single family residential sector where each HH sees a trash bill, MFUs do not see their trash bills and have little economic incentive to recycle.

There is a significant opportunity to address the MFU sector but it may take more time than the single-family units Overall the MF sector remains a slightly more difficult sector to address than the SF sector. Requiring all haulers to offer recycling is a good first step. Future program's to address the sector could include embedding recycling rates in trash rates and targeted outreach and education.

How it would work in Westminster: The City passes an ordinance requiring that all haulers offer all multi-family accounts recycling service if requested. The ordinance does not address rates or fees.

Why it works: Although only a small portion of the multi-family units are predicted to sign-up for the program, this is a good first step to address the sector. Under this program any multi-family property manager or owner that wants to recycle and is willing to pay for the service can get recycling service.

Pitfalls: Only multi-family properties with a strong desire to recycle will participate under this program. The recycling service will most likely be at a significant cost and in most cases the property will not be able to save money through recycling. The potential barriers that make the sector more difficult to address include lack of space, high turnover, language barriers, anonymity, lack of economic incentives among others.

²⁵ Skumatz, Lisa and Green, John. *Moving on Up- Strategies for Increasing Multifamily Recycling*. SERA Research Report 9989, 1999

²⁶ ²⁶ SERA recommends that the City consider adopting the Require Space for Recycling (C&D2) program from the recommended program list. The required space for recycling program will help overcome the barrier of lack of space for recycling containers in all new and significant remodels in multi-family construction projects.

Impacts: The program is estimated to divert about .6% of the total waste stream at a cost of around \$425-\$525 per ton. Most of the costs would be paid by the property managers that sign-up for the recycling program and are assumed to be passed on to the tenants.

Embed Recycling in Trash Fees (Res1)

Percent of stream- 3%

Percent total generation- 2%

Cost per ton- \$550-\$605

Under this program the City of Westminster passes an ordinance requiring all haulers servicing the residential sector to embed the cost of recycling in the trash fees. This program has a much higher cost per ton than the next program, residential pay-as-you-throw, because: 1) the diversion is not as high so the costs per ton is much higher 2) unlike PAYT which allows some residents to see lower trash rates because they recycle more, this program will see a slight increase in all generators trash fees. Every household will now be receiving both trash and recycling service and will have slightly higher bills (with the exception of HHs in HOAs that already have recycling rates embedded in trash fees). This is a common and moderately effective program. Over 25% of the City reports that they already have recycling rates embedded in their trash fees. Passing an ordinance expanding this service to the entire city would have a large impact on the diversion, however it would have higher per ton costs and lower diversion than a pay-as-you-throw program.

How it would work in Westminster: The City passes an ordinance requiring that all haulers must embed the costs of recycling in the residential trash rates. The ordinance should set forward a minimum size recycling container, minimum collection frequency (at least every other week) as well as a list of approved residential recyclables. The ordinance language should specify that the rates are fully embedded, not line itemed, in residential bills. Generators would pay slightly more per month but would receive an added service. Enforcement would be conducted by the City and would require the City ensuring that all haulers are embedding the recycling fees in their trash rates. SERA recommends including auditing/enforcement language in the ordinance.

Why it works: All residents are required to pay for recycling and have full access to curbside recycling. It is up to them whether or not they choose to participate.

Pitfalls: Although this program guarantees access to curbside recycling for all single-family households in the City, it does nothing to encourage participation. A PAYT option is preferable as it not only embeds the cost of recycling in residential trash rates, it also give residents an economic incentive to recycle.

Impacts: It is estimated that this program would increase diversion in the sector by around 3% and the overall diversion in Westminster would increase by about 2%. The costs however, are quite high at around \$550-\$605/ton. The cost per household is estimated to be around \$3/month.

Pay-As-You-throw or Variable Rates (Res2)

Percent of stream- 9%

Percent total generation- 5%

Cost per ton- \$100-\$150

Pay as you throw (PAYT; also called variable rates, volume-based rates, and other names) provides a different way to bill for garbage service. Instead of paying a fixed bill for unlimited collection, these systems require households to pay more if they put out more garbage – usually measured either by the can or bag of garbage. Paying by volume (like you pay for electricity, water, groceries, etc.) provides households with an incentive to recycle more and reduce disposal. PAYT has been statistically shown to be the single most effective program a city can implement to increase residential diversion and is currently in place in over 7,100 communities nationwide²⁷. PAYT has a three-fold effect on residential diversion. By charging less for less trash disposed, and more for more trash disposed, PAYT encourages recycling, source reduction, and at-home composting. A detailed explanation of how PAYT would work for Westminster, sample ordinances, contract language, and implementation steps can be seen in the following section.

How it would work in Westminster: SERA recommends that city of Westminster pass ordinance requiring PAYT trash rates. Several cities in the Front Range (Lafayette, Louisville, and Golden) have contracted for single hauler services to provide PAYT which is another option. However, in Westminster's current situation an ordinance may be preferable. Pros and cons of ordinances and contracts can be seen in the next section of the report and the final decision on how to implement should be based on local preferences and politics. An ordinance for PAYT should contain language covering the following items:

- ❑ **Safety Issues:** Requirements for truck and operator safety issues, avoiding leakage, etc.
- ❑ **Recycling Opportunities:** All haulers providing service within Westminster's boundaries must:
 - 1) offer curbside recycling to every entity subscribing to garbage service;
 - 2) provide recycling service at least every other week;
 - 3) must collect at least a base set of materials that the community lists and
 - 4) must provide recycling container(s);
- ❑ **Fees and PAYT:** The cost of the recycling program **must be embedded** in the trash rate, with no separate charge, fee, or line-item for recycling. The cost for trash service must be in a PAYT structure. The ordinance should contain language setting up minimum container sizes and rate structure²⁸
The community should establish auditing rights.
- ❑ **Reporting and Audit Authority:** Westminster should require haulers to report the trash and recycling tons collected within the community's boundaries, with reporting at least quarterly.
- ❑ **Educational responsibilities:** The community should designate minimum requirements for frequency of recycling education

Under an ordinance situation, it is up to the individual trash haulers in Westminster to determine how they would administer the program. The most common program in the Front Range is a variable can size system. In a variable can program residents sign-up for a certain size trash can/cart (typically 32, 64, and 96-gallons) and the larger the size, the more they pay. The trash fees cover unlimited recycling service and weekly trash collection. With unlimited recycling and limited trash, residents are encouraged to

²⁷ Skumatz, Lisa and Freeman, David Juri. *Pay As You Throw in the US: 2006 Update and Analysis*. EPA Office of Solid Waste, Washington DC

²⁸ The ordinance cannot set rates, only rate structures according to Colorado state statutes

dispose of less trash and recycle and divert more. An example of a typical pricing structure is a 32-gallon cart for \$10/month, a 64-gallon cart for \$18/month, and a 96-gallon cart for \$26/month. Details on pricing, ordinances, contracting, and implementation can be seen in Section 10 of this report.

Why it works: PAYT encourages source reduction, composting, and recycling by using economic incentives and signals. Incentive based recycling programs (i.e. providing coupons or store discounts based on recycling weights) are effective programs at increasing recycling but unlike PAYT, have no impacts on source reduction or composting. By charging higher rates for higher amounts of trash disposed, PAYT sends a clear economic signal to rate payers (similar to an electric bill) that the more services they consume the more they pay. It is also perceived as a fair and equitable program in communities in which it is adopted. It does not mandate participation in recycling, but it does encourage it through price signals. It also allows small generators (i.e. elderly residents with no children, conscientious recyclers, and others) to pay less because they are using less trash service.

Pitfalls: Some of the potential issues with PAYT include political acceptance, rate setting issues for haulers, perceptions of increased illegal dumping, low income families, and elderly/small generators. All of these barriers can be avoided through well thought out implementation and are addressed in more detail in the next section.

Impacts: PAYT has the potential to increase diversion in Westminster's single family residential sector by around 9-10% and can increase the overall diversion in Westminster by around 5%. The program is estimated to cost around \$100-\$150/ton. The costs per household would be around \$1.50 per month to pay for the new recycling bins/carts. For households that already have recycling carts and bins this cost would be lower. Some households would pay less under PAYT (the ones that recycle a lot), some would see no change in rates, and some would see an increase in their trash rates (those that choose not to recycle).

Getting To 50% or Higher

For the City of Westminster to reach a diversion rate beyond the level that is estimated to be reached through the implementation of the nine programs listed above, SERA recommends adopting additional programs from the list of recommendation strategies (Table 9.1). While the EAB has chosen some of the strongest and most aggressive programs, the list of strategies in the detailed analysis does not contain programs addressing the construction and demolition stream or organics. According to the US EPA 2008 Report "Municipal Solid Waste in the United States", slightly over 25% of the MSW stream is made up of yard trimmings and food scraps alone. This is a stream that could be addressed in future programs and one that would have a significant impact on diversion. Yard waste drop-offs, composting education programs, and a yard waste curbside collection program are all potential programs to consider for the future. The City of Louisville recently adopted a curbside yard waste collection program and in the first 8 months of the program has collected an average of 36lbs of yard waste per household per month. The City of Loveland has a 53% overall diversion rate, one of the highest in Colorado, and about two-thirds of their total residential diversion is from yard trimmings! Loveland reports that their residential recycling only accounts for around one-third of their diversion.

The C&D waste stream is a slightly harder stream to address but one that makes up a large portion of what is thrown in the landfill. A detailed report studying what makes up municipal waste by the California Integrated Waste Management Board in 2004 found that nearly 22% of the MSW stream is made up of construction and demolition debris²⁹. The National Association of Home Builders reports that 80% or more of the typical waste generated during home building and reconstruction can be diverted for beneficial reuse or recycling. These two sectors together, organics and C&D, are potentially exciting areas for future programs in Westminster and ones that will have a drastic impact on the overall diversion.

Zero Waste

Nationally (and locally), zero waste community and county goals/resolutions are increasing in popularity. Communities use zero waste as a goal, knowing that actually getting to 100% diversion may be impossible, but getting as close to zero waste as they can is the goal. The City of San Francisco has adopted a zero waste resolution and currently has a diversion rate of about 75%. Zero waste plans look beyond conventional recycling streams, yard waste, and C&D and often include strong elements focusing on producer responsibility, hard-to-recycle materials, HHWs, electronics waste, and others. If zero waste is decided on as a viable goal for the City in the future, a much broader scope of diversion options and waste streams must be examined. Adopting a zero waste goal/resolution is a direction that Westminster may want to consider as the City moves forward on its path toward greater diversion and environmental responsibility.

²⁹ *Statewide Waste Characterization Study*, December 2004. Cascadia Consulting

SECTION 10: PAY-AS-YOU-THROW IMPLEMENTATION

The following section covers some of the basic steps for PAYT implementation, the pros and cons of ordinances and contracts, information on rate setting, and sample ordinance and contract language.

Ordinance versus Contracting

There are three main ways to implement PAYT programs:

- *Municipal collection-* A city can choose to take over trash collection themselves, purchasing a collection fleet, hiring FTEs, and all of the associated administration and O&M. This is not a recommended option for Westminster.
- *Ordinance-* Local governments may pass an ordinance/licensing requirements requiring all haulers to follow certain guideline including setting PAYT rate structures. This is the recommended strategy for the City of Westminster to use for implementation.
- *Contracting-* Local governments may contract for trash services. Although not the recommended strategy, information on contracting is included. Most recently Louisville, Lafayette, and Golden have contracted with a single hauler to provide trash and recycling services with PAYT.

Although all three methods are viable means of implementing PAYT, at this time the ordinance is the most attractive option for Westminster. What route Westminster chooses depends greatly upon local preferences and politics. The pros and cons of both ordinances and contracts are discussed below:

The advantages of an ordinance include:

- *It is quicker to implement:* Unlike contracting in which an RFP process is required (a few months notice for eligible haulers to bid, choosing the winning bid, and completing contract negotiations) an ordinance can be passed in quite literally, one city council meeting.
- *Market competition:* An ordinance does not favor one hauler over another. It creates a level playing field for all haulers operating in Westminster and does not give an advantage to one or the other. It also allows haulers to retain their current accounts as long as they meet the ordinance requirements.
- *Residential choice:* Contracting limits residential choice of haulers to the one contracted hauler. Under an ordinance the residents are still able to contract with whichever hauler they choose.
- *Administrative burden:* Once the ordinance is passed, the level of administrative involvement for the city may be minimal. Depending upon the pre-determined enforcement mechanisms, reporting, outreach/education requirements, and other aspects of the ordinance, there could potentially be very little administrative burden for the city.

The disadvantages of enacting an ordinance for PAYT include:

- *Less control over services/rates:* Unlike contracting in which the community can set service requirements, rate structures, billing, and customer service specifications, an ordinance does not allow for as high a level of oversight and control.
- *May not be the most efficient:* While ordinances maintain more hauler competition, they do not increase collection efficiencies. Under an ordinance there may be multiple haulers serving households on the same street with multiple trucks driving down the same street at different times of the day. This lack of efficiency may lead to increased wear and tear on the streets and vehicle emissions.

Whereas there are pros and cons associated with ordinances, there are also a number of distinct advantages (and disadvantages) to contracting for trash service. Some of the advantages to contracting include:

- *Fewer trucks on the streets/environmental impact:* With one contracted hauler all HHHs have the same trash day with the same trash truck limiting the number of trucks on the road, the GHG emissions from the trucks, wear and tear on roadways, and other impacts.
- *Lower costs for households:* Under contracting households may see a reduction in monthly/yearly costs. The RFP process requires haulers to compete to provide the lowest cost service. Haulers are able to collect all the households on a block, not just some of the HHHs, and thus are able to realize collection and routing efficiencies. This often results in potentially lower bids and rates for HHHs.
- *More control over rates/services/options for City-* Contracting allows the community to include a number of stipulations in the contract including rates, reporting, enforcement and others.
- *Simplified reporting/problem solving:* Under a single hauler contract it is easier to collect tonnage reports of MSW and recyclable materials. Additionally, if problems arise there is no question in finding the responsible hauler to contact to solve the problem.

A few of the disadvantages of contracting for service include:

- *Haulers and citizen push back:* Haulers generally prefer ordinances over contracting. Under contracting only one hauler can win all of the accounts. Additionally, households may resent having their service provider dictated to them by local government. There may be a political battle to implement a single hauler contract. However, in many of the Western communities with single hauler contracts, the communities report that despite initial public and hauler pushback the programs are now well accepted and actually preferred by the residents³⁰.
- *More difficult to implement:* Completing the RFP process requires a substantial investment in time by the city and takes longer to implement than an ordinance.

Both the pros and cons of an ordinance and contract are displayed in the table below:

Table 10.2: Pros and Cons of Contracts and Ordinances

| Ordinance | | Contract | |
|---|------------------------------|---|------------------------------------|
| <i>Pros</i> | <i>Cons</i> | <i>Pros</i> | <i>Cons</i> |
| • Maintains competition in the market place | • Less control over services | • City has greater control over rates and service | • Limits competition in the market |

³⁰ For example, the City of Lafayette, CO reports that for the first 60 days of their contracted PAYT program there was significant feedback, calls, and questions from the citizens. After the first two months the calls dropped off precipitously and now residents prefer the PAYT contracted program.

| Ordinance | | Contract | |
|--|---|---|---|
| <i>Pros</i> | <i>Cons</i> | <i>Pros</i> | <i>Cons</i> |
| <ul style="list-style-type: none"> • Allows customers to choose their service provider • Easier to implement • Retains a “level playing field” for all haulers operating under the same rules • Less resistance from haulers • Less administrative demand | <ul style="list-style-type: none"> • Political support is needed • May not be the most efficient (more trucks on the roads, more GHG emissions, etc.) | <ul style="list-style-type: none"> options • Allows for routing efficiencies for selected hauler • Simplified reporting of tonnages collected • Potentially lower rates for customers • Reduced wear and tear on streets • Can set facility designation for materials | <ul style="list-style-type: none"> • May be politically unattractive • Limits customer choice • Requires lengthier implementation process (RFPs, Bids, selection, etc) • Higher resistance from haulers |

Key Elements of an Ordinance:

The key elements of a PAYT ordinance are:

- ❑ **Safety Issues:** Requirements for truck and operator safety issues, avoiding leakage, etc.
- ❑ **Recycling Opportunities:** All haulers providing service within Westminster’s boundaries must:
 - 5) offer curbside recycling to every entity subscribing to garbage service; (“entity” could be single family households under 9 units in size, in the future it could include MFU or commercial accounts depending on what sectors the community decides to focus on)
 - 6) provide recycling service at least every other week;
 - 7) must collect at least a base set of materials that the community lists (usually newspaper, waste paper, cardboard, chipboard / paperboard, aluminum and steel / bimetal cans, glass bottles, and #1 and #2 plastics, etc.); and
 - 8) must provide recycling container(s);
- ❑ **Fees and PAYT:** The cost of the recycling program must be embedded in the trash rate, with no separate charge, fee, or line-item for recycling. The cost for trash service must be in a PAYT structure. The PAYT system must:
 - 1) Offer, as its smallest container, a container (or bag) no larger than 32 gallons, and must offer service in 32 gallon increments above this service;
 - 2) The cost of the trash container service must be set so that, throughout the service levels available, double the service volume cannot cost less than 80% more in total to the household.

The community should establish auditing rights.

- ❑ **Reporting and Audit Authority:** Westminster should require haulers to report the trash and recycling tons collected within the community’s boundaries, with reporting at least quarterly. This will allow the community to monitor progress in recycling. Establishing the authority to audit compliance with the ordinance is also important.

- ❑ Educational responsibilities: The community should designate minimum requirements for frequency of recycling education (e.g. requiring haulers to provide annual outreach or mailers to customers).³¹

Key Elements of a Contract:

The elements required in an RFP for variable rates contracting are quite similar to those in an ordinance. Under Colorado statutes a City may not contract for collection for MF buildings with 9 or more units or for commercial properties. They may only contract for MFUs with 8 or less units and single family residences. Cities also may not bar residents from contracting with whatever hauler they want. If Westminster does decide to contract for a hauler and bill residents directly, residents can still sign-up for trash collection service with a different hauler, however they must still pay the billed rate.

The RFP should include the following elements and allow the responding bidders to “fill in the blanks” on the costs to provide service. The elements to include in the RFP are:

- ❑ Safety Issues: Requirements for truck and operator safety issues, avoiding leakage, etc. (same as ordinance)
- ❑ Recycling Opportunities: Respondents should return bids to provide the following services for the single family sector up to and including 8 units:
 1. provide recycling service at least every other week;
 2. must collect at least a base set of materials listed in the RFP (usually newspaper, waste paper, cardboard, chipboard / paperboard, aluminum and steel / bimetal cans, glass bottles, and #1 and #2 plastics); and
 3. must provide recycling container(s), the RFP can request that the bins be no smaller than 18-gallon open-top containers or could request larger 32-96 gallon carts for residential recycling, (SERA recommends no smaller than 32 gallon);
- ❑ Fees and PAYT: The hauler should provide the bid for costs in a PAYT rate structure with their best estimates as to how many HHs will be on each service level. The RFP can request how service is provided such as cart service, a hybrid bag/can program, or a sticker program. The cost of the recycling program must be embedded in the trash rate, with no separate charge, fee, or line-item for recycling. The cost for trash service must be in a PAYT structure. The PAYT system must:
 - 3) Offer, as its smallest container, a container (or bag) no larger than 32 gallons, and must offer service in 32 gallon increments above this service;
 - 4) The cost of the trash container service must be set so that, throughout the service levels available, double the service volume cannot cost less than 80% more in total to the household.
 - 5) The bid should include the cost for containers/bags/tags separately to allow for an apples-to-apples comparison. A bid for automated collection that does not include the costs for containers (around \$50/cart) may be underbid and require an additional cost for the households.

The RFP should establish auditing rights.

³¹ Often the best programs have both the hauler and the community providing education to households. This establishes the portion for which the hauler is responsible. This can augment community outreach efforts and provide a coordinated message.

- ❑ Reporting and Audit Authority: The hauler must report the trash and recycling tons collected within the community’s boundaries on a quarterly basis. The request should lay out penalties for non-reporting.
- ❑ Educational responsibilities: Request a minimum requirement for frequency of recycling education (e.g. requiring haulers to provide annual outreach or mailers to customers).³²

The RFP should set forward the roles for customer service between the community and the bidding hauler including:

- ❑ Billing: The RFP should clarify which party is responsible for the billing, the hauler or the city.
- ❑ Customer service calls: Similar to billing, the request should clearly define which party is responsible for customer service calls and suggest guidelines for response and penalties. The request may lay out service level requirements and penalties for missed collections, high levels of customer complaints, or other issues. Providing high customer service should be a goal of the contract

Choosing a PAYT system:

The three most common system types and the pros and cons of each are provided below. Under an ordinance for PAYT the system type is decided on by the haulers and more than one collection system may be appropriate. For example, one hauler may opt to use a variable can system if they are already providing automated collection for households while another hauler may opt for a bag program due to manual collection limitations.

Hybrid bag/tag - In this system, households only pay for waste beyond a specified “base” set out volume. They pay a fixed bill or a tax bill that entitles them to a first can or bag of garbage (size limits are usually around 30 gallons). Then, additional waste is charged on a per-bag or per-sticker system. This system is a “hybrid” between existing garbage programs and the new incentive-based approach, and minimizes billing and collection changes.

Variable can system- Under a variable can system; households sign up for a specific number of containers (or size of container) as their usual garbage service, and get a bill that is higher for bigger disposal volumes. This system is commonly used in conjunction with automated cart collection and variable can sizes are typically 32, 64, and 96 gallons. This is the most common program in the front range and used by Lafayette, Louisville, Boulder, Loveland, Longmont, and others.

Bag/Sticker Programs- Households purchase special tags or stickers to put on their bags of garbage. The sticker price includes some or all of the cost of collection and disposal of the amount of waste in the bag. As with hybrid programs, some programs have a customer charge or base fee in addition to the sticker fees to help make sure they cover fixed costs. Bags are usually sold at convenience and grocery stores in addition to City hall-type outlets.

The table on the following page displays the three potential systems and the pros and cons of each. It is important to remember that the programs are not mutually exclusive and if an ordinance is chosen to enact PAYT, multiple systems may be used.

³² Often the best programs have both the hauler and the community providing education to households. This establishes the portion for which the hauler is responsible. This can augment community outreach efforts and provide a coordinated message.

| <i>HYBRID SYSTEM</i> | <i>VARIABLE CAN SYSTEM</i> | <i>BAG/STICKER SYSTEMS</i> |
|---|---|---|
| <p>ADVANTAGES:</p> <ul style="list-style-type: none"> ▪ Can often use existing containers (which can help limit "scatter") ▪ Can be implemented quickly and inexpensively – easy transition from current collection ▪ No capital investment for trucks, containers ▪ No new billing system needed – continue to bill using current method, but now for more limited service ▪ Can design "base" service amount to community needs – and can modify over time ▪ High customer satisfaction because "out of pocket" can be limited (many will not exceed base units) – and easy transition from current system in customer minds ▪ Can modify system later with little to no wasted expenditure ▪ Stable revenues because "base" paid by all customers ▪ Provides incentive at relatively low revenue risk to the system ▪ Customers only need to buy extra bags/tags for waste beyond their can or base level – less inconvenient than programs for which they have to buy bags for all waste ▪ Multiple haulers can be accommodated using different colored bags/stickers <p>DISADVANTAGES:</p> <ul style="list-style-type: none"> ▪ Customers don't have incentive to recycle below "base" service level ▪ Need to set up bag/tag system for "extras" beyond base service level; customers need to learn/understand system and where to purchase bags ▪ Customers may not see total cost of garbage system because billed in two portions. | <p>ADVANTAGES:</p> <ul style="list-style-type: none"> ▪ Multiple can sizes can provide incentives / equity ▪ Using relatively small first container limit can provide good incentives for reduction ▪ Containers are sturdy, tend to reduce scatter ▪ Revenues relatively stable ▪ Possible to use existing containers if sizes are compatible ▪ Experience in larger jurisdictions ▪ Works with automated collection systems ▪ Using standardized containers simplifies enforcement ▪ Billing system can usually accommodate low income, other special services ▪ Can develop rates with very flexible structures for incentives (can develop varying differentials) <p>DISADVANTAGES:</p> <ul style="list-style-type: none"> ▪ Customers must determine their "normal" service level for billing purposes ▪ Customers must call to change service levels (some hassle) ▪ System for handling occasional "extras" beyond subscribed service must be established (bag, sticker) ▪ If standardized containers to be provided by community or hauler, purchase, distribution, and storage can be expensive ▪ Initial complications / administration when customers select initial service levels (billing, delivery of containers) ▪ Coordination required (and expense) as customers want to change service levels ▪ Slower collection – need to return to curb – and empty containers left on curb afterward ▪ Multiple containers can be expensive to purchase, store, deliver/re-deliver, and estimating proportions customers will want up-front (for ordering) can be complicated | <p>ADVANTAGES:</p> <ul style="list-style-type: none"> ▪ Smaller, more flexible increments of service available – easy to make multiple bag or sticker sizes – harder for cans ▪ No billing system needed except invoicing retail sales outlets ▪ Convenient outlets have been willing to sell bags/tags fairly readily in communities (sometimes without commission in exchange for foot traffic) ▪ Easily handle multiple haulers by using colored bags/stickers ▪ Pure bag/tag systems can be enhanced/modified with "base" customer charge (fixed), which can be easily billed, and can reduce revenue volatility ▪ Bags and stickers are cheap; easily distributed (stickers even easily mailed). They are readily available from multiple firms. ▪ Collection can be very fast – collection staff do not need to return to curb after collection ▪ Collection is "clean" – nothing left on curb ▪ Service is "prepaid" when the bag/tag is purchased. Revenues are received ahead of service delivery. <p>DISADVANTAGES:</p> <ul style="list-style-type: none"> ▪ Supply and distribution system needed (grocery/convenience stores, etc.) – need to order, distribute, and invoice distributors ▪ Customers must buy bags/stickers for ALL waste (hybrid or can programs have reusable containers for some amount of waste) ▪ Customers need to store/manage bags/tags and have bags on hand when they need them – need convenient distribution system with long hours ▪ Does not work as easily with automated collection (unless bags are put in cans, which complicates enforcement)) ▪ Revenue uncertainties relatively high – revenues depend SOLELY on number of bags/stickers sold (unless customer charge used in conjunction) ▪ Need to explain to customers how system works and where to get bags/stickers (true for all systems, and for "extras" associated with hybrid and variable can programs also) ▪ Stickers somewhat more complicated to explain to customers (size limits, etc.) ▪ Bags may lead to scatter from animals (ammonia / vinegar in bag can reduce; bags can be put in cans, or stronger bags used) ▪ Recycling not encouraged below smallest bag size (although customers may not put out waste each week) |

| | | |
|--|---|--|
| | <ul style="list-style-type: none"> ▪ Small containers (especially ones suitable for automated / semi-automated coll'n) difficult to find ▪ No incentives for recycling below the smallest container | <ul style="list-style-type: none"> ▪ Stickers are somewhat harder to enforce size limits – some hauler judgment required at curb ▪ Structure of rate incentives is limited – a bag is a bag, so second bags can't be more or less expensive than first bags. Also, large bags cannot be priced with additional penalties – customers would just use multiple small bags. |
|--|---|--|

Rate Setting

Setting rates to incentivize customer behaviors while covering costs and maintaining revenues is a very important aspect of the PAYT. In both an ordinance and contract situation, the burden of setting appropriate, and revenue making, rates will fall on the haulers. With an ordinance, the City will only set rate structures, not the rates themselves and allow each individual hauler to set their own rates. Under Colorado state statutes cities and counties are not allowed to set rates for haulers, only rate structures. If a contract is chosen, the RFP will dictate the rate structures and the rates in the submitted bids will most likely be one of the key decision points in determining who is awarded the contract.

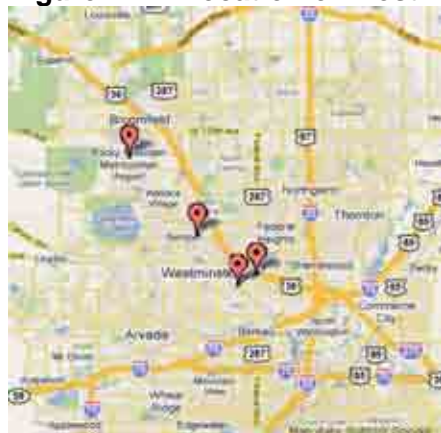
The rates charged by the haulers must, among others items, cover the costs to get to the door (the highest cost for the hauler), the incremental cost of additional trash (a much lower cost to the hauler), and embed the cost of recycling. Under PAYT the challenge arises in setting the base fee and the incremental cost of additional trash. While incremental amounts of trash do not cost the trash hauler significantly more to collect, the new rates must be designed as an economic signal to the rate payer. The base rate will vary depending on each hauler's particular costs but an incremental price increase for additional units of trash of 80% is recommended. This value – 80% -- is based on statistical studies that balance two objectives: 1) providing a strong recycling incentive, and this value was found to provide almost the same recycling incentive to households as rates that double for double the service; and 2) backing off from very aggressive rates to recognize the fact that the largest cost in providing trash or recycling service is getting the truck to the door – arguing for flatter rates. This differential tries to provide incentives, but also help decrease the risk of not covering fixed costs of the operations. If a community selects a lower percentage, be careful to provide enough incentive to modify behavior – perhaps not less than 50% extra.

Under an 80% incremental price difference, a 32-gallon container costs \$10/month, a 64-gallon container would cost \$18, and a 96 gallon container would cost \$26, etc. Haulers may increase the level of the rates they need in order to cover the cost of recycling and the PAYT rate structure.

SECTION 11: DROP-OFF RECYCLING ANALYSIS

The Westminster recycling drop-offs play a pivotal role in the current diversion practices of the City. Westminster operates seven year round drop-off sites, four of which are advertised to the public as free recycle drop-off areas. The four major drop-offs (Fire Station #1, MSC Complex, West View Recreation Center, and Municipal Court) are displayed in the map below:

Figure 11.1: Location of Westminster Drop-Off Recycling



The drop-off areas are located in the south west portions of the City and there are no city operated drop-offs located in the north east section of the city (north of 120th or east of Federal Blvd).

According to the statistical survey completed for this project, 61% of the survey respondents report that they use the drop-offs. Over two-fifths (43%) of the respondents reported that they visit the drop-offs once a month or more. The most popular drop-off was reported to be the West View Recreation Center location followed by the MSC Complex. The Municipal Court location was reported to be the least used site.

Impact Estimates

Overall, the drop-off program is a cost-effective program that is responsible for about 40% of the diversion in the residential sector. The drop-offs divert about 4% of the residential waste stream³³. Without the drop-off program the overall residential diversion rate would be only around 7% (the curbside diversion rate). The average cost per ton is around \$12.50, making the recycling drop-off a very cost-effective program. SERA compared the estimated cost per ton of Westminster's program with a number of other local and national programs and uncovered that Westminster has a very economical program. Typical drop-off programs in other states may cost on the order of \$50-\$125/ton³⁴. Based on conversations with other recycling program

³³ SERA was unable to obtain tonnage data from the contracted hauler on materials collected at the drop-offs. Instead, estimates based on frequency of collection, the size of containers, the percent full for the containers, and the average density for various mixed recyclables were calculated.

³⁴ *Recommendations for Improving Perry County's Drop-Off Recycling Program and Addressing Illegal Dumping*. September 26, 2005. PA DEP/SWANA and R.W. Beck Recycling Technical Assistance Report, Flemington, Robert. *Drop-Off Recycling in Ohio: Measuring and Understanding Participation and Program Effectiveness*, Ohio EPA, November 1, 2004. *Drop-off Recycling Factors for Success*. Resource Recycling, January 1994

managers in Colorado, some of the other most cost effective programs in the state may cost on the order of \$10-20/ton while an example of a very expensive program was uncovered in one of Westminster's neighbors at \$186/ton. The sites are, on average, collecting around 500 tons/site/year. This works out to about 4 lbs per each Westminster resident per month or 50lbs per resident per year. The cost per household is around \$.76 a year. SERA researchers spoke with the material processor to uncover potential levels of contamination. The processor reported that the streams were clean and that they do not have issues with contamination. The figure below displays some of the performance metrics of the Westminster drop-off sites:

Figure 11.2: Impacts of Drop-Off Areas

| Metric | Impact |
|--|-----------------------|
| Number of year round drop-offs | 7 (4 advertised) |
| Total cost (as reported by City) | ~\$33,100 |
| Percent of residential stream diverted | ~4% |
| Tons per drop-off | 529 |
| Cost per ton | \$12.50 ³⁵ |
| Cost per HH/year | \$.76 |
| Pounds/resident/month | 4.1lbs |
| Pounds/resident/year | 49.9 |

This is not to say that Westminster's drop-off program is generating revenue or is free, it is a cost to the City and a drain on both budgets and staff time. However, if the city is striving to reach certain environmental and recycling goals, the recycling drop-offs are an important mechanism to reach those goals. The following two figures display both the benefits and costs of the existing drop-off sites:

| Benefits of Drop-Off Program | |
|--------------------------------|---|
| Diversion impacts →→→→ | The drop-offs are a large contributor to the current diversion rate (about 40% of the 11% residential diversion is from the drop-off program) and are reported to be used by nearly two-thirds of the residents in Westminster. |
| Cost-effective →→→→→ | Compared to other programs (both locally and nationally) the drop-offs, although costing the city money and staff time, are cost effective. |
| Supports city goals →→→ | In order to meet environmental and recycling goals it may be important for the city to "walk the talk" and dedicate city efforts toward recycling. The drop-offs are one of the only public faces of recycling for the city. |
| GHG impacts →→→→→ | The drop-offs lead to the avoidance of about 2,200 MTCE of GHG per year. |
| Convenience →→→→→ | The drop-offs are convenient and inexpensive options for residents, especially those living in the south west portions of the city. |

The drop-offs come at a price. Through discussions with City staff and on-site observations the following negative costs of the drop-offs were reported (this does not include the cost to pay for the hauling of materials from the sites to processing):

| Costs of the Drop-Off Program | |
|-------------------------------|---|
| Staff burden →→→→→→→→→ | City staff estimates that they spend 160 hours annually cleaning-up the drop-offs. The worst days are reported to be Monday morning. The clean- |

³⁵ This is a cost-effective program that is based on estimated diversion tons. Even if the SERA diversion estimates are halved (264.5 tons per site) the program is *still* cost effective at \$25.01/ton.

| Costs of the Drop-Off Program | |
|---------------------------------------|--|
| | up efforts are needed to clean-up materials next to the dumpsters as well as collect materials that may have blown around the property. |
| Appearance of area→→→→→ | The dumpsters often have a messy unkempt appearance, especially when overflowing, and paper, plastic bags, and other materials often blow around the public property they are located on. Westminster staff reported that they may field up to three phone calls a week from residents complaining about messes at the drop-off areas |
| Overflowing materials→→→→→ | Residents and staff alike report that the containers are often overflowing with material and instead of taking the materials to another drop-off or bringing them back on another day, residents tend to just leave the materials on the ground next to the carts. |
| Not limited to Westminster residents→ | An informal poll conducted by Westminster staff on a single weekend day at one drop-off area found that only 35% of the visitors were actually Westminster residents, the other 65% were from surrounding cities or refused to say where they were from. This problem may continue to grow as more and more surrounding communities discontinue their drop-off programs. |
| Contamination and illegal dumping→→ | Instances of trash being illegally dumped at the drop-offs and contamination in the recycling were reported. However, as stated earlier, the processor reports that the incoming stream of recyclables from the drop-offs is clean (a photo of the incoming materials from the processor, along with photos of the drop-off areas can be seen in the reports appendix). |

11.1: Potential Changes to Drop-Offs

Based on the benefits and costs of the current program, site visits, a review of best practices for drop-offs around the country, and interviews with local experts on drop-off recycling programs, the following five potential options for Westminster’s drop-off program have been developed:

Status Quo

Under this option the drop-offs continue to operate as they currently are. As stated above, the drop-offs, despite the costs, are a leading contributor to the current diversion rate and are cost-effective. If the city adopts some of the other programs recommended in the report, namely residential PAYT, SF residents will have less of a need to use the drop-offs. However, they will still be a popular option for MF generators as well as small commercial generators that may not have any other recycling outlets available to them.

Existing facility improvements

There are a number of incremental and relatively inexpensive improvements that the city can undertake to improve the existing drop-offs. The city can choose to enact none of the improvements, some of the improvements, or all of them. These include:

- *Increased signage*- While there are some signs at the drop-offs, they are rather small and could be improved (see photos 2 and 3 in the appendix). SERA recommends

- adding: 1) material signs- large material specific signs that clearly denote what materials are and are not acceptable for diversion, 2) illegal dumping signs- other drop-offs in the US have large, obvious signs alerting visitors that dumping non-recyclable items or recyclables not in the containers is illegal and violators will be prosecuted. Potentially issuing a few tickets early on and publicizing it in the paper may help spread the word about illegal dumping 3) Westminster signs- currently it is not overly obvious that the drop-offs are Westminster operated. Erecting a large sign designating them as Westminster City recycling sites will let visitors know that the city is dedicated to recycling as well as help generate civic pride in the sites. The signs should also say that the sites are only available for use by Westminster residents to help limit non-Westminster residential use. **COST-\$1,500-\$2,900**
- *Container lids*- Westminster staff reports that on windy days the lids are often blown open and materials strewn about the site. Visual inspections uncovered that some residents are not breaking down their cardboard boxes; leading to the containers overflowing quicker than if the boxes were broken down. SERA recommends considering modified lids (see photo 6 in the appendix) for the containers that are latched shut. This will help limit materials blowing about, the smaller openings require boxes to be broken down, and the lids help discourage dumping larger non-recyclables in the bins. **COST- \$2,500-\$3,500**
 - *Web cams or security cams*- Installing highly visible web cams or security cameras at the sites can decrease the incidence of illegal dumping as well as allow city staff to monitor the site to see when the containers are overflowing. A sign, or notification on the illegal dumping sign, that the sites are monitored can be an effective tool. If costs are prohibitive fake cameras (which are obviously, much cheaper) have also been shown to be effective. **COST- \$1,200-\$2,800 (if power is available)**
 - *Renegotiating collection frequency*- Work with the hauler to allow for a number of on-call pulls per month. When the web cams or visitors to the site report that the containers are overflowing, city staff can request an extra collection of materials by the hauler. **COST-\$4,400-\$5,500**
 - *Text or SMS program*- Cell phones are ubiquitous in today's society. Posting a number that visitors can send an SMS message to report illegal dumping, overflowing containers, or messes, will allow for quick feedback and response. **COST- Minimal**
 - *Dedicated part-time staff or volunteers*- Stopping short of full staffing at all of the sites, we recommend considering a volunteer position or a part-time commitment of existing staff dedicated to maintaining the sites. The position would require about .25-.35 FTE and would be responsible for site maintenance and clean-up. **COST- \$16K to \$22K**

Hours and operational changes

The hours and operational changes include the possibility of implementing some or all of the changes from the above list as well as changes to operational hours and sites open. This option would direct visitors to certain sites and decrease the costs of maintaining all four public areas, as well as cut some of the costs for the site improvements listed above by about 50%. This option does have the potential to decrease some costs but may also have a negative impact on the amount of recyclable collected at the drop sites.

If other program recommendations from this report are implemented, namely residential PAYT, the number of single family Westminster visitors to the drop-off sites is estimated to drop

significantly. For example, a recent survey conducted by SERA found that only 27% of the residents responding to a statistically valid survey in Longmont³⁶ (a city with recycling embedded in the trash rates) visit the drop-off once a month or more compared to nearly 45% of the residents in Westminster that report they visit the drop-off once a month or more.

- *Closure of two of the four drop-site-* By closing the Municipal Court site and the MSC complex site, the city would keep the most popular site (West View Rec. Center) and one of the larger sites (Fire Station #1 with 10 6 cubic yard containers) open and have two sites that are somewhat spread out over the city³⁷. The collection schedule at the remaining open sites may need to be increased to handle the larger volume of recyclables at the two sites. **COST- Savings of \$13,000-\$15,000**
- *Fencing-* In order to limit the number of hours the remaining two sites are open fencing around the sites would be required. Whether or not the fencing would work at each site would need to be decided by city staff and decision-makers. **COST-\$15,000-\$30,000 (depending on materials used)**
- *Staffing and limiting hours-* To limit the number of non-Westminster residents visiting the sites, keep the sites clean, and discourage illegal dumping and contamination, the city could consider staffing the two remaining sites full time³⁸ and decreasing the number of hours they are open. The combined scheduled hours and days open could be designed to keep the sites open around 40 hours a week, allowing for two half-time staff members to manage the sites. **COST-\$50,000**

Development of central drop-off

A fourth option for the city, is the development of one central drop-off site similar to the drop-site programs in Longmont, Loveland, Fort Collins, Greeley, Windsor, Boulder and other cities in the area. Under this option, the city closes all of the sites accepts for one, and focuses all of its efforts in developing and maintaining the one site. The central site would require a number of large scale improvements that would come at a significant cost. The site would require around 75x75yds of space to accommodate several 20-30 cubic yard containers for recyclables, enough room for a truck to easily collect the containers, an OCC compactor, fencing, electricity, stairs for access to the drop-offs, and new signage. Based on interviews with other communities, the site does not need to be staffed full time. Staff would be needed to check the sites in the morning and the evening for basic maintenance and to lock and unlock the access gate³⁹.

The experience of other communities with similar sites has shown that residents tend to take great pride in this type of site and the site may see as many as 250-400 visitors a day. Although only one site would be open, it is estimated that the one central site may be able to collect as much as 1,000-1,800 tons of recyclables per year. This is a decrease from the current estimated tons collected but if curbside residential collection is more widespread it could make up for the

³⁶ Skumatz and Freeman, *City of Longmont PAYT Rate Study and Trash/Recycling Analysis*, Report to the City of Longmont, 2008

³⁷ The city may wish to keep other sites open or close other combinations of sites depending on a number of factors such as location, staffing concerns, citizen preference, parking, etc.)

³⁸ Although there are a number of proven and very positive benefits to staffing the sites full time, it is not a necessary procedure. In discussions with some of the newer and more successful drop-off areas in the state, SERA found that staffing is not always needed and sites can be successful without full time staff. For example, the City of Fort Collins, Greeley, and Windsor, all of which have full scale drop-offs report that they do not need full time staff and have little problem with illegal dumping, contamination, or mess.

³⁹ For example, the City of Greeley pays a retiree living near-by the site \$300/month to go by every morning and evening to check on the site, lock and unlock the gates, and make sure there are no problems. A similar situation may be possible in Westminster.

difference. The annual costs per ton for this site (not including the capital costs) are estimated to be in the range of \$10-\$40, on par or slightly above the current cost per ton of \$12.50. The total capital cost to build this central drop-off, including fencing, signs, electric, and other considerations, is estimated to be between \$55,000 and \$90,000. There are a number of state grants available that may significantly help the city offset these costs, namely the Recycling Resources Economic Opportunity grant (RREO) funded by the CDPHE through landfill tip fees.

COST-\$55,000-\$90,000

Drop-off closures

The final option is the closure of the drop sites. This option is estimated to save the city around \$33K per year. However, by shutting the sites the city may be going against its goals of increased recycling and environmental responsibility and may face a well spring of citizen opposition. The drop-offs are reported to be used by around two-thirds of the residents responding to the survey. A large part of the city's current diversion would potentially be lowered from an estimate of ~11% to only around ~7%. If additional curbside programs are adopted, the decrease in diversion would be mitigated but there would not be any options for nearly 25% of the population in MFU to easily recycle. Closing the sites may be a more attractive cost cutting option in the future if additional recycling programs for the residential, MF, and commercial sectors are adopted. COST-Savings of \$33,000

Photos

A number of photos of the current issues facing the drop-off areas, the current materials collected, potential signage, new containers, and other drop-offs in the area may be seen in appendix 2 of this report.

SECTION 12: SUMMARY AND CONCLUSIONS

12.1: Introduction and Goals

The goals of the City of Westminster Trash and Recycling Study were to:

- Examine solid waste systems in selected other Colorado communities
- Assess baseline data for solid waste and recycling in the City of Westminster
- Provide feasible options for improved residential and commercial recycling in Westminster

In order to assess the current situation in Westminster and the surrounding communities the following efforts were undertaken by Skumatz Economic Research Associates Inc. (SERA):

- **City Comparables:** Detailed interviews with staff from 19 cities and municipalities
- **Residential Set-Out Survey:** Field observations and weights of residential trash and recycling
- **Residential Web Survey:** Statistically valid survey of residential trash and recycling preferences, behaviors, and willingness to pay
- **Commercial Set-Out Survey:** Observational data and interviews of the Westminster business sector
- **Commercial Web Survey:** Statistically valid survey of commercial trash and recycling preferences, behaviors, and willingness to pay
- **Waste hauler interviews:** Interviews with waste haulers serving Westminster.

Using the data gathered in the baseline portion of the project the SERA team developed a “gap” analysis highlighting the current services provided in the City, the gaps in the current services, and the potential areas for improvement to the current system. Using the “gap” analysis and the baseline data a list of 25 recommended program options was developed. The Westminster Environmental Advisory Board (EAB) trimmed the list down to nine programs for detailed analysis and impact modeling which is included in the report.

12.2 Estimate of Residential Diversion⁴⁰

Using the data collected throughout the project SERA was able to calculate an estimate of the residential recycling rate⁴¹. Table 12.1 displays the recycling estimates for the City of Westminster:

Table 12.1: Estimates of Westminster Residential Recycling

| Recycling at Curb | Recycling at Drop-off | Total Residential Estimate |
|-------------------|-----------------------|----------------------------|
| ~7% | ~4% | ~10-11% |

Compared to the State of Colorado data and some of Westminster’s higher performing neighbors, this is relatively low rate. Table 1.2 displays the recycling rates in Westminster and a

⁴⁰ Based on the data available SERA researchers were unable to develop accurate estimates for commercial recycling rates. Estimates of participation in recycling programs by the commercial sector were developed and can be seen in Sections 5 and 6.

⁴¹ Some of the material delivered to the drop-offs is from the commercial sector and non-Westminster residents. However, for this estimate it was assumed that it was all from the residential sector.

few surrounding communities. It is important to note when comparing these rates that each community has vastly different recycling services available to their residents.

Table 12.2: Comparison of Recycling Rates

| Location | Residential Recycling Rate |
|---------------------------------|----------------------------|
| Westminster | ~10-11% |
| Lafayette | 30% |
| Louisville | 48% |
| Superior | 27% |
| State of Colorado ⁴² | 19.5% |

12.4: Recommended Programs

After a review of the 25 programs recommended by SERA, Westminster’s Environmental Advisory Board chose nine programs as the leading options to support the City Council’s environmental and recycling objectives⁴³. If all of the programs were implemented, it is estimated that they would increase the total diversion rate by around 10-12% (the total diversion rate is the amount of the overall waste stream (includes single-family, multi-family, and commercial generators) that is diverted from disposal in the landfill). The residential diversion rate is estimated to increase by around 10-14%, bringing the total residential diversion to between 20-25%, approximately doubling the current residential diversion rate. For all of the program models, SERA used conservative estimates on diversion impacts. The table below displays the potential impact on the City’s diversion if all nine programs are implemented:

Figure 12.3: Potential Impacts on Diversion in Westminster

| Sector | Current Diversion | Estimated Impact | Estimated Total Diversion NEW |
|--------------------------|-------------------|------------------|-------------------------------|
| Residential | ~10-11% | 10-14% | 20-25% |
| Commercial ⁴⁴ | UNK | 12-14% | UNK |
| TOTAL | UNK | 10-12% | UNK |

The table below displays the estimated costs per ton for generators⁴⁵ and the city for each program. The costs per ton numbers are useful for comparing the overall cost effectiveness for each program. A program that is modeled to cost \$450-\$500/ton is significantly less cost effective than one that costs \$100-\$150 per ton. The figure also displays the estimated average cost per generator (some generators may see larger impacts and some may see smaller impacts) and the annual impacts to the city’s budget. The only program with potentially significant capital costs is the drop-off areas improvement program.

⁴² As reported by the CDPHE. This number includes both residential and commercial recycling efforts.

⁴³ SERA recommends that the City of Westminster consider additional programs from the list of options for future implementation. For example, the selected programs do not address yard trimmings and food waste or the construction and demolition waste, both of which are large contributors to the overall MSW stream.

⁴⁴ A commercial recycling rate cannot be estimated based upon the available data.

⁴⁵ The generator is the entity impacted by the program. For instance, in the commercial ABC program (Com5) focused on holders of on-premise consumption of liquor permits, the generators are the bars, restaurants, and liquor stores. While under the residential pay-as-you-throw program (Res2), the generators are the households covered by the program. In some of the programs, the haulers may have increased costs (new carts or recycling bins, additional collections, etc.), but for the model SERA used assumption that in general the increased costs are passed on to the rate payer, or the generator. For example, in the residential PAYT program the model includes the estimated cost impacts of residents paying for new recycling carts or containers.

The table also displays the percentage of the stream that is diverted (i.e. the residential stream or the commercial stream), the percentage of the total generation that is diverted (includes all streams), and the estimated avoided GHG emissions from each program. Combined, the programs are estimated to avoid about 10,000 metric tons of carbon equivalents (MTCE) per year. This is the same as removing around 7,000 cars off the road per year⁴⁶.

Table 12.5: Detailed Strategy Impacts (Com=Commercial, Govt=Government, Res=Single-family Residential, MF=Multi-family Residential)

| Id | Program | Brief Description | Diversi on Estimate (Tons) | Gener ator Cost per Ton | Cost per generator ⁴⁷ | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|-------|---|--|----------------------------|-------------------------|---|-------------------|-----------------------------|--------------------|---|-------------|----------------|----------|
| Com5 | Bar and Restaurant Recycling-ABC Rule | All businesses with permits to consume alcoholic beverages on-site must recycle all beverage containers. If they do not recycle the containers they cannot renew their permits | 1,300 | \$180-\$240 | \$150-\$250 per month per bar/restaurant | \$10-\$20 | \$14K-\$18K | \$190-\$260 | Costs per business vary depending on generator size, ability to recycle, and ability to reduce trash disposal | 3% | 1% | 1,000 |
| Com6 | Embed Recycling in Trash Fees | Embed recycling costs in the garbage fee for all commercial units. All commercial entities pay for recycling service. Most aggressive commercial program. | 5,100 | \$100-150 | \$20-\$40/month on average for all businesses in city | \$1-\$5 | \$26K-\$32K | \$100-\$155 | Costs to City are based on outreach and enforcement efforts needed, costs per business depends on size, type, and ability to recycle. | 11% | 4% | 4,200 |
| Com7 | Require haulers to offer commercial recycling | Require haulers to offer commercial recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. Least aggressive program. | 400 | NA | Minimal | \$10-\$20 | \$4K-\$6K | \$10-\$20 | No generator costs per ton- Only generators that realize savings decreases in bills, or strong green ethos typically sign-up for this type of program | 2% | 1% | 320 |
| Govt2 | Set New Diversion Goal | Set a city diversion goal | NA | NA | None | NA | Minimal | NA | Does not lead to diversion by itself | NA | NA | NA |
| Govt3 | Education | Expand current programs to inform residents of recycling options in City including drop-offs, bulky | 700 | Minimal | None | \$75-\$150 | \$60K-\$70K (~\$1.5/h/year) | \$75-\$150 | Costs and impacts are for a mid-level residential education program- | 1% | 1% | 570 |

⁴⁶ This estimate is based on US EPA passenger car annual GHG emission per year.

⁴⁷ Generator cost is the *average* cost for the impacted generator. Residential programs will impact households and business programs will impact businesses.

| Id | Program | Brief Description | Diversi on Estimate (Tons) | Gener ator Cost per Ton | Cost per generator ⁴⁷ | City Cost per Ton | City Annual Budget Impact | Total Cost per Ton | Notes | % of Stream | % of Total Gen | GHG MTCE |
|-------|---|---|----------------------------|-------------------------|--|---------------------|--|--|---|-------------|----------------|--------------------|
| | | collection by haulers, web-based tools, and others. | | | | | | | includes some social marketing aspects | | | |
| Govt5 | Recycling Drop-off improvements | Full set of options described in report. Options includes site improvements, operational hours and staffing, closing some or all locations, and new site development | -2,600 to 2,600 | Free | None | Depen ds on options | (\$33K)-\$100K (includes one-time capital improve ments) | Depen ds on options Current cost is \$10-\$15 | Impacts depend on what City decides to implement. Full set of options is described in detail in the report. | -3% to 4% | 3% | Depen ds on option |
| MF3 | Require haulers to offer Multi-family recycling | Require haulers to offer MF recycling as a condition of service agreements. Could set materials, frequency, and other conditions of the service. | 60 | \$275-\$325 | \$1-\$1.50/HH/month for participati ng MFUs | \$150-\$200 | \$9K-\$13K | \$425-\$525 | Estimates based on similar program in Colorado- low participation is anticipated | 0.1% | 0.1% | 50 |
| Res1 | Embed Recycling in Trash Fees | Haulers must include the costs of recycling in trash rates. All residents pay for recycling and are provided with recycling service. It is up to them whether or not they use the service. | 2,100 | \$550-\$600 | ~\$3/HH/M onth for all HHs in Westminster | \$1-\$5 | \$4K-\$6K | \$550-\$605 | Program costs are based on average per HH cost for curbside recycling across North America- with weight placed on western programs | 3% | 2% | 1,700 |
| Res2 | PAYT / Variable Rates | Haulers must charge for residential materials by a base unit (32 gallons) and embed costs of recycling in trash rates. Provides an economic incentive to recycle, source reduce, and compost. Most effective residential program available. | 6,300 | \$100-\$145 | \$1-\$2/HH/mo nth for all HH(some may see decreases in bills, some may see increases, some stay the same, and this is an avg.) | \$1-\$5 | \$4K-\$6K | \$100-\$150 | Tons diverted include recycling, composting, and source reduction. (Estimate is slightly lower than in other communities with PAYT due to limited yard waste diversion opportunities). Program costs are slightly higher than for other PAYT b/c limited HHs that already have recycling carts/containers | 9% | 5% | 5,100 |

12.4 Recycling Drop-Offs

Due to the complexity of this issue, a full chapter was dedicated to covering the drop-off options. The tables below show the current estimated costs and impacts of the drop-off sites as well as the costs and benefits of the sites:

Figure 12.6: Impacts of Drop-Off Areas

| Metric | Impact |
|--|-----------------------|
| Number of year round drop-offs | 7 (4 advertised) |
| Total cost (as reported by City) | ~\$33,100 |
| Percent of residential stream diverted | ~4% |
| Tons per drop-off | 529 |
| Cost per ton | \$12.50 ⁴⁸ |
| Cost per HH/year | \$.76 |
| Pounds/resident/month | 4.1lbs |
| Pounds/resident/year | 49.9 |

Figure 12.7: Benefits and Costs of Drop-Offs

| Benefits of the Drop-Off Program | |
|---------------------------------------|---|
| Diversion impacts→→→→ | The drop-offs are a large contributor to the current diversion rate (about 40% of the 11% residential diversion is from the drop-off program) and are reported to be used by nearly two-thirds of the residents in Westminster. |
| Cost-effective→→→→→ | Compared to other programs (both locally and nationally) the drop-offs, although costing the city money and staff time, are cost effective. |
| Supports city goals→→ | In order to meet environmental and recycling goals it may be important for the city to “walk the talk” and dedicate city efforts toward recycling. |
| GHG impacts→→→→→ | The drop-offs lead to the avoidance of about 2,200 MTCE of GHG per year. |
| Convenience→→→→→ | The drop-offs are a convenient and inexpensive options for residents, |
| Costs of the Drop-Off Program | |
| Staff burden→→→→→→→→→ | City staff estimates that they spend 160 hours annually cleaning-up the drop-offs. |
| Appearance of area→→→→→ | The dumpsters often have a messy unkempt appearance, especially when overflowing, and paper, plastic bags, and other materials often blow around the public property they are located on. |
| Overflowing materials→→→→→ | Residents and staff alike report that the containers are often overflowing with material |
| Not limited to Westminster residents→ | An informal poll conducted by Westminster staff on a single weekend day at one drop-off area found that only 35% of the visitors were actually Westminster residents. |

⁴⁸ This is a cost-effective program that is based on estimated diversion tons. Even if the SERA diversion estimates are halved (264.5 tons per site) the program is *still* cost effective at \$25.01/ton.

Based on the benefits and costs of the current program, site visits, a review of best practices for drop-offs around the country, and interviews with local experts on drop-off recycling programs, the following five potential options for Westminster's drop-off program have been developed:

1) Status Quo

Under this option the drop-offs continue to operate as they currently are. No change in costs

2) Existing facility improvements

There are a number of incremental and relatively inexpensive improvements that the city can undertake to improve the existing drop-offs. The city can choose to enact none of the improvements, some of the improvements, or all of them. These include:

- *Increased signage*- To reduce illegal dumping and contamination. COST-\$1,500-\$2,900
- *Modified container lids*- To limit blowing materials and improve material streams. COST- \$2,500-\$3,500
- *Web cams or security cams*- To reduce illegal dumping and messes COST- \$1,200-\$2,800 (if power is available)
- *Renegotiating collection frequency*- On-call hauls to reduce overflow COST-\$4,400-\$5,500
- *Text or SMS program*- COST- Minimal
- *Dedicated part-time staff or volunteers*- COST-\$16K to \$22K

3) Hours and operational changes

The hours and operational changes include the possibility of implementing some or all of the changes from the above list as well as changes to operational hours and sites open.

- *Closure of two of the four drop-site*- COST- Savings of \$13,000-\$15,000
- *Fencing*- In order to limit the number of hours the remaining two sites are open fencing around the sites would be required. COST-\$15,000-\$30,000 (depending on materials used)
- *Staffing and limiting hours*- To limit the number of non-Westminster residents visiting the sites, keep the sites clean, and discourage illegal dumping and contamination, the city could consider staffing the two remaining sites COST-\$50,000

4) Development of central drop-off

A fourth option for the city is the development of one central drop-off site. Under this option, the city closes all of the sites accepts for one, and focuses all of its efforts in developing and maintaining the one site. The central site would require a number of large scale improvements that would come at a significant cost. This type of program is very successful in other communities and despite high capital start-up costs, the annual costs would be similar to the current program and it would reduce a number of the issues with the current sites. COST-\$55,000-\$90,000

5) Drop-off closures

The final option is the closure of the drop sites. By shutting the sites the city may be going against its goals of increased recycling and environmental responsibility and may face a well spring of citizen opposition. The drop-off sites are a large part of the current diversion rate and

are used by a nearly two-thirds of the residents responding to the survey. COST-Savings of \$33,000

12.4 “Gap” Analysis

The gap analysis examined the overall MSW and diversion programs available to different sectors in the city and identified the areas with potential for improvement. Subsequently, it highlights possible barriers to additional programs in Westminster. The results of the gap analysis, along with the baseline data and city comparables, were used to inform the selection of the various program options for Westminster. The table below summarizes the overall strengths and opportunities uncovered in the Westminster trash and recycling system.

Table 12.3: Strengths and Opportunities (gaps) of Westminster’s Waste Management System

| Strengths | Opportunities |
|---|---|
| <ul style="list-style-type: none"> • Strong “green” ethos among City staff and many of the residents and businesses. • Strong recycling and diversion infrastructure available including multiple single stream MRFs, drop-offs, and haulers with the knowledge and ability to run effective diversion campaigns • Established and successful HHW program • Verbiage in the current City code requiring hauler reporting • Some of the HOAs are including recycling in the trash rates and seeing significantly higher participation than non-HOA areas,(potentially as much as 2-3x higher participation) | <ul style="list-style-type: none"> • Work with haulers to encourage improved reporting of tons collected and recycled to develop a baseline diversion rate • Opportunity to set goals based on the current diversion rate • Examine ways to decrease contamination and costs at the drop-off areas • Participation in curbside recycling among residents is only around 15%. There is a great opportunity to increase residential participation in various ways including options such as Pay-as-you-throw, embedded recycling rates, and mandates. • The haulers are generally using flat rates for disposal fees ranging from about \$8/month to \$25/month. A PAYT program would increase diversion, composting and source reduction and create incentives for SF residents to participate • Multi-family programs such as space for recycling, increased outreach and education, and increased access to recycling across the sector • Commercial recycling programs- “space for recycling” ordinance, including recycling in leases, shared recycling containers for clustered businesses, targeted materials, ABC rules, and others. • Examine programs for the curbside collection of yardwaste/organic materials • There is a large opportunity for increasing diversion in the C&D waste stream through various mechanisms and program options. |

12.5: City Comparables

Interviews were conducted with 19 cities surrounding Westminster. The cities were selected by Westminster staff and range in size from 5,100 (Edgewater) to nearly 600K (Denver). A few of the highlights of the city comparables may be seen in Table 12.6 below.

Table 12.6: Summary of City Comparables

| City | Diversion rate | Trash Collection | Recycling Collection | Large Item Pick Up |
|-------------|------------------------------------|------------------|----------------------|--------------------|
| Westminster | ~7% for Res at curb, ~10-11% Total | Mult. Pvt | All pvt haulers | Haulers |
| Arvada | DNK | Mult. Pvt | Some pvt haulers | City |
| Aurora | DNK | Mult. Pvt | Some pvt haulers | Haulers |

| City | Diversion rate | Trash Collection | Recycling Collection | Large Item Pick Up |
|-----------------|---------------------------------|------------------|----------------------|--------------------|
| Boulder | 31% all sectors, >50% res. only | Mult. Pvt | All pvt haulers | Haulers |
| Brighton | DNK | Mult. Pvt | Some pvt haulers | City |
| Broomfield | 23% in Broadlands HOA | Mult. Pvt | Some pvt haulers | City |
| Centennial | DNK | Mult. Pvt | Some pvt haulers | Not sure |
| Commerce City | DNK | Muni mostly | Contracted | Haulers |
| Denver | 13% 2008 | Muni | Muni | City |
| Edgewater | DNK | Muni, | NA | City |
| Englewood | DNK | Mult. Pvt | Some pvt haulers | Haulers |
| Federal Heights | DNK | Mult. Pvt | Some pvt haulers | No |
| Golden | DNK | Mult. Pvt | All pvt haulers | City and hauler |
| Lakewood | DNK | Mult. Pvt | Some pvt haulers | No |
| Littleton | DNK | Mult. Pvt | Some pvt haulers | City |
| Longmont | 23% | Muni | Muni | City |
| Louisville | 48% 9/09 Res. only | Contract | Contracted | Haulers |
| Thornton | 11% 2008 | Muni mostly | Muni | City |
| Wheat Ridge | DNK | Mult. Pvt | Some pvt haulers | City |

12.6: Residential Set-Out Survey

The residential set-out survey examined the weight of trash and recyclables, participation in a curbside recycling program, the recycling potential remaining in the trash, and contamination of the recycling stream. Most importantly, the set-out survey was used to estimate a residential curbside recycling rate. A short summary of the results is provided in the following bullets:

- **There is significant potential to improve recycling participation and overall diversion:** The overall residential curbside diversion rate is only around 7%⁴⁹.

- The vast majority of households are not subscribing to a curbside recycling program, only 15% of households were observed to be recycling at the curb
- About 85% of households are not recycling at the curb
- For the households that are participating, their diversion rate is on par with some of the higher performing communities in Colorado

Some of the barriers to recycling observed in the set-out survey include:

- For most households (with the exception of some HOA areas) recycling service costs extra
- There is little to no economic incentive to recycle with nearly unlimited trash disposal for a flat fee
- Every-other-week collection combined with small 15-gallon open topped bins may not be a high enough level of service to maximize recycling

- **There is potential to pull more recycling out of the trash cans and increase the City's recycling rate:** Over 50% of the households surveyed had significant amounts of recyclables in their trash.
- **There is potential to improve the aesthetics of trash collection in the City:** Areas with multiple haulers serving the same streets on the same days, few limits on trash disposal amounts, and trash placed in bags instead of containers (about one-fifth), appear messy

⁴⁹ This estimate is for curbside collection only and does not include drop-off recycling tonnage.

with trash consistently in the street. The overall appearance and collection efficiency could be improved in these neighborhoods.

12.7: Residential Web Survey

As a means of assessing the trash and recycling behaviors, program preferences, and willingness to pay among Westminster residents, SERA administered a statistically valid web-survey in late December 2009. The survey was used to determine reported residential trash and recycling behaviors, program preferences, satisfaction with existing programs, and the residential willingness to pay for additional programs.

Trash and Recycling Services

- **Curbside recycling costs extra, potentially limiting residential participation:** Only about 28% of respondents reported that they have recycling included in their trash rates for *no extra charge*.
- **There is little economic incentive for residents to undertake source reduction efforts:** About two-fifths of all respondents reported that they have unlimited trash collection. Without limits on trash set-outs or charging extra for more trash disposal, there is no incentive for residents to decrease their trash generation.
- **Larger recycling bins could be needed:** Over 75% of residents reported that their recycling bins are 100% full or overflowing. Larger recycling carts could be needed to increase recycling amounts.
- **Future programs may want to focus on organic wastes:** Over 75% of residents reported that they had large amounts of food waste in their garbage and 66% reported that they had large amounts of yard waste in the garbage.

Costs

- **There is a large opportunity for PAYT:** Less than 1% of households reported that they have a pay-as-you-throw program for trash collection. Pay-as-you-throw uses economic incentives to encourage recycling while making trash costs more equitable for small households and good recyclers. There is a large opportunity for Westminster to encourage diversion through the adoption of PAYT programs.
- **Average monthly costs are in line with neighboring communities:** The average cost for trash service, per month was reported to be around \$16.50. The average additional cost for recycling was reported to be about \$3.00 per month.

Satisfaction and Barriers

- **In general, private haulers are providing good trash services but could improve recycling services:** Overall, residents reported that they are quite satisfied with most of the services that the private waste haulers are providing. However, when asked to report their level of satisfaction with curbside recycling services, the average satisfaction level was lower, indicating that while residents are satisfied with their trash services, the recycling services could use improvement.

- **Additional City efforts toward education and recycling could be needed:** Residents reported a much lower level of satisfaction regarding City recycling and recycling education efforts when compared to satisfaction with their trash collection services.
- **Expense, difficulty of bringing materials to drop-off, and the lack of curbside programs were reported to be the largest barriers to recycling**
- **There is strong support for additional recycling programs among City residents:** The programs that residents reported they most wanted to see were:
 - Recycling for businesses in Westminster
 - Recycling in public areas and parks
 - Encouraging/increasing public/private partnerships in the City to increase recycling
 - Curbside recycling for all households with the fee embedded in the trash rates
 - Increasing education/outreach for residents
- **There is strong support for Pay-as-you-throw:** Overall, 69% of residents reported that they either *somewhat support* or *strongly support* a pay-as-you-throw program.
- **Residents are willing to pay for more services:** Although there were a number of residents who reported that they did not want to pay for any additional recycling services, on average, residents were willing to pay an addition \$7.87 per month for expanded recycling programs.

Comparisons of HOA and non-HOA areas

The results of the survey were grouped into residents that lived in home owners associations and those that did not. A comparison of the results from the sub-groups was completed. A few of the implications of this comparison include:

- **HOAs are more likely to have curbside recycling programs for no extra fee:** Over 50% of residents in HOAs reported that they had recycling included in their trash rates compared to less than 10% of residents in non-HOA areas.
- **HOA residents are more satisfied with their services in general than in non-HOA areas**

12.8: Commercial Set-Out Survey

To determine the approximate number of businesses in Westminster that are actively recycling, a windshield survey and a series of business interviews were conducted. The table below displays the percentage of surveyed businesses with recycling programs in Westminster.

Table 12.7: Westminster Business Recycling

| | Hauler Provided Recycling | Informal Programs ⁵⁰ | Recycling for Customers | Total with some type of recycling |
|-----------------------|---------------------------|---------------------------------|-------------------------|-----------------------------------|
| Percent of businesses | 24.5% | 21% | 6% | 46% |

⁵⁰ Informal programs are defined as those in which an employee brings materials home to recycle, to a drop-off center to recycle, or some other type of program in which a commercial hauler is *not* involved.

The following set of results was drawn from the data collected:

- **Additional recycling programs are needed to address the businesses sector:** Only one quarter of the businesses surveyed had an official recycling program with a commercial hauler. For the businesses that did have a hauler operated program, in many cases it was only for one material such as cardboard.
- **About one-fifth of the businesses had an informal type of recycling program:** While only 25% of businesses had a hauler for recycling services, just over 20% of the businesses had an informal recycling program where an employee brought the materials to a drop-off or other area for recycling.
- **Offices and “upscale” businesses were more apt to recycle:** Professional businesses such as banks, insurance offices, and others were observed to be recycling most often. Bars and restaurants were less likely to have recycling programs. This may be due to limited budgets, shared dumpsters, lack of control over their trash services, or other barriers.
- **A shared recycling container program may be a strong option:** The results of the survey indicate that there is an opportunity to explore a shared dumpster recycling program. Cities such as Charlotte, NC and Jackson, WY have successfully implemented a shared dumpster service for cardboard and office paper.

12.9: Commercial Web Survey

In order to assess the commercial trash and recycling behaviors, program preferences, barriers to recycling, and willingness to pay, a statistically valid commercial web survey was conducted. The following implications can be drawn from the results of the survey:

- **Haulers are typically not providing recycling services to businesses:** Only about one-fifth of the businesses reported that they contracted with their hauler to provide recycling service. Nearly half of the businesses reported that they were *not* undertaking any recycling behavior. About one-fifth of businesses reported that they had an “unofficial” recycling program. These results are in line with the data gathered during the commercial set-out surveys.
- **Food waste/organics programs may be a lower priority in the commercial sector:** Overall 80% of the businesses reported generating no yard waste and almost 50% reported generating no food waste. Less than 10% of the businesses interviewed reported generating a significant amount of food waste⁵¹.
- **Recycling programs targeting fiber streams (paper and cardboard) are the most common *and* the most needed**

⁵¹ This does not imply that food waste should *never* be addressed in the commercial sector. When asked to report on what materials remained in the trash after any recycling, 46% of the businesses reported they had food waste in their trash and national waste composition studies indicate that nearly 25% of the total US waste stream is made up of organic materials (2007 Municipal Solid Waste in the United States, US EPA 2008)

- **Businesses are generally satisfied with their trash service and unsatisfied with recycling options:** Businesses reported a relatively high level of satisfaction with their garbage service while the level of satisfaction for recycling options and the City's efforts toward encouraging recycling were relatively low.
- **Programs targeting property management companies and overcoming space issues are needed:** The results of the survey indicated that these were the two largest barriers to increased diversion.
- **There is a disconnect between business wants/need and their willingness-to-pay:** Overall, businesses in Westminster are supportive of additional and expanded recycling programs but do not want to pay for the programs. The average per monthly willingness to pay was only \$13.58 with a median of \$0.00.
- **The programs with the highest level of support among businesses were:**
 - A bar and restaurant recycling program for glass and aluminum
 - A program where near-by businesses can share a recycling container for cardboard
 - Increased education/outreach for businesses
 - Setting a recycling goal for the city

12.10: Hauler Surveys

Waste haulers serving the City of Westminster were contacted to determine what services they offer residential and commercial accounts in Westminster.

Trash and Recycling Rates

- The reported monthly cost for residential trash collection ranges from \$12.00 per month to over \$21.00 per month. None of the haulers reported that they were using a variable rate or pay-as-you-throw structure for billing⁵².
- All of the haulers reported that they do offer residential recycling. Typically the haulers charged extra for residential recycling services. The exception to this was reported to be in HOA areas where recycling may or may not be included with the trash rates in the HOA fees. Recycling was reported to cost between \$2.25 additional per month to \$5.00 additional per month.
- All of the haulers reported that they do offer special item or bulky item pick-up. Special item pick-up was reported to cost between \$15.00 to over \$30.00 per collection depending on the hauler and the item.

⁵² Three of the haulers do offer PAYT in other communities they serve in Colorado.

APPENDIX 1: COMMERCIAL RECYCLING STRATEGIES AND PRACTICES

Commercial recycling programs are becoming more widespread throughout the country as program managers are trying to meet higher and higher diversion goals. In the majority of mandatory commercial recycling programs, the residential sector has already been addressed and significant residential recycling/diversion rates have been achieved.

The commercial sector makes up between 35-45% of the total waste stream in the US⁵³. In general, recycling programs are implemented and refined in the residential sector and then expanded to cover the commercial waste stream^{54,55}. There is significant potential to increase diversion in the commercial sector in Westminster. However, there are a number of factors that make this sector unique and that must be considered when discussing the commercial sector. These include:

- **Waste stream-** unlike the residential waste stream, commercial waste is not homogenous, each business type, size, and location may generate vastly different types of waste.
- **Space-** lack of space for recycling is often cited as a major concern in commercial programs
- **Lack of control over bills-** many commercial entities do not have control over their bills. The trash and recycling is often contracted through a property management company.
- **Cost-** Larger businesses may be able to reduce their trash service levels (and costs) through recycling. However, smaller businesses may already be on the lowest level of trash service and are not able to reduce their trash subscription level to save money through recycling.
- **One program does not fit all-** In the residential sector it is feasible to use a blanket program that covers all households. Each business in the commercial sector faces its own barriers (space, materials, customer type, janitorial staff, property managers, etc.) and a battery of program types might be necessary to address the entire sector.
- **Enforcement-** without proper enforcement (and outreach) the program will not be successful.

The table below displays both the strengths and potential weaknesses related to mandatory commercial recycling programs. The table was developed through SERA research of mandatory commercial recycling programs across the US.

Table 1: Strengths of Mandatory Commercial Recycling Programs from SERA National Study

| Program Element | Description of Strengths |
|----------------------|---|
| Increased diversion- | All of the programs reported that the commercial diversion has increased due to mandatory recycling |

⁵³ *Municipal Solid Waste in the United States, 2007 Facts and Figures*. US EPA Office of Solid Waste, EPA530R-08-010, November 2008.

⁵⁴ Skumatz, Lisa and Freeman, Juri. *Increasing Recycling in the Commercial Sector: Assessment of Mandatory Commercial Recycling Programs and Exclusive Hauler Arrangements*. 2009, Prepared for Alameda \$topwaste.org

⁵⁵ Skumatz Lisa and Freeman, Juri. *Recycling Study Targeting Small Businesses in Mecklenburg County, NC*. 2008. Prepared for Mecklenburg County Solid Waste Department

| Program Element | Description of Strengths |
|-------------------------------|---|
| Increased access/opportunity- | Programs increase access and the opportunity for all business to participate, divert materials, and in some cases realize monetary savings in trash costs |
| Increased revenues- | Haulers and recyclers reported that the program can increase revenues available to support diversion initiatives |
| Increased customers- | Potential to increase customer accounts for haulers and recyclers |
| Market development- | May help bring processors, or end-users into the area |
| Market development (haulers)- | May increase opportunities for haulers and bring in new haulers/competition |
| Efficient Design- | Some target specific sectors with large amounts of waste, or exempt small generators to reduce administrative hassle with minimal impact on waste diversion |
| Addresses all sectors- | Instead of placing the burden of diversion only on the residential sector, the entire community is responsible, no sector is exempt |
| Flexibility- | The program can offer flexible options for diversion for each business type |
| Goals- | Programs can be designed with community goals in mind and can be crafted to address certain materials or diversion aims |
| Reporting- | Programs can require reporting and tracking of diversion and disposal in the sector which might not have been done previously |
| Economies of scale- | Increased efficiencies in collector routing and processing by requiring all businesses to participate |

Table 2: Weaknesses of Mandatory Commercial Recycling Programs from SERA National Study

| Program Element | Description of Weaknesses |
|------------------------------|--|
| Increased costs- | May increase the costs for haulers and generators |
| Need for infrastructure- | Without proper infrastructure to handle the additional recycling stream the program may not be successful |
| Politics- | May require market intervention by City/County, possible negative political reaction by some actors |
| May drive out small haulers- | Depending on the hauler's ability to adapt, some haulers report that the programs may push them out of the market and favor larger haulers |
| Reporting- | Added burden to City staff, haulers, and generators to complete necessary reporting |
| Incentives- | Depending on program design there may not be incentives for the generator or haulers to increase participation above minimum requirements |
| Enforcement (generators)- | Can build resentment and resistance to the program among generators |
| Enforcement (haulers, City)- | May add time and cost to enforce the program to City staff and/or haulers |

| Program Element | Description of Weaknesses |
|---------------------------------|--|
| May not increase participation- | Although the opportunity is offered for all businesses to divert materials, without proper planning the program may not increase participation |
| Not the best way to meet goals- | If the goal is increased diversion tonnage, forcing 100% participation may not be the most effective or equitable way to achieve it. Focusing on the largest generators and those that can reduce trash bills through recycling may work better and may be less expensive from a social point of view. |

Best Practices

The following is a listing of the strong points and lessons learned from SERA's national research:

- **Development/planning:** It is important to involve a number of relevant stakeholders in the ordinance/program development. In communities where a stakeholder committee was not used in the development, there is at best a noted resentment among haulers and generators, and at worst, the program does not work optimally. The stakeholders have the advantage of being on the ground, knowing what materials are easiest to address, and can help spread the word of the impending ordinance among the affected sectors. Suggested stakeholders include:
 - City staff
 - trash haulers
 - recycling haulers
 - trade organizations (i.e. restaurant organization, school organizations, etc)
 - property management companies
 - janitorial staff
 - others
- **Inventory:** Know what facilities are and are not available for the collection and processing of the materials that will be affected by the ordinance. If haulers are not already collecting recycling from a large proportion of the commercial sector, it may be difficult for them to start doing so without ample lead time. Haulers reported that they often need significant time to order carts, trucks, etc. and without the proper equipment they would be unable to serve the sector. Also, be aware of processing issues, is there single stream, C&D, composting, etc. that will be able to handle the additional recycling streams. If a certain material(s) is targeted through the program it is important to ensure that there is an accessible alternative for disposal. Programs were reported to help bolster already existing markets but all of the interviewed staff, haulers, and recyclers reported that it was important that the targeted material can be readily collected and processed.
- **Space for Recycling:** A number of City/County interviews reported that space for recycling was an issue for certain businesses. This was especially true if single stream collection is not available and multiple collection containers are necessary. Planning for this issue ahead of time, working together with generators/haulers, and adopting "space for recycling" ordinances can help alleviate the barrier. Additionally, it is important that any recycling enclosure requirement meshes with the mandatory recycling program specifications. If there is a strict recycling enclosure ordinance it could make it difficult for businesses to comply with the mandatory recycling requirements.

- **Menu of Options:** Flexibility of program design is important in the commercial sector. Unlike the residential sector that has a rather homogeneous waste stream, the commercial waste stream can vary greatly from business to business. Set a menu of possible mandatory recycled materials that the generator must choose from to help address the large variations of material generation in the commercial sector. These options can be lumped into larger groups and the generator can choose a group that they are going to recycle. The selected menu group must be the materials that are most generated at each site.
- **Efficiency in Design:** Targeting specific sectors or exempting small generators can allow a community to retain the bulk of the diversion impact but reduce administrative or enforcement burdens. It might not be necessary to increase participation to 100% to increase the overall diversion by a significant amount. Through targeted programs diversion and cost effectiveness can be maximized. Phased implementation is also an option to increase the effectiveness of the program. By targeting the largest generators first and looking at smaller generators later on in the program's evolution is a technique that has been used with some success in other communities.
- **Enforcement:** Enforcement is necessary for a successful program. Most of the ordinances give a grace period prior to strict enforcement, but all report that without enforcement the programs will not be successful. Enforcement can be handled by any of a number of entities depending on the program design. Haulers can also shoulder part of the responsibility through material bans (at the curb or landfill, T/S) or through auditing and reporting. Enforcement can include simple participation in the program to mandated diversion rates. If diversion rates are used, include source reduction in the computations (for example, a business could greatly reduce its use of paper (duplex copying, etc) but not see a corresponding rise in their diversion rate).
- **Reporting:** Reporting by haulers to the City/County, the City to the County/state, or the generators to the City, County, or State, is integral to success. Reporting also ties in to enforcement. Clear and concise language included in any mandatory program may help to alleviate issues related to reporting for haulers, generators, and the City.
- **Recycling Plans:** Short, succinct, recycling plans filed by the generator with either the hauler or municipality/County is important. These plans allow for easy tracking and can help the generator plan efficient collection of materials.
- **Education/Outreach:** As with any new recycling or diversion program, education and outreach are integral. All effected stakeholders must be aware of the program including haulers, recyclers, and generators and by involving the groups early on in the process it may help spread information. A lead time of 3 to 6 months was reported to be sufficient to allow for the necessary actors to learn about the program. Signs for tenants, bilingual information, and site visits by the responsible entity were all listed as effective means of education and outreach. Another effective outreach tool uncovered in the research was multi-resource audits. By combining a waste audit with energy and water efficiency audits it may help to increase the leverage available to the City/County and reduce the costs associated with the audit.

APPENDIX 2: RECYCLING DROP-OFF PHOTOS

Photo 1: Current Materials Collected showing clean streams (photo provided by Alpine)



Photo 2: Municipal Court Drop-Off demonstrating the limited signs and the size of the signs



Photo 3: West View Recreation center showing limited signs for materials accepted, illegal dumping, or signs giving city residents ownership of the site.



Photo 4: Overflow at Westminster MSC site



Photo 5: Overflow recycling at Westminster drop-off.



Photo 6: Example of modified lids and large illegal dumping sign (photo from Lake County, IN)



Photo 7: City of Fort Collins drop-off site



Photo 8: Illegal dumping sign (From CalRecycles, formerly CIWMB)



Photo 9: Windsor drop-off area



APPENDIX 3: CITY COMPRABLES TABLES

Trash Service

| City | Population | County | How Residential Trash Service Provided? | | | | | How is Trash Service Paid For? | | | | Is Trash Service PAYT? | Average Monthly Cost for Residential Service |
|-----------------|------------|------------------|---|-------------------|--------------------------|---------------------------|---------------|--------------------------------|----------------------|----------------------------------|-----------------------------|---|--|
| | | | Municipal | Contracted Hauler | Multiple Private Haulers | Number of Private Haulers | Utility Bills | Property Taxes | Individual Contracts | Other | | | |
| Westminster | 106,300 | Adams, Jefferson | No | No | Yes | 8 | No | No | Yes | | No | \$8-\$25 | |
| Arvada | 107,361 | Jefferson | No | No | Yes | 7 | No | No | Yes | | No | DNK | |
| Aurora | 319,057 | Adams | No | No | Yes | 16 | No | No | Yes | | No | DNK | |
| Boulder | 94,171 | Boulder | No | No | Yes | 4 | No | No | Yes | | Yes | \$16-\$23/Mo | |
| Brighton | 31,388 | Adams | No | Yes | | at least 3 | No | No | Yes | | No | DNK | |
| Broomfield | 54,858 | Broomfield | No | No | Yes | 10 Res, 9 C&I | No | No | Yes | | No | Hauler dependent | |
| Centennial | 99,680 | Arapahoe | No | No | Yes | DNK | No | No | Yes | | No | | |
| Commerce City | 42,473 | Adams | Yes | Yes | No | 1 | | | | City Budget, out of general fund | No | \$13/Mo for trash and recycling | |
| Denver | 598,707 | Denver | Yes | No | No | | No | Yes | No | | No | \$10/HH/Mo | |
| Edgewater | 5,136 | Jefferson | Yes | No | No | | Yes | No | No | | No | \$12.50/Mo | |
| Englewood | 32,669 | Arapahoe | No | No | Yes | 12 | No | No | Yes | | DNK | DNK | |
| Federal Heights | 11,732 | Adams | No | No | Yes | 5 or 6 | No | No | Yes | | NO | DNK | |
| Golden | 17,321 | Jefferson | No | No | Yes | 7 | No | No | Yes | | Not yet, but planning on it | \$15/Mo for trash and recycling to \$28.25/Mo, costs are a year old; averages to \$20-\$25/Mo | |
| Lakewood | 140,989 | Jefferson | No | No | Yes | 10 | No | No | Yes | | No | \$30/Mo | |
| Littleton | 40,777 | Arapahoe | No | Yes | Yes | 4 | No | No | Yes | | No | \$26.02/Mo | |
| Longmont | 85,928 | Boulder | Yes | No | No | | Yes | No | No | | Yes | \$14.28/1 96gal/Wk, \$11.27/1 48gal /Wk, extra 96gal \$10.14/Mo, extra 48gal \$6.60/Mo | |
| Louisville | 19,133 | Boulder | No | Yes | No | | Yes | No | No | | Yes | Whole range of prices for 96gal, 64gal, 32gal trash and compost from \$11.20-\$29.40/Mo; have sheet of tonnages | |
| Thornton | 113,429 | Adams | Yes | No | Yes | | Yes | No | Yes | | Yes | Weekly trash & EOW recycle, 1 container \$13.50/Mo, 2 \$16/Mo, 3 \$25.20/Mo, 4 \$34.40/Mo | |
| Wheat Ridge | 30,894 | JS | No | No | Yes | 8 or more | No | No | Yes | | No | \$13.00/Mo | |

Recycling Service

| City | Available | How Service Provided? | | | | Materials Residents Can Recycle C/S | | | | Why Multiple Private Haulers Provide Recycling Service | | | | C/S Organics Coll'n? |
|-----------------|-----------|-----------------------|--------------------|-------------------------------------|--|-------------------------------------|-------------------|-------------|---------------------|--|-----------------------------|---------------------------------------|--|-------------------------|
| | | Municipal Collection | Contracted Haulers | All Private Haulers provide service | Some Private Haulers Provide Service and Some Do Not | Not Sure | Depends on Hauler | Boulder Mix | Is it SingleStream? | Mandated to Offer Service | Mandated to Provide Service | Business Decision/Value Added Service | HOAs Included? | |
| Westminster | Yes | No | No | Yes | | Yes | | | | Yes | | | | No |
| Arvada | Yes | No | No | No | Yes | | Yes | | | no | | | | Might be |
| Aurora | Yes | No | No | No | Yes | | Yes | Yes | Yes | No | No | Yes | No | No |
| Boulder | Yes | No | No | Yes | No | | | Yes | Yes | No | Yes | No | Yes, when old contracts up | Yes |
| Brighton | Yes | No | No | No | Yes | | Yes | | | No | No | Yes | DNK | DNK |
| Broomfield | Yes | No | No | No | Yes | | Yes | | | No | No | Yes | No | No |
| Centennial | Yes | No | No | No | Yes | Yes | | | | No | No | Yes | | No |
| Commerce City | Yes | No | Yes | No | No | | | Yes | Yes | No | No | Yes | Yes, when old contracts up | No |
| Denver | Yes | Yes | No | No | No | | | | | | | | | Yes |
| Edgewater | No | | Yes | | | | Yes | | | | | | | No |
| Englewood | Yes | No | No | Not likely | Yes | | Yes | | | No | No | Yes | DNK | DNK |
| Federal Heights | Yes | No | No | No | Yes | | Yes | | | No | No | Yes | | DNK |
| Golden | Yes | No | No | Yes | No | | Yes | | Yes | No | No | Yes | N/A | Not yet, planning on it |
| Lakewood | Yes | No | No | No | Yes | | Yes | | Yes for WM | No | No | Yes | N/A | No |
| Littleton | Yes | No | No | No | Yes | | Yes | | | No | No | Yes | | Yes |
| Longmont | Yes | Yes | No | No | No | | | Yes | Yes | | | | | Not yet |
| Louisville | Yes | No | Yes | No | No | | | Yes | Yes | | | | Yes, exempted if provide equivalent services | Yes |
| Thornton | Yes | Yes | No | No | No | | | Yes | Yes | | | | | No |
| Wheat Ridge | Yes | no | no | no | Yes | | | Yes | Yes | No | No | Yes | | No |

Reporting/Mandates/Other

| City | Diversion Rate | Mandatory Reporting of Collection? | Are HOAs Monitored/Dealt with Differently? | Other Mandates/Ordinances Regulating Haulers in City? |
|-----------------|----------------------------------|------------------------------------|--|--|
| Westminster | ~7% for Res | Yes, not enforced | No | Must offer service to Res |
| Arvada | DNK | No | No | No |
| Aurora | DNK | No | No | No |
| Boulder | 31% 2009 est, 40% 2006, 34% 2005 | Yes | Yes, when contracts up for renewal then they have to have recycling. YW/Organics still not mandatory yet | Yes, haulers must provide recycling and compost service |
| Brighton | DNK | No | DNK | No |
| Broomfield | 23% in Broadlands HOA | No | No | No |
| Centennial | | No | No monitoring | No |
| Commerce City | DNK | No | Yes, when contracts up for renewal then they can offer recycling | |
| Denver | 13% 2008 | Yes | DNK | No |
| Edgewater | | No | N/A | No |
| Englewood | DNK | No | DNK | No, just must have trash service |
| Federal Heights | DNK | No | No | No |
| Golden | DNK | Not yet, but will be | Yes, no ordinances for them, just individual contracts | Yes, haulers must provide recycling if resident wants it |
| Lakewood | DNK | No | No | No |
| Littleton | 70% city blds, DNK for res | No | No | No |
| Longmont | 23% since SS, 18% 2008 | No, but know #s | Yes, if more than 8 units, can opt out of city supplied services | Yes, SF must use city services w/ mandatory recycling |
| Louisville | 48% 9/09 | Yes | Yes, exempted if have equivalent services, but some ambiguity in "equivalent" so are working to redefine | Western must provide recycling and composting |
| Thornton | 11% 2008 | No | No | No |
| Wheat Ridge | DNK | No | DNK, not many HOAs | No |

Large Item Pick Up

| City | Available | Call or Scheduled | Describe | Who Provides? | Does City have any Control/Involvement in Prog | How Often Do Collections Occur? | Do Residents Pay for Service? | Does City Pay for Service? | What is Cost to Residents? | What is Cost to City? |
|-----------------|-----------|---------------------|---|--------------------|--|---------------------------------|-------------------------------|----------------------------|----------------------------|---|
| Westminster | No | | Dropped program due to cost | Haulers | No | On call | Yes | No | Depends | \$56K in 2008 |
| Arvada | Yes | Scheduled | 5/4/09-5/22/09 PU on certain date depending on address | City | Yes | 1X/Yr | No | | None | TBA |
| Aurora | Yes | | Arranged by hauler | Hauler | No | | | | | |
| Boulder | Yes | Call for service | Not city-wide or run, hauler dependent, charge fee; no more Spring Clean-Up | Hauler | No | | Yes | No | | None |
| Brighton | Yes | Scheduled | Annual Trash Bash, residents tend to gather relatives' stuff & then put it out so it's w expensive for city | City | Yes | 1X/Yr | No | Yes | None | Very expensive, city may discontinue |
| Broomfield | Yes | Scheduled | Spring Clean-Up, 3 weeks scheduled by streets | City | Yes | 1X/Yr | No | Yes | None | |
| Centennial | No | | Could be provided by private haulers | Hauler? | | | | | | |
| Commerce City | Yes | Call | Call WM 24 hours ahead of trash P/U- Cost to city is included in the City Contract | WM | No | When call | No | Yes | None | |
| Denver | Yes | Scheduled | LIP- large item pickup, trash crews p/u every 5 weeks (will change to every 9 weeks) according to schedule | City | Yes | 1X/5Wk | No | Yes | None | DNK just picked up w/ trash |
| Edgewater | Yes | Call | city provides service, call to schedule | City | Yes | When request | No | Yes | None | |
| Englewood | No | Call | D/O only at Waste Transfer Station, call to schedule, WM supplies \$20 coupon for 1X/Yr, after that must pay full amount | Hauler | No | N/A | Yes | No | \$0 to more | None |
| Federal Heights | No | | | | | | | | | |
| Golden | Yes | Scheduled | D/O Golden Pride Days, 1st May weekend; city run, residents free; P/U haulers provide & charge; also coupon for 1X/Yr P/U free at Golden Recyc Center | City D/O, Hauler | Yes, No | 1X/Yr, when | No, Yes | Yes | None, range | \$30,000 for GPD |
| Lakewood | No | | | | | | | | | |
| Littleton | Yes | Call | Keep Littleton Beautiful Summer Clean-up Program, city crews (3 full-time employees) p/u items May-Aug, first come first serve appointments, recycle what can & dispose of the rest; in 2008, 674 pick-ups w/ 186 appliances recycled, 33,080 lbs metal recycled, and Freon removed from 59 refrigerators | City | Yes | 1X/Yr | No | Yes | None | \$34,000/Yr: \$11,000 for dump and recycling fees plus \$23,000 for 3 FT employees salaries for 16 Wks @ \$12/Hr for 40 Hr/Wk |
| Longmont | Yes | Call: D/O Scheduled | P/U call to schedule, min \$33.32 and up paid in utility bill, Thurs of current week; Stop-N-Drop Event D/O 8-2, 5X/Yr; city unloads, free for res. provided by Public Works Solid Waste Operations | City; Public Works | Yes; Yes | When request | Yes; No | No; Yes | \$33.32 min; None | |
| Louisville | Yes | Call | P/U call to schedule & Western will let you know if costs, one item free/quarter- included in the Contract for the City | Hauler | No | 4X/Yr | No | No | None | Included in contract |
| Thornton | Yes | Scheduled | P/U at scheduled time 1X/Yr in spring, if p/u other time then charged | City | Yes | 1X/Yr | No | Yes | None | \$250,000/Yr |
| Wheat Ridge | Yes | Call for Scheduled | P/U in spring by Dept Public Works, pre-register at scheduled date, free | City | Yes | 1X/Yr | No | Yes | None | May not have funds this year |

Tree Limb Service

| City | Available | Describe | Who Provides Service? | Does City have any Control/Involvement in Prog? | Who Pays for Service? | What is Cost to Residents? | What is Cost to City? |
|-----------------|-----------|--|------------------------|---|-----------------------|----------------------------|--|
| Westminster | Yes | Drop-off | City | Yes | City | None | |
| Arvada | Yes | Two drop-off sites | City | Yes | City | Free | TBA |
| Aurora | Yes | | Hauler | No | | | |
| Boulder | Yes | D/O @ Western Disposal 7-5, M-Sat thru Nov 27 City will P/U after storm but otherwise res responsible for own | City & County | Yes | City | None | \$48.08/ton subsidized by city, about \$100K total subsidization by City |
| Brighton | No | | | | | | |
| Broomfield | Yes | D/O open year-round, staffed, Sat 8-5, Wed 1-5 | City's Park Operations | Yes | City | None | Don't keep track of |
| Centennial | No | Could be provided by private haulers | Haulers? | | | | |
| Commerce City | No | | | | | | |
| Denver | No | can put out for LIP, 5 bundles/time for trash | | | | | |
| Edgewater | Yes | just leave it at the curb | City | Yes | City | None | |
| Englewood | No | | | | | | |
| Federal Heights | No | | | | | | |
| Golden | No | can bring limbs to GPD and will grind | | | | | |
| Lakewood | No | can take to Rooney Road | | | | | |
| Littleton | No | can have them p/u branches at Summer Clean-Up | | | | | |
| Longmont | Yes | 1) One city-wide collection of limbs and leaves in April, free; 2) year-round by appt. c/s, free to recyclers; 3) D/O Tree Limb Diversion Center, free, 8-4 7 days | City | Yes | City | None | \$160,000/Yr |
| Louisville | Yes | now c/s with organic p/u, closing Branch D/O site Jan 15, 2010 | City | Yes | will be Res. was City | Trash bill | None: was \$20,000/Yr. Was Branch D/O open first weekend of every month, closed Feb & Mar, closing 1/15/10 |
| Thornton | Yes | D/O @ Thornton's Infrastructure Maintenance Center 10-2 once a month Mar -Oct, | City | Yes | City | None | \$10,800/Yr. \$6000 OT labor, \$4800 chip; just bought chipper for \$25,000 |
| Wheat Ridge | NA | | | | | | |

Recycling Drop-Off

| City | Is there Recycling Drop-Off Located in City? | | Who Owns Drop-Offs? | Who Operates the Drop-Offs? | | | | Is it Manned? | Hours and Days of Operation? | What Materials? | Is Glass Collected? | Issues with Contamination at Site? | Approx Costs to Operate Recycling Drop-Off per Year | | | | |
|-------------|--|------------|-----------------------------|-----------------------------|---------|----------------------------|----------------|---|-------------------------------|-----------------|---|---|---|-------------|--|---|--|
| | Yes/No | How Many? | | City? | County? | Private Entity? | Other? | | | | | | | Yes/No | Boulder/Mt. Others/Notes | Is it SS? | Yes/No |
| Bremerton | Yes | | Yes | | | Yes | Yes | Sometimes | 24/7 | Yes | | Yes | Use City staff to clean and monitor | About \$20k | | | |
| Avada | Yes | DNK | | | Yes | | Yes | No | DNK | | No | | | None | | | |
| Aurora | Yes | | 1/Yes 2/ Yes City of Denver | 2/Yes Arapahoe | | 1/Yes 2/Yes City of Denver | 2/Yes Arapahoe | 1/Yes 2/Yes | 1/8AM-1PM M-F 2/ 9AM-4PM T-Sa | 1/Yes | Types bags w/ stuff in them ok to throw in as unit | 1/Yes 2/Yes | 1/Yes | No | 1/ City no cost except for \$300 storage. WM provides hauler service for no charge to city - they do self the materials collected | | |
| Boulder | Yes | | | Yes | | Yes | Ecocycle | No | 24/7 | Yes | | | | DNK | | | |
| Brighton | Yes | | 5 | | | Yes | | No | DNK | 1/Yes | 1/Also dried paper in paperbags no foil, no pretzels no aerosol cans | 1/Yes | 1/Yes | 1/No | | | |
| Broomfield | Yes | | 1/Yes | | | Yes | | No | 24/7 | | 1/Also dried paper in paperbags no foil, no pretzels no aerosol cans news, OCC, white paper, cans glass bottles, plastic bottles 1&2, textiles, milk and juice containers, shoes & hardhat books | OCC & newspaper kept separate, SS otherwise | Yes | No | Camera 24 hour/day helped eliminate contamination | \$60,000 budgeted for 2010 | |
| Centennial | No | Yes | | | Yes | | Yes | | | | | | | | | | |
| Commerce C | Yes | 1-15 | 1/Yes | | | | | 1/No | 1/Down to dock 7 days | 1/Yes | | 1/Yes | 1/Yes | Yes | 1/ contamination of materials and people often dump unwanted electronics and furniture if a container is contaminated too often then they remove it | DNK | |
| Denver | Yes | | 7 | | Yes all | | Yes all | 1/No | 1/7-4, MP 24/7 always open | | | | Sometimes | | DNK. El Jebel Shiners operate | | |
| Edgewater | Yes | | 2/Yes | | Yes | Yes | Yes | No | 24/7 | | news, OCC, white paper, cans glass bottles, plastics 1&2 | | Yes | | Contamination is a big issue, might be dropping prog w/ WM | | |
| Englewood | Yes | | 2 | | Yes | | Yes | 1/No | 1/24/7 | | news, OCC, white paper, cans glass bottles, plastic bottles only | Yes | Yes | 1/Yes | | DNK | |
| Federal Hg | No | | | | | | | | | | | | | | NA | | |
| Golden | Yes | | 1/Yes | | | Yes | | No | 7-7, M-Sun | Yes | sep bin for free items Rocky Mt Glass partners to supply 3l yr roll-off for glass only | Yes, glass can be sep or commingled too | Some | Yes | Contamination not a prob. Its help reduce messes | \$1100-\$1200/Mo | |
| Lakewood | Yes | | 1/Yes | | | Yes | WM operates | No | 24/7 | Yes | | No | Yes | Yes | Bins overflow | \$0 for city, WM operates for free | |
| Littleton | No | | | | | | | | | | | | | | | | |
| Longmont | Yes | | 1/Yes | | | Yes | Was Ecocycle | Just switched to city | Yes | 8-4 M-Sun | Yes | non-refrigerator appliances accepted | | No | | | |
| Louisville | Closed | | 1/Yes | | | Yes | Was Ecocycle | | No | | Yes | Ecocycle ran | No | No | DNK | \$40,000/yr, shared costs w/ Lafayette so \$20,000/city, got revenue that almost offset cost when market was good | |
| Thompson | Yes | | 4/Yes | | | Yes | | | No | 24/7 | Yes | | Yes | Yes | Yes | contamination minimal and never rejected, some messes but not big deal | \$100,000/yr for trailers for later and trucks |
| Wheat Ridge | Yes | at least 8 | | | Yes | | Yes | El Jebel Shiners run a bunch, county runs Rooney Road | | | | Boulder Milk, but no tubs | | | | | |

| Other Programs | | | | | |
|-----------------------|--|---|------------------------------------|--------------------------------|---|
| City | Is Christmas Tree Recycling Provided to Residents? | | | Do You Have Any E-Waste Progs? | |
| | Yes/No | Describe | Approx Costs to Run Prog? | Yes/No | Describe |
| Westminster | Yes | Seasonal drop-off. Boy Scouts are offering a collection program for charity | | No | Private sector only |
| Arvada | Yes | D/O 12/26-1/18 & 3:00 - 3:30 M-F at City Park Maintenance Shops and 2 other locations | TBA | No | |
| Aurora | Yes | D/O 12/26-1/14 city offers at 4 locations, free to residents, free mulch | DNK | Yes | E-cycle event Sat Feb 26 9-2 \$15 for TV, \$2 sm household item, \$5 front project TV, 1\$/inch back project TV, other items free |
| Boulder | Yes | D/O 12/26-1/31 @ Western Disposal, composted, can leave C/S now too | \$4000/Yr for one month before C/S | No | Western accepts ewaste for charge for larger items; CHaRM accepts items too |
| Brighton | Yes | C/S, D/O daytime city run | | Yes | at one HHW event |
| Broomfield | Yes | D/O 12/13-1/19, 5 diff locations, city-run | DNK | Yes | at same time as HHW 2X/Yr spring and fall, free to residents, appointments, 28,000 lbs ewaste |
| Centennial | No | Private haulers do some programs like chipping | | No | Private industry |
| Commerce C | Yes | D/O 3 locations operated by Parks and Rec Dept | Minimal b/c use current staff | No | |
| Denver | Yes | PU from curb on trash day for the 2 weeks after Xmas, partner w/ Parks and Rec, ground to mulch and given away in May | \$5000, 2009 not including labor | No | is Best Buy Grant w/ Met Tech, submit request for coupon for discounted rates for ewaste |
| Edgewater | Yes | | | Yes | annual event to collect HHWs, metals, and ewaste |
| Englewood | Yes | D/O after Xmas, Parks Dept shreds then offers free mulch | DNK | Yes | partner w/ Littleton, June for ewaste only, also 2 other times w/ HHW |
| Federal Hg | No | | | No | |
| Golden | Yes | D/O at certain location for a few weeks, grind on site, provided by City of Golden Forestry Division | | Yes | D/O or PU by appointment only at or by Rooney Road Recycling Center, fee charged, Golden Pride Days, free collection |
| Lakewood | No | D/O at Rooney Road, \$2/tree | DNK, run by Rooney Rd | No | Rooney Road accepts for a fee |
| Littleton | Yes | D/O 12-26-1/10 7 days during daylight, run along with South Suburban Parks and Rec. @ Cornerstone and Park, and Willow Springs Service Center, in 2008, 850 trees, 20 hr chipping @ \$20/Hr, \$500 for employee, \$300 dumpster, then \$1200/Yr | \$1200/Yr | Yes | Electronics Recycling Day, June, city sponsored, free for residents - 2008, 42,000 lbs equip recycled |
| Longmont | Yes | D/O 12/26-1/5 5 locations & Tree Limb Diversion site, use open space staff, contractors shred them | \$1000-\$3000 | Yes | Changing Stop-N-Drop 4X/Yr produced 200 tons of metal and 60,000 lbs/yr ewaste; may get separate ewaste event |
| Louisville | Yes | D/O @ Branch Recycle Site, use Boy Scouts for PU | | Yes | Electronics D/O Sept 5 1-4 @ Fall Festival, fee collected |
| Thornton | Yes | PU from curb, 2 weeks in Jan, chipped; D/O 1 Sat | DNK | Yes | Adams County Chemical Round-Up 2X/Yr D/O, has ewaste recycler that charges |
| Wheat Ridge | Sometimes | If budget permits, then program | DNK | No | |

FollowUp

| City | Any Other Important Trash or Recycling Services Avail to Residents? | What | Any Changes Planned for the Trash and Recycling Programs? |
|--------------|--|---|---|
| Arvada | Yes | Leaf and Limb D/O April - Nov 4:00 PM Fri - 9:00 AM Mon @ city's Wadsworth Public Works Facility | Looking at revising mandates on trash service, investigating contracting by district, PAYT, and single stream collection |
| Aurora | Yes | Shredding Event - free for ms and businesses, Nov 1-30 D/O unlimited quantities of paper to be shredded @ Cubside Data Control & Confidential Screening 8-4; if need to see it shredded then Tues by appt only for \$25 for up to 6 boxes | New council members coming in so they are hoping to make some changes, using grants from stimulus for SS D/O on N side of city, and to subsidize CIS HHW P/U \$85 out of \$100 call to schedule ongoing all year; mercury-containing devices & used alkaline batteries D/O 7:30-1:30 Nov 18 @ Fire Station, residents only; Holiday Recyc/Oil 10-3 Nov 28 @ Fire Station free for res and non-res. Wear and tear on streets b/c of multiple haulers a concern they may address. |
| Boulder | | | Full leaf collection and Spring Clean-Up discontinued, had cost \$200,000/yr, new site for CHaRM and reSource center to create "Recycle Row", institute commercial recycling and C&D recycling center |
| Brighton | Yes | HHW TX/ty electronics accepted, \$10 donation | Yes, everything |
| Broomfield | Yes, Appliances for free, Leaf & Pumpkin recyc in Oct/Nov, Waste Oil Recycl Prog, Cooking Oil Recycl Prog, HHW - Boulder County HHW facility | | |
| Centennial | No | | Xeriscape, water conservation, Spring Clean-Up Event 3 weeks in Spring w/ 1 P/U per Yr of large item |
| Commerce C | Yes | Citizen group does waste 2X/yr, residents make donation of about \$1C | Not anticipating many, but may get waste partnerships with other businesses and cities |
| Denver | Yes | Leaf Drop Off to D/O 2 sites/weekdays 5 sites/weekends, A1 Organics composts the leaves; Appliance recycle contractor by appt "Unlimited Appliances", HHW contracted to Cubside Inc. by appt all home collection, no charge, School district contact for recycling in all districts; Composting collection pilot program funded by state grant for 3000 HH thru May | Start sustainability effort - residents will pay for this by billing within city |
| Edgewater | No | | Leaf every 9 weeks instead of 5. Now can set out as much overflow trash as you want, but soon will only be able to set out overflow every 3 weeks on a schedule - hoping this will increase recycling sign-up |
| Englewood | Yes | HHW Roundup in Sept w/ Littleton; Fluorescent lamps and liquid mercury devices accepted @ Wastewater Treatment Plant; recycling in city buildings | Yes, looking at automated collection, and PAYT |
| Federal Hgts | Yes | County does HHW 1 or 2X/yr | Leaf and tire round-up, partner w/ Littleton |
| Golden | No | | Possible then ordinance w/ new city council |
| Lakewood | Yes | Recycling collection bins located throughout city offices and facilities; city recycles construction and maintenance materials like metal, concrete, asphalt, gravel, batteries, tires, oil, & electronics; city uses recycled paper 95% of time and recycle ink and toner cartridges | Maybe PAYT; goal to reduce city's SW stream by 25% in 10 years, eliminate CPDs by shifting to city's service; pharmaceutical collection where police dept worked as security to dispose of 75-80 lbs of pills |
| Littleton | Yes | Leaf and Tire Recycling 11/1 and 11/8 10-4, Mountain States Wood Recyclers, volunteers at site, free for leaves, \$150/ton, \$5.00/ton w/ tire, residents only, in 2008 425 participants had 1800 cu yd leaves and 224 tires, in 16 yrs operation 13,640 cu yd leaves and 2167 tires recycled; Holiday Recyc/Oil 11/29 10-4 @ Littleton Center, SS Recyc for employees desk-side; HHW Roundup Sept, in 2008 8985 lbs SW & 370 gal liq waste, not free for res | May do waste collection in spring, looking at: 1) haulers provide recycling for no fee, or city provide; 2) increase efforts at city offices to recycle; 3) YW p/u by city; 4) increase recycling at city parks |
| Longmont | Yes | Leaf Collection c/s 2X/yr, 10/12-12/4, bags placed at curb on scheduled day; Oil & auto batteries c/s on trash day, call to schedule day, City sponsored 2 landfill free days, HHW drop day, compost pumpkins, & dumpster rental | Monthly recycling event 2011 PAYT rate fees and structure will include composting mandates and 24gal container, year-round hard to recycle |
| Louisville | Yes | Leaf D/O 11/2-11/20 13 locations | No cis leaf collection this year |
| Thornton | Yes | Leaf Collection c/s 10/26-11/28 free, City sponsored 2 landfill free days, HHW 2X/yr in partnership w/ Adams County, Commerce City, Federal Heights, Northglenn, & Brighton, Christmas Wrap Collection 12/26-12/31 c/s on trash day, Free 1X P/U of cardboard boxes for new residents by appt | |
| Wheat Ridge | No | | Go to PAYT, More trash removal regulations, minimum number of trash trucks on streets |

60 City of Northglenn Recycling Center 112th & Pecos
 61 Broomfield's recycling center
 62 Dumpster at Sheridan Green Elementary
 63 Broomfield recycle center
 64 Broomfield, sometimes Boulder Eco-Cycle - CHARM
 65 Broomfield Recycling Center
 66 Not those in the city of Westminster--they are all 10 miles away!

39 waste management
 40 Best Cleaner Disposal
 41 Your Way Disposal
 42 Republic
 43 Your-way disposal
 44 waste management
 45 Waste Management
 46 Waste Management
 47 waste management
 48 allied waste/Torrey peaks
 49 bee line disposal
 50 Waste Management
 51 waste management
 52 Waste Mgt
 53 Waste Management
 54 Allied Waste
 55 Waste Management
 56 Waste Management
 57 Packman
 58 Packman
 59 allied waste
 60 Waste Management
 61 Waste Management
 62 Your-Way Disposal
 63 Packman
 64 Allied
 65 beeline
 66 Waste Management
 67 Waste Management
 68 Waste Management
 69 Packman
 70 EDS
 71 n/a
 72 Your-Way Disposal
 73 Waste Management
 74 BFI
 75 Same - Allied
 76 Your Way
 77 Your Way Disposal
 78 Waste Connections / Recycle Bank
 79 not sure
 80 NA
 81 Waste Management
 82 allied same as trash
 83 WM
 84 Waste Management
 85 waste mgmt
 86 n/a
 87 No
 88 allied waste services
 89 WM
 90 waste management
 91 Beeline
 92 Your-Way
 93 your way disposal
 94 EDS Waste solutions

If you have recycling collection by a hauler, who provides the service?

Response Text

1 n/a
 2 waste management
 3 BeeLine
 4 Western
 5 Western Disposal
 6 Waste Management
 7 western
 8 Allied Waste Services
 9 Your Way Disposal
 10 Waste Management
 11 Waste Management
 12 Best Cleaner Disposal - but they are unorganized with recycling
 13 Allied Waste Services
 14 EDS
 15 Waste Management
 16 Waste Management
 17 Waste Management
 18 Waste Management
 19 Waste Management
 20 Waste Management with trash collection odd weeks
 21 Packman Disposal
 22 Waste management
 23 Waste Management
 24 Waste Management
 25 Waste Management, but we don't use them, we do our own recycling at centers
 26 Waste Management
 27 bee line
 28 Allied Waste
 29 Allied Waste
 30 Allied
 31 Western Disposal starting 12/29 Allied before that
 32 Western Disposal
 33 Western disposal services
 34 Allied
 35 Allied/Republic
 36 Beeline Disposal
 37 Allied
 38 Waste Management

| | | | |
|-----|--|----|---|
| 95 | n/a | 1 | Wish HOA's were required to provide recycling option onsite |
| 96 | Waste Management | 2 | In our unit of 16 condos, only 2 recycle. We all pay for it every month. It seems silly not to! Maybe people don't realize they pay for it or they just don't care. |
| 97 | Beeline | 3 | recycling should be mandatory |
| 98 | waste mgmt | 4 | Not enough info about recycling drop off locations; household hazardous waste collection too infrequent and painful to use |
| 99 | Waste Management | 5 | disappointed that the city dropped the oil recycling program several years ago |
| 100 | Waste Management | 6 | twice on a weekend the bins at two sites were FULL |
| 101 | waste management | 7 | Seniors with 1 bag per week - cheaper rates needed!!! |
| 102 | Waste Management | 8 | Westminster needs to have curbside recycling services |
| 103 | Not sure..I'm not home when the recycling is picked up | 9 | the lids on the trash containers are heavy for seniors I do not understand why we cannot have like Broomfield & Boulder recycle centers it would be sooo much better to have one spot than 5 or 6 |
| 104 | same as garbage pickup | 10 | We have no Westminster recycling near our home |

If you have curbside recycling service provided by a hauler, how are materials collected?

Other (please specify)

| | | | |
|----|---|----|---|
| 1 | I drop off - one milk crate full weekly | 11 | I am perfectly satisfied with my trash/recycling collection; so are the members of my HOA--of which I am President. |
| 2 | One 18-gallon Bin | 12 | I believe the City of Westminster should put fliers on the doors in the neighborhood with what is recyclable and where it can be taken or how he can be picked up by curbside. I have actually wanted to hang the fliers myself telling folks there is a drop off recycle bin at 108th and would be willing to volunteer for that. It needs to be a strong message of what we are doing to our environment and water. |
| 3 | One 18-gallon Bin | 13 | CITY JUST DROPE HAZ WASTE PROG. REALLY NEED TO BE ABLE TO RECYCLE PAINT |
| 4 | 1 18-gal bin, no lid | 14 | I prefer not to go to recycling centers, but don't want to pay for curbside recycling service. |
| 5 | Newspapers are in separate box, & the rest in a 32 gal trash can | 15 | Almost \$5/wk is very expensive for what we need. |
| 6 | green container | 16 | Green matters hard to recycle guide is good need more education programs on how to recycle |
| 7 | we use 3-4 containers | 17 | best if large containers with lids would be used- tired of picking up neighbors recycle spillage. |
| 8 | Paid by the home owner, of course | 18 | Don't know much about city's education and outreach programs |
| 9 | no recycling | 19 | I don't like having to pay for recycling, but I have always recycled and think it is the best thing to do. |
| 10 | n/a | 20 | I would like to see more programs available so my neighbors understand how important it is to recycle...they don't do it because it isn't |
| 11 | Take to center | | |
| 12 | containers provided by service | | |
| 13 | small totes | | |
| 14 | | | |
| 15 | If you have recycling service, are your recycling bins provided to you by the hauler? | | |
| 16 | Other (please specify) | | |
| 17 | N/A | | |
| 18 | HOA is changing haulers --- they will provide single stream bins | | |
| 19 | N/A | | |
| 20 | don't know | | |
| 21 | n/a | | |
| 22 | We don't use recycling service | | |
| 23 | dont know | | |
| 24 | We also provide | | |
| 25 | actually I put out 4 bins every 2 weeks, some are my bins | | |
| 26 | no recycle service | | |
| 27 | when we did recycle we purchased the service bins and they took the trash away | | |
| 28 | bought during previous contact, new hauler allowed us to keep using | | |
| 29 | I had the container not sure if they would have supplied | | |
| 30 | n/a | | |
| 31 | I have bins left over from previous haulers | | |

How satisfied are you with the following?

Comments?

| | | | |
|----|---|----|--|
| | mandatory and they admit that they are too lazy to separate their trash! | 42 | Very disappointed we no longer have large item pickups |
| 21 | I know very little about any city efforts toward recycling. | 43 | Westminster needs more and more convenient collection sites. |
| 22 | we need more frequent recycle collection | 44 | trash services are not allowed to collect neighbor yard waste but they do |
| 23 | I'm disappointed that you no longer offer large item pick up. I understand the reasons, but would it be possible to have a drop off place once or twice a year to bring large items? | 45 | Recycle bins are sometimes overflowing |
| | | 46 | I think wastemangement of any type should offer to recycle and provide bins without additional charge. That is why I take my recycling to a drop off. |
| 24 | Shouldn't have to pay to recycle | 47 | No Education |
| 25 | Better signage is needed at the city drop sites; I see things in the bins that people do not understand how to use the bins. Even though a small sign on the bin says no plastic bags are allowed, I frequently see that people have dumped plastic trash bags into the dumpsters. | 48 | I wish there were more options for both garbage and recycling |
| | Also a lot of people do not flatten cardboard boxes, which makes the bins fill up too quickly. | 49 | No Westminster recycling center north of 104th Ave. I live north of 128th Ave. in Westminster |
| 26 | City went away from using recycled engine oils in fleet operation after using it for over 8 years. | 50 | I didn't know of any City recycling efforts! |
| 27 | we are not happy about the disc. of yearly large pickup | 51 | Recycling is bi-weekly, sometimes needing service more often. Not sure where we can drop off paint and hazardous waste products |
| 28 | Bins at recycling centers in Westminster are always overflowing. Cost to dispose of paint cans is extra if you have more than 5 cans. | 52 | I had to research recycling centers. |
| | | 53 | I would like the city to encourage more recycling and education. |
| 29 | I believe it should be mandatory to recycle. We're a GREEN state that has an abysmal track record. | 54 | I like my service, not sure of the other questions |
| | | 55 | The price of garbage collection is high and should INCLUDE recycling!!! |
| 30 | Service is OK but too expensive for my small amt, I did not know the city encourages recycling except hazardous products | 56 | Could offer more days to recycle tree limbs. Also could offer an electronic recycle program. |
| 31 | Would recycle but it is too expensive, city of Denver provides it for free | 57 | I have never understood why there is a financial penalty (i.e., additional fees) associated with recycling. In many parts of the country recycling is mandatory and the fees apply to everyone: not just those willing to recycle. |
| 32 | I would like to be able to recycle more materials. | 58 | Not enough drop-off areas in the Northeast part |
| 33 | very few people recycle. It should be mandatory. | 59 | I would definitely take more things to recycling centers if I knew where they were and what they collected. Especially paint and electronics and household hazardous waste |
| 34 | The city doesn't take all the recyclables. | | |
| 35 | Hazardous waste is picked up only by the city and you must have 3 different types in order to schedule a pick-up. They wouldn't schedule a pick-up for 4 gallons of old latex paint and oil based varnish. Recently had concrete from old fencing and had to break it up into very small amounts to put into the garbage. No one picks up old concrete. | 60 | I didn't know that the city even had any recycling drop off places |
| | | 61 | Very dissatisfied that the city discontinued bulk item collection |
| 36 | Recycling should be picked up every week, it causes lot of trash throughout the neighborhood as more and more families are recycling. The bins are overflowing with materials. | | |
| 37 | Need more frequent pick up at drop off - by weekend Westside is full! | | |
| 38 | There are no city recycling drop-offs in north part of Westminster (132 & Huron area) | | |
| 39 | If recycling was free, everyone would recycle. | | |
| 40 | The city's recycling drop-offs are not convenient to those living in the northeast of the city. | | |
| 41 | need a yard waste program in city | | |
| | | | Are there any changes that could be made to improve your satisfaction with trash and recycling opportunities or services in Westminster? |
| | | | Response Text |
| | | 1 | no |
| | | 2 | More promotion of recycling. |
| | | 3 | empty the drop off sites more often. Usually full |
| | | 4 | General Improvement in info and availability |
| | | 5 | every house should be given at least 1 recycle bin that is picked up at no extra charge every week |
| | | 6 | Include plastic bags in recycling collection |

| | | | |
|----|---|----|---|
| 7 | would like to see oil recycling back and also a place to drop off hazard waste and chemicals | 39 | City could offer services |
| 8 | I think the option of once a month or bimonthly trash pick up would be nice--it would save gas for the trash companies too | 40 | Retain the large item pickup managed by Westminster |
| 9 | Make curb side recycling part of regular trash pick up at no extra charge | 41 | I wish I could recycle more and discontinue trash service all together |
| 10 | satisfied with service | 42 | make connections with eco-cycle, |
| 11 | TOO many trash trucks on all streets!!! 3 on my street just today that I noticed. | 43 | there is a place to drop off lawn clippings??? |
| 12 | None, the workers are very courteous and say "Hi" once in a while. | 44 | educate residents as to what can be recycled; concerned about inappropriate items in recycling dumpsters at 108th drop-off |
| 13 | More education to public and in the schools | 45 | More aware of what is accepted and hard to recycle opportunities near by. |
| 14 | It saddens us to see that people throw non authorized stuff in the recycle bins, however not sure how that could be resolved unless there was curbside pick up. | 46 | The 88th Avenue drop off site bins are full a lot of the time |
| 15 | more drop off locations, bins emptied more often | 47 | do not charge for bins |
| 16 | would be great to have drop off points that take EVERYTHING that is recyclable | 48 | Need to be more aware of where the drop-offs are. |
| 17 | reinstate annual large item pick up | 49 | yes, empty the bin's more often. |
| 18 | curbside recycling as they do in Denver | 50 | put all items into one or two containers and separate at city site. |
| 19 | not really | 51 | Recycle food waste |
| 20 | Am not aware of any services. | 52 | Provide a curbside recycling service. |
| 21 | More hazardous waste collection info | 53 | Provide more recycling centers like the one in Broomfield |
| 22 | More recycling education | 54 | City could provide trash service and recycling to all citizens |
| 23 | we would like to compost and have a compost container | 55 | get more recycling drop off locations |
| 24 | Make it free or easier for us to do | 56 | Advertise the location of recycling centers and list what is accepted. |
| 25 | I'm not familiar enough with any other than Haz waste | 57 | recycle cardboard, |
| 26 | More items collected in recycling (cardboard, etc) | 58 | No |
| 27 | Make hazardous waste sites more available like oil collection sites are. | 59 | I don't think people should be charged for recycling, because a lot of people are throwing things away, rather than paying the extra to recycle. |
| 28 | Nothing at this point. | 60 | Would like to see recycling embedded in trash, would like to see less trash trucks driving down the street , franchising |
| 29 | the containers are not good for seniors for the above reasons | 61 | location to drop off leaves in the fall |
| 30 | Closer recycling including all paper/cardboard | 62 | additional recycle pick up |
| 31 | Easier to dispose of paint and other toxic materials | 63 | Curbside recycling of everything except food waste. |
| 32 | No! And I certainly do not feel that the City should undertake those services at taxpayer expense. | 64 | See above. I understand the huge expense involved in having the large item pick up done. Would it be possible to have a location for residents to drop off large items for disposal maybe once or twice a year. A similar program to the paint disposal you offer. |
| 33 | larger recycling containers, | 65 | Additional sites for recycling drop offs |
| 34 | I have a very large bag of newspaper bags in my garage because I believe the only place to take them is in Boulder. I like getting the Westsider newspaper so I believe Westminster should have a collection point for the bags for them and the bags from the Denver Post. | 66 | I am fortunate to live near a drop location; I wonder if more locations are needed throughout the city. I would recycle less if I had to travel farther. Also the bins are sometimes crammed full, though this happens less frequently within the past year. At one point, the signage at the sites contradicted the info at the city's web site as |
| 35 | REINSTITUTE HAZ WASTE DROP-OFF | | |
| 36 | the lids on the recycling containers are VERY heavy to lift!!!!!! | | |
| 37 | Don't charge for curbside recycling. | | |
| 38 | I would like a Central location to drop household trash | | |

| | | | |
|----|---|-----|---|
| | to what materials were accepted in the bin. I do not know if this is still the case. | 100 | Change the hazardous waste to include concrete and change the 3-item rule to be either that or an amount so that you can schedule a pick-up to meet your needs. |
| 67 | no | | |
| 68 | reinstate lg pick up, even if we have to pay for it | | |
| 69 | Allow or provide one large rolling bin with a flip top for recycling, the same as trash, so that we don't have recycling blowing down the alley on windy days. | 101 | This is the only city we have lived in since 1988 that does not provide a trash service but requires you to "hire out". |
| 70 | free curbside pickup; not for fee | 102 | Recycling should be picked up every week, it causes lot of trash throughout the neighborhood as more and more families are recycling. The bins are overflowing with materials. |
| 71 | Curbside appliance and HHW collection | | |
| 72 | Know the schedule, need a calendar | | |
| 73 | Spread the word more. More drop-offs and/or drop-off bins emptied more often | 103 | add waste oil collection |
| 74 | I would love to see stickers that you purchase for only the trash you put out. Not a flat fee anymore. | 104 | See above |
| 75 | Would like additional information for locations that take hazardous waste & large items on a regular basis. Would like to see compost pick up by trash service. | 105 | Adding drop-off locations at northern part of city. |
| 76 | Don't charge for disposing of all paint cans. Add more recycling bins in the City and empty them more often. | 106 | I REALLY don't like the number of trash companies coming in and out of the neighborhood. Couldn't we just have one or two companies instead of 6? |
| 77 | Recycle should be collected every week not every other week. | 107 | Make recycling free. |
| 78 | free recycling from home | 108 | to me recycling should be part of trash period, it would encourage more people to recycle...people do not want to pay to recycle...and even what I do dropping off is putting that stuff in my car and driving to a recycling center is not that convenient I do it to teach my kids how important recycling is...wish everyone else would. |
| 79 | Educate the people--have a recycle center that takes all things. | | |
| 80 | paint and hazardous waste collection and large/bulk | 109 | Have it set up like in Thornton, with the city collecting the trash. |
| 81 | Recycling anything has no effect on anything. | 110 | curbside recycling and encourage haulers to provide separate containers |
| 82 | provide free curbside recycling | 111 | contract with a single company citywide |
| 83 | Require providers to pick up all recyclable materials | 112 | See above comment. |
| 84 | continued public education | 113 | wider range of plastics taken would be good |
| 85 | lower cost options; more recycling options for lawn and tree waste | 114 | Make them easier to find online |
| 86 | Pick up recycling at least once a week rather than every other week. | 115 | I am changing service to Waste Connections - better prices and services such as provided recycling and waste bins |
| 87 | Provide it for free | 116 | Bigger recycling bins |
| 88 | - - - | 117 | In would be great to recycle Styrofoam, cardboard, plastic other than 1 or 2 |
| 89 | if you want to increase recycling then make it cheaper or free | 118 | City recycle containers at Westbrook Rec Ctr are often overflowing making it difficult to drop-off recycles. |
| 90 | Make it easier for more people to recycle | | |
| 91 | Open more local recycle bins -closed the one on 112th | 119 | Large item pickups and more hazardous waste pickups |
| 92 | more drop-off locations and info to all residents about these drop-offs | 120 | Have trash collected by haulers on same day. |
| 93 | More info about drop off spots | 121 | Provide recycling services with no charge |
| 94 | Availability of curbside recycling at a fair rate. | 122 | no |
| 95 | bring back the large item pick up | 123 | All I need is a trash/recycle service that comes when I need them. Every week is too much. |
| 96 | no...I'm happy. | 124 | Easier paint and electronic disposal |
| 97 | a compost site to drop leaves and pick up dirt would be nice | 125 | charge people penalty for putting yard waste and garbage in trash pickup and charge trash haulers penalty for picking it up. |
| 98 | Have a complete recycling effort like Bromfield | | |
| 99 | more convenient recycling drop locations | 126 | no |
| | | 127 | Keep recycles bins from getting full |

128 The above statement
 129 Yes, I will be contacting my contractors and request a group discount for the neighborhood.
 130 Recycling pick up at no charge
 131 Recycling Services in Westminster are non existent. We have to use Broomfield and cannot recycle yard waste with them as we are not Broomfield citizens.
 132 Price
 133 more drop off
 134 Give us bigger bins for all recycling without the fees.
 135 City wide recycling program
 136 yes, include this in the water bill so it's paid monthly rather than quarterly and include recycling at no additional charge
 137 Yes - a recycling center located north of 112th Ave. & West of Huron St.
 138 Large item pickup
 139 Have more times where tree limbs and branches could be recycled
 140 It would be nice if there was one trash hauler instead of so many b/c of lots of haulers supports one contractor
 141 Too many garbage companies running trucks on our roads!! And offer recycling that doesn't cost us!!
 142 Empty them more often
 143 I think a city recycling/trash pick up would be fantastic.
 144 No fee pick-up for recycling
 145 I would like to see the city encourage more recycling and education of households that may not be participating. We all have to do our part.
 146 Restrict the number of trucks of different companies and reinstate large item pickup a location further north in the 120th area
 147 just more frequent pickups
 148 I think we should have curbside recycling free of charge
 150 Could offer more days for tree and limb recycling and start an electronic recycling program.
 151 collect packing materials/ yard waste
 152 Where can I recycle glass jars?
 153 More drop off areas and some yard waste collection sites in Northeast
 154 I like the Broomfield recycle facility setup
 155 Drop off points hours should be expanded
 156 resume annual large item pickup; offer recycling site for leaves and grass clippings
 157 Send city recycling info to residents even if they use paperless billing/autopay for the water bill.
 158 More recycling options
 159 single carrier by neighborhood - we have too many trucks each week

160 I would like the hauler to take more than just #1 and #2 plastics; I would like to be able to easily recycle batteries and other hazardous waste
 161 curbside compost recycling.
 162 more education, more drop off centers
 163

What do you see as primary barriers to doing more recycling? (check all that apply)

165 Other (please specify)
 166 I didn't know/remember that City Hall has recycle bins
 167 xtra cost
 168 people are too lazy! Advertise how easy it is--that we don't have to sort it--just drop it in!!
 169 Very little trash. Nearby Newspaper recycle sites have vanished!
 170 Convenience of it is not publicized enough.
 171 city should accept their own HDPE (#2)plastic bags !
 172 need to recycle weekly
 173 These answers apply to disposal of small appliances, etc.
 174 As far as curbside pickup goes...Packman has limits on what it will take as recyclables. They won't take some cardboards, etc.
 175 the lids on the recycling containers are VERY heavy
 176 I recycle
 177 need to take even more stuff - computers, tvs, appliances, etc.
 178 Not sure if certain materials are recyclable
 179 I know how but many people don't. Curbside makes more people recycle, but how many actually get curbside recycling?
 180 no real place to store containers without lids and with HOA rules requiring bins not be outside fenced area-who wants to keep insect/rodent attraction in the house or garage? If one or two large containers with lids/wheels like garbage carts, then I would consider.
 181 the fact that our service does not recycle cardboard
 182 The recycling bins you off don't specify that glass is allowed. It would be nice to know if glass is allowable
 183 No recycle around 115th thru 120th Sheridan area
 184 We did the curb recycling when it was free. Do not have a big volume to recycle anyway.
 185 Many people don't seem to care
 186 I currently recycle plastic bags at my grocery store, but it would be nice if I could include these with all my other recyclables.
 187 previous garbage pickup changed recycling to "for fee" and we changed to cheaper service

188 We recycle a lot, but could do more with food/organic waste if programs were available and easy

189 No drop off area close to me.

190 Cost to dispose of materials.

191 The most significant barrier is the lack of interest by most people to recycle.

192 the sites I use are not maintained by the city - I did not they were available thru the city

193 Where can we drop off electronics?

194 See comment for #2

195 Don't know where to take old paint or chemicals.

196 I would like to know what all the city will recycle for free and where the drop off stations are for various different types of material

197 I drop off my own recycling-but would recycle more with free pick up

198 Need recycling center closer to my home.

199 It costs money for service!

200 I do my part regardless - I think it's important

201 need info on how to recycle telephone books

202 many of us don't know what to do with dog doo doo.

203 my family has trouble remembering what is accepted

204 compost waste. dont want a compost pile in yard but don't know where to take it

Is there any trash, recycling, or other diversion you'd like to see the city implement?

Response Text

1 Size & type of commercial signs in residential area

2 plastic bags

3 make recycling mandatory, work with vendors to do so

4 a drop off for grass clippings

5 ONE trash service for city! That would save on street maintenance!

6 No. (Well they COULD pay my bills and I wouldn't complain.

7 More access to dropping off branches etc. and better help with disposal of large items and building materials

8 city should accept their own HDPE (#2)plastic bags from the Westminster newspaper!

9 People are not aware of the drop-off sites in Westminster

10 no

11 No

12 annual large item pick up

13 large item/ bulky, yard waste and electronic materials

14 trash pickup

15 No

16 composting and my friend in Louisville can separate and collect white tissue paper, paper towels too

17 one central location like Broomfield & Boulder and mandate recycling

18 Absolutely not!!

19 RE-INSTITUTE HAZ WASTE FOR PAINT, ETC

20 waste food recycling? kitty litter drop offs? :)

21 Maybe a drop location for household hazardous waste

22 Don't charge for curbside recycling

23 copy Broomfield recycle center different recycle bins in one location

24 Make central drop off of household trash available.

25 Better hazardous materials recycling program (paint, cleaning supplies, pesticides...)

26 The block Styrofoam is a problem. It is too expensive to haul it to Boulder.

27 lawn clipping drop off + reimplement large item hauling, I wanted it this year and now its gone

28 compost pick up

29 Hazardous/chemicals

30 Reward program to serve as an incentive or mandatory recycling.

31 compost bins for all

32 yes

33 yard/green waste recycling on regular basis

34 recycle food waste

35 Provide a curbside recycling service. Trash might be o.k. too.

36 Large items, e.g. appliances, for a fee

37 Motor Oil, Batteries, Tires, Building Materials

38 Provide service to all citizens (like City of Thornton)

39 no

40 We especially need a way to recycle electronics; my basement is filling up!

41 location to drop off leaves in the fall

42 A large item drop-off location. once or twice a year

43 city should provide curbside services

44 Continue large item pickup

45 Prefer to keep my current trash-collection day!

46 Monthly / Bi-monthly curbside recycling

47 I would like to have a rolling, covered bin provided

48 if recycling actually pays for itself, provide free curbside pickup; if not economic, don't do recycling

49 Curbside composting

50 Municipal trash seems like it would be more efficient instead of having 4-5 different trucks in the same neighborhoods.

51 grass and leaves

52 Composting services

- 53 Restart the spring/fall cleanup or have a drop-off event at least twice a year - maybe even a swap.
- 54 Once a year, curbside trash pickup of LARGE items like the city of Arvada offers.
- 55 free recycling curbside
- 56 Full recycling center to take everything--open all hours
- 57 Mandatory recycling
- 58 Reinstate recycling for large items, paints, chemicals...
- 59 large item pick-up is needed, if only a few times per year.
- 60 City composting and limb collection
- 61 More drop off spots
- 62 Curbside recycling
- 63 maybe composting....
- 64 yard waste drop-off, finished compost avail to participants
- 65 recycling services by city but don't limit it by having to do the trash service also..
- 66 Computers, Monitors, Florescent lights, Large Item
- 67 Make some form of recycling mandatory
- 68 Provide easier large item disposal options.
- 69 Fewer trash trucks in and out of the neighborhood and more recycled materials accepted
- 70 Make recycling free.
- 71 not sure
- 72 trash pick up, with the trash bill and water bill on the same bill.
- 73 None comes to mind.
- 74 yard waste program, compost for residents/public parks
- 75 Perhaps sponsor a city-wide trash/recycling effort so fewer trucks are on the streets
- 76 more opportunities to recycle yard waste
- 77 Same day pickup for each neighborhood
- 78 no
- 79 Get more trash/recycling options.
- 80 More frequent large item collection
- 81 make available composting areas for those not willing to do it at home.
- 82 It would be nice to recycle at curbside
- 83 no
- 84 furniture and appliance pickup and recycling
- 85 See above
- 86 More recycling drop off locations per neighborhood
- 87 Free recycling pick up encouraged through trash collectors
- 88 Anything they can. We want to recycle as much as possible in a convenient fashion.
- 89 no
- 90 A Local compost site for drop off with the ability to pick up compost for garden at the site
- 91 I'd like to see more recycling city wide, not enough participation now
- 92 The previous city I lived in recycling was free and the city provided the bins also garbage was about \$20 per month and included in your water bill.
- 93 Trash & recycling service provided by City of Westminster would be greatly appreciated!!
- 94 I would like a large trash bin with a flip top lid for my recycling (with wheels) I would be willing to pay for it.
- 95 Is there a recycling drop off for yard waste? Don't know!
- 96 curbside recycling would be nice. I bet more people would recycle if it was made known and more convenient.
- 97 Reinstate large item pickup
- 98 put recycle bins/cans at parks
- 99 pay people to recycle
- 100 Glass, cans, paper
- 101 Electronic recycling.
- 102 Where do you accept glass recycling?
- 103 more places to take computers, monitors, electronics for recycling
- 104 yard waste
- 105 Inform us more thoroughly about the benefits of composting and the ease of having containers underground.
- 106 single carrier by neighborhood - we have too many trucks each week
- 107 curbside compost
- 108 education
- Which of the following program and operational changes for the City's solid waste management would you support?**
- Other programs you would like to see?**
- 1 once again makes recycling mandatory
- 2 Non-rechargeable battery recycling
- 3 Some questions depend on others being implemented
- 4 no city programs
- 5 free trash and recycling service like in Denver
- 6 Composting
- 7 None!
- 8 RET TO HAZ WASTE DAYS
- 9 Household hazardous waste drop off
- 10 retail (including restaurants) mandatory recycling of glass, plastic bottles, cardboard
- 11 education programs on composting and for kids to recycle
- 12 One large household battery recycling drop off site
- 13 resume the large item city cleanup program
- 14 City Clean-Up brought back.

- 15 Single hauler would lower street damage, but
cuts choice of trash days. Less noise, for sure!
- 16 Compost education
- 17 free curbside recycling
- 18 If items are banned from the trash, then they
must be picked up curbside even for a fee
- 19 Banning of certain recyclables would result in
more trash!
- 20 city collected trash where the price does not go
up every year.
- 21 A subsidy for buying a compost device.
- 22 household chemicals and cleaners
- 23 DO NOT force one garbage provider - Don't put
local business out of business!
- 24 a recycling place that is open more often like the
Broomfield one just off of 102th and olde wads.
- 25 Hauler will take anything as long as you call
ahead for things that aren't the normal weekly PU
items. ie: limbs longer than 4 feet, old appliances,
furniture items etc.
- 26 i really support single hauler to minimize trucks in
the neighborhood
- 27 Do not charge for yard waste. It's unfair to those
of us with large yards.

- 13 Doesn't have much to recycle except metal
- 14 controlled at corporate
- 15 No apparent recycling is offered to our business.
- 16 wish they would do more for apartments

- 30 just make the drop off sites easy to use with lots of bins so people can do it themselves

Are there any changes that could be made to improve your satisfaction with commercial trash and recycling opportunities or services in Westminster?

- 1 Would like a green shop certification program in Westminster.
- 2 more info on recycling
- 3 I and another dozen or more business' throw in large dumpsters
- 4 provide recycle bins
- 5 Have large dumpsters for recycling like you do trash (it would allow businesses in our situation recycle)
- 6 Make there some incentive for the business to do so. Maybe charge higher business fee rates or something.
- 7 Better marketing of recycling programs
- 8 n/a
- 9 Offer more public recycling and trash bins to help prevent littering
- 10 Curb side recycle pickup
- 11 I want a commercial recycling container by our dumpster at our business
- 12 more options for things other than paper plastic and glass
- 13 The city should have incentive programs for recycling
- 14 More info on where to recycle
- 15 yes, is there even a commercial trash recycling opportunity?
- 16 More education for residents
- 17 have affordable options
- 18 no
- 19 Need recycling programs in residential areas especially apartment/condo complexes.
- 20 Taxes are high enough that they should include recycling and trash
- 21 no
- 22 TAKEN OVER BY CITY (AS THORNTON DOES IT)
- 23 no
- 24 education
- 25 no
- 26 monetary incentives
- 27 Offer weekly p/u for paper and cardboard
- 28 Offer recycling pick-ups for plastics, and cans
- 29 more education to let people know what's available

What do you see as primary barriers to doing more recycling? (check all that apply)

- 1 electronics recycling difficult at best
- 2 I personally recycle personal items, no options for business
- 3 Property Management is the issue - but we are working on it.
- 4 not sure if they take plastic jugs for motor oil, antifreeze, etc.
- 5 too hard to get bottles and cans to recycling after bar closes late at night
- 6 Doesn't really have much to recycle
- 7 don't want to have to separate anything
- 8 dont know if customers would do that
- 9 cost
- 10 mostly generate paper and that is shredded by a company
- 11 Right now it would take too much time
- 12 company went out of business that take plastics dry cleaning bag, haven't found another.
- 13 communication

Are there any trash, recycling, or other diversion programs you'd like to see the city implement for businesses?

- 1 green certification program for business
- 2 Xmas trees to mulch - free to residents & businesses
- 3 Electronic waste/recycling would be very helpful
- 4 something for strip malls like mine
- 5 any and all
- 6 Literature about recycling drop off sites
- 7 Everything helps.
- 8 Free recycling services
- 9 Not at this time
- 10 Provide bins and a pickup service
- 11 Electronics etc.
- 12 Yes, recycling program for office buildings
- 13 recycle bins in public places...
- 14 I would like to see paper/cardboard recycling by the city
- 15 a credit for using a trash service that includes recycling
- 16 no
- 17 Composting! Make recycling mandatory for all businesses/residents.
- 18 no
- 19 no
- 20 for dry cleaners, need something to do with all the plastic bags

- 21 Very opposed to making people recycle, make them want to
- 22 making it cheaper for containers and businesses to do it

Which of the following program and operational changes for the City's solid waste management would you support?

- 1 not applicable
- 2 More positive vs punitive.
- 3 More incentives to reuse, reduce and recycle
- 4 Incentive programs for recycling
- 5 Composting

Are there any other garbage or recycling issues or services you'd like to raise? Are there any other garbage or recycling issues or services you'd like to raise?

- 1 no
- 2 none at this time
- 3 More public trash cans and recycling bins in parking lots, parks, recreational facilities, etc to increase disposing of your waste properly instead of littering.
- 4 There needs to be incentive programs
- 5 The bins by the firestation W.73rd Ave. are hard to open and close.
- 6 no
- 7 Why aren't Westminster's recycling services covered by city taxes, like in Denver?

- 8 Taxes are so high that they should include trash and recycling
- 9 no
- 10 no
- 11 no
- 12 would like to have some sort of service for apartment complexes

Which of the following best describes your business?

- 1 Glass Shop
- 2 IT Service
- 3 Legal Services
- 4 Research & Development
- 5 Property Management/Apartment Complex
- 6 Auto wreckers
- 7 outpatient (substance abuse)
- 8 Retirement Community
- 9 Dental
- 10 motorcycle repair
- 11 Lock and safe company
- 12 AWARDS & RECOGNITION
- 13 distributor
- 14 recreational/ice rink
- 15 staff support calling
- 16 Martial Arts Studio
- 17 Retirement community

SERA

Skumatz Economic Research Associates, Inc.
Boulder Office: 762 Eldorado Drive, Superior, CO 80027
 Phone: 303/494-1178 FAX: 303/494-1177
email: skumatz@serainc.com; **web:** serainc.com; payt.org

DATE: August 2010
TO: Rachel Harlow-Shalk, City of Westminster
FROM: Lisa Skumatz and Juri Freeman, SERA Inc
SUBJECT: Illegal Dumping and Pay-As-You-Throw

Invariably, one of the first questions municipalities ask about pay-as-you-throw is its impact on the incidence of increased illegal dumping. Overall, PAYT does *not* lead to increased illegal dumping. A series of surveys and interviews with hundreds of communities conducted over the past two decades by SERA Inc. have found that the vast majority of communities that adopt PAYT do not report increased incidences of illegal dumping. Communities report that illegal dumping is a “perceived” barrier and not an actual barrier. Although many communities report that they thought illegal dumping would increase with PAYT only a small portion actually do see increases. Virtually all of the communities that report an increase of illegal dumping after implementing PAYT also report that illegal dumping returns to pre-PAYT levels within one to three months.

Overall, PAYT does *not* lead to increased illegal dumping.

SERA 2010 National Community Survey

Communities with PAYT programs in place were asked to rank illegal dumping before and after implementing PAYT on an A to F scale (where an A means that there is no incidence of illegal dumping and F means it is a huge problem). After implementation, none of the communities with PAYT reported that illegal dumping was a *huge problem* and those that reported it was a D decreased from 21% to 14% after implementing PAYT.

Results of 2010 Community Survey

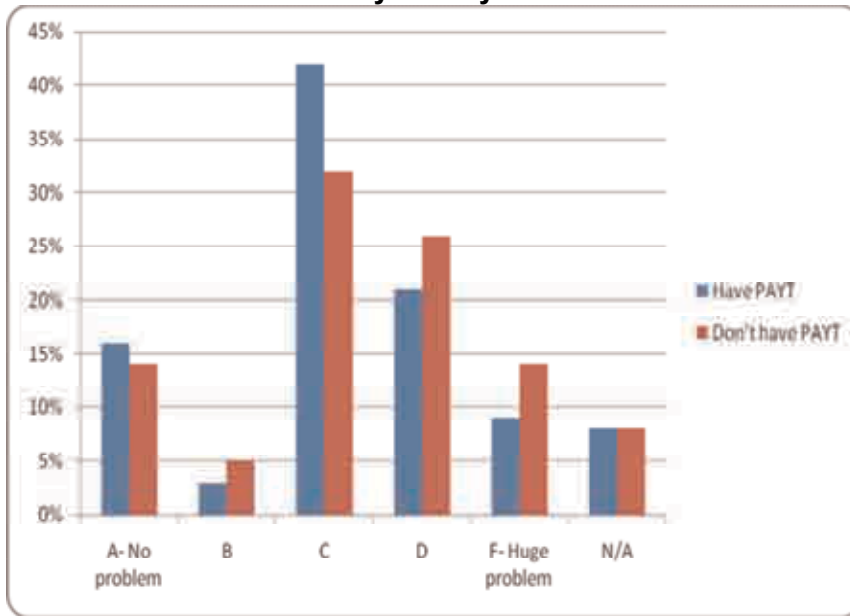
| Ranking | Before PAYT | After PAYT |
|---------------------------|-------------|------------|
| A- No problem at all | 0% | 0% |
| B- Very slight issue | 21% | 43% |
| C- Medium problem | 7% | 7% |
| D- Large issue | 21% | 14% |
| F- Huge Problem | 7% | 0% |
| Don't know / wasn't there | 43% | 28% |

SERA 2009 National Community Survey

In a 2009 survey SERA researchers asked communities to report whether or not they had PAYT and asked communities to rank illegal dumping. There was very little difference in the issue of illegal dumping

between communities with and without PAYT. Slightly higher proportions of communities *without* PAYT reported that illegal dumping was a large or huge problem. The results of the 2009 community survey are displayed in the figure below:

Results of 2009 Community Survey





WESTMINSTER

Staff Report

City Council Study Session Meeting
September 13, 2010



SUBJECT: Use of Public Lands or Facilities by Private Telecommunications Companies

PREPARED BY: Mac Cummins, AICP, Planning Manager
Marty McCullough, City Attorney

Recommended City Council Action:

Provide input to City staff about how Council would like to proceed on licensing ground and/or airspace rights to private telecommunications companies to provide wireless communications; most notably cell phone service. The specific proposal for Council consideration and direction is to hire an outside negotiator to work with the cell phone companies, and to streamline our internal City review of proposals to use City owned land/facilities. The review and approval process would be fee based with the intent that the review process will be cost neutral to the City and the licenses themselves will be revenue positive to the City.

Summary Statement:

The City has been permitting publicly owned facilities to be used by cell phone companies for some time now. The Department of Community Development currently works with the cell phone companies on their requests. With the elimination of the position within Community Development that oversaw this effort, staff has sought alternatives for meeting the community needs of good cellular phone service and generating revenue for the City, while recognizing that the City does not currently have any staff trained or available to broker these somewhat technical agreements. At the heart of staff's proposal is staff's belief that the business of renting City property and buildings to telecommunication companies is not a City core service. The proposal is to contract with an outside negotiator, who will follow the City's policy objectives concerning the licensing of public property for private use, and the City will charge a fee sufficient to cover his/her costs. In addition to this, the City will generate revenue from the program when it permits private telecom companies to use City property.

Expenditure Required: \$0

Source of Funds: N/A

Policy Issues:

There are two policy issues: 1) Is the City interested in continuing to permit City owned property to be used by private companies for telecommunication purposes; and 2) If so, does City Council concur with Staff's approach laid out in this Staff Report to address these decisions?

Alternatives:

Do not continue to allow space at City owned facilities to be used by private telecommunications facilities and/or do not use an outside negotiator to help the City staff in terms of negotiating these agreements. This is not recommended by staff because there are experts in this field that stay very current with the rates paid by telecom companies, issues in the technology and the needs of the companies, and maintain relationships with those companies. In addition, the City continues to receive 2-3 requests a week from telecommunication companies asking to meet, review and discuss proposed agreements or amendments to existing agreements, and the time required to respond to these requests has been largely overwhelming and detracts from other key City staff responsibilities. Staff believes the use of a private fee supported consultant for this work is much preferable to adding another staff person to handle this work.

Background Information:

After the elimination of the position that oversaw this program from the Department of Community Development, the City staff has become aware of the significant staff resources that go into the negotiation of a cell tower agreement for publicly owned property. This workload has created a "backlog" of "would be" applicants to the City to utilize City owned land for their cell towers (and pay the City rent) that is exceeding the staff ability to respond to these applicants. The real estate issues can be significant in terms of property rights, dedication requirements, easement issues, etc.

Overall, several different Departments within the City are involved in the process, and have some knowledge of the key areas that are relevant. The Department of Community Development staff is ready to review and discuss whether the aesthetics of the proposed facility are consistent with the design guidelines and zoning provisions of the City, but lack the adequate resources to evaluate the proposed agreement's terms and real estate issues. The City Attorney's Office (CAO) can evaluate the legality of the real estate issues relating to property rights, but would be understaffed to negotiate each individual agreement, and would not be in a position to make real estate policy choices for the affected operating department (e.g., if there were a proposal at a park or golf course, CAO would not be in a position to make decisions that affect those facilities). The operating departments that operate facilities on the land (e.g., golf courses or parks, for example) can potentially make decisions on how the proposed tower will affect their operations, but would not be in a position to keep current on City design guidelines, zoning, or current market rates. No City staff has up-to-date knowledge on the "going rate" for cell tower leases, which likely vary based upon the desirability of the location.

Overall, there seems to be a need to retain a professional to keep current on all of these issues and be a single point of contact for the telecommunications industry, when proposing facilities on City owned land, within Westminster.

Application

Staff is proposing to streamline the process to a single point of contact in terms of requesting whether or not the City is potentially interested in allowing its public lands to be used, and, if so, then negotiating the full terms of such an agreement. Staff is proposing a two pronged application process:

Pre-application: Staff is proposing to implement a pre-application process, where an applicant would pay a fee (proposed for \$250), and indicate which facility they would like to locate at, what type of cell tower they would like to build, etc; and submit to City staff. Staff will review the pre-application and determine if the City is potentially interested in the idea. This discussion will follow the City's adopted Public Lands Policy and includes several Division Managers, Department Heads, and the City Manager. The fee will "weed out" applicants that are serious about utilizing City property from those that are not serious; and will lower the overall workload impact to senior City staff and administrative officers in making these types of real estate decisions.

The application will involve two steps that would occur simultaneously, and will be coordinated by the outside negotiator. First, a concept review of the proposed use would be considered by the department having responsibility over the proposed property, and the City's Development Review Committee (DRC) comprised of the City Manager, Assistant City Manager, Director of Community Development, Planning Manager, and other key staff). If the DRC approves the proposed use in concept, the applicant would be so informed and should the applicant decide to proceed with a technical review of the proposal, a fee of up to \$2,000 would be collected that would be paid over to the consultant as a retainer for his work on the subsequent negotiations and more detailed review of the proposed facilities. The City's consultant will also consult with the Department of Community Development and affected operating department regarding the applicant's proposed facilities and use. The latter issues are typically presented in the form of exhibits to the agreement showing the proposed improvements, structures, power lines and access routes to the site, and similar details.

ODP Process and Future Code Changes

Currently, WMC 11-4-11(D) requires the approval of an Official Development Plan (ODP) prior to constructing any telecommunication facilities on private or public property. The current ODP review process requires telecommunication providers to demonstrate that their facilities are necessary, in conformance with all federal regulations, designed to minimize visual impacts, located at the most appropriate site among other alternatives, and meet all City design standards. In addition, co-locations on existing telecommunication structures are encouraged. The Code also requires a maintenance agreement and a performance bond and Federal Communications Commission certification.

WMC 11-4-11(J) provides that telecommunication agreements for the use of City owned property may be administratively approved, but it does not expressly state whether or not such installations are also exempt from the ODP requirement contained in WMC 11-1-11(D). Further, because the City Attorney's Office believes that the proposed telecommunication agreements are within the legislative intent of City Charter Section 13.4, which requires any "lease" of City property to be approved by ordinance, and because City Charter requirements may not be superseded by City Code provisions, staff believes that 11-4-11(J) needs to be clarified through a future City Code amendment. Staff will be returning to Council in the not too distant future with a recommended ordinance, that will also include any staff recommendations that staff may have in regard to the issue of ODP approvals of these installations in light of the level of review and scrutiny these request will receive through the agreement negotiation and Council approval process.

Survey of Other Communities

Staff contacted several other communities to see how they process requests by telecom companies for use of their property. Generally, the cities surveyed were significantly different in terms of how they approached the fee structure for this effort, and which department negotiated the terms. Overall, most cities charged some sort of fee, and the operating department responsible for the facility managed the contract. The range in fees was difficult to ascertain, because many cities negotiate the contracts and charge fees on a case by case basis. The ones which did have set fees are Boulder (\$2,440) and Arvada (\$600 to \$2,400 depending on case). Most cities did not have a pre-application process, so there was no fee associated with that process. The staff proposal for a retainer fee of \$2,000 is within the range that other cities along the Front Range have been charging to look at these proposals.

Should Council desire, staff will be prepared Monday evening to review with Council Exhibit A to this Staff Report, which is intended to describe staff's proposed process for processing telecommunication requests in greater detail.

Respectfully submitted,

J. Brent McFall
City Manager

Attachments

Attachment A - Process Flow Chart

Attachment B - Survey of Other Communities, re: Fees for Telecom

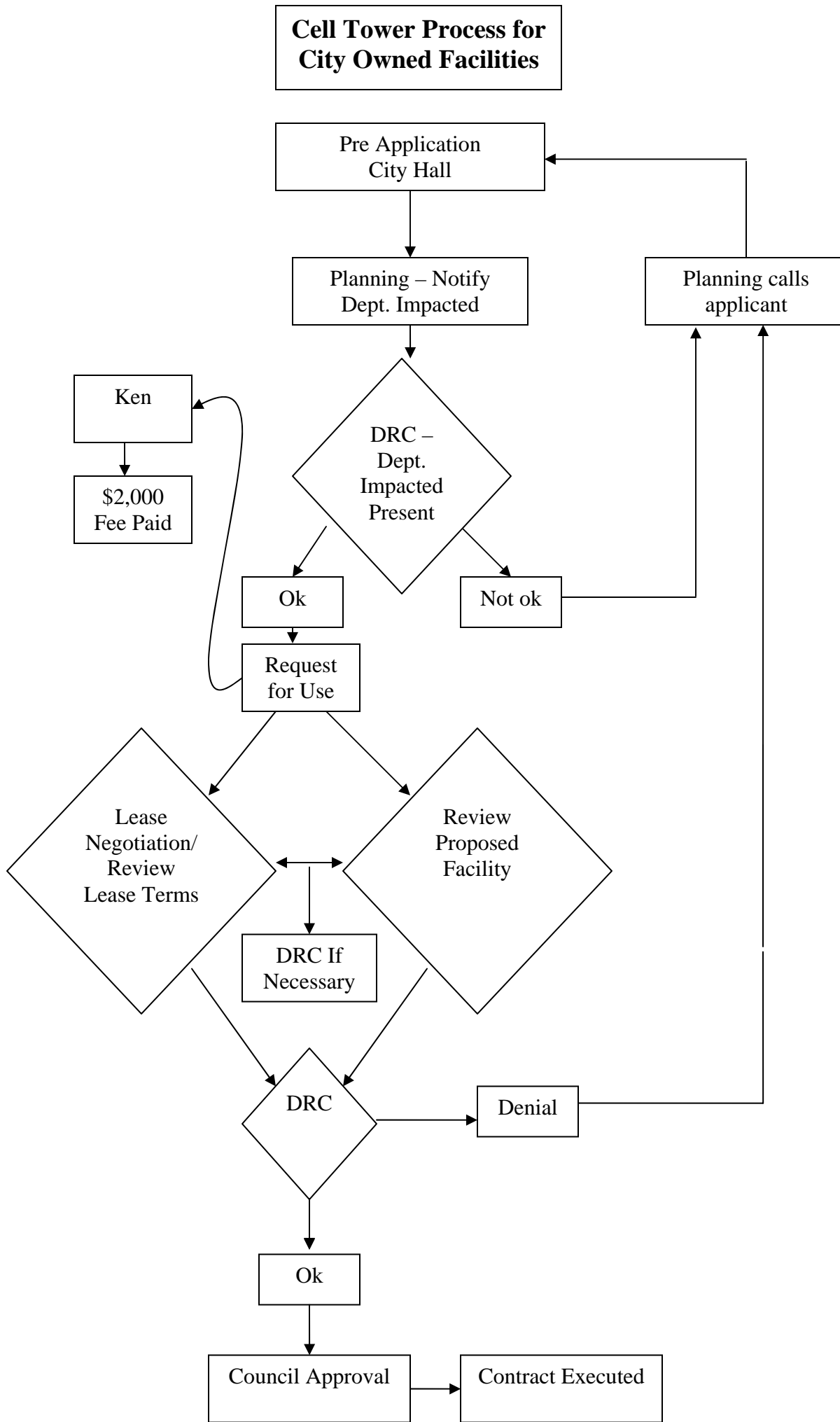


EXHIBIT B

| Government | Preapplication Meeting | Pre-app fee | Separate Application for Lease (Not Planning)? | Telecomm Fee |
|------------------|---|-------------|--|-------------------------|
| Arvada | Encouraged | No | No | \$600 - \$2500 |
| Aurora | Left message on 06/21/2010 | Unknown | Unknown | Unknown |
| Boulder | Encouraged | No | No | \$2,440 |
| Boulder County | Required | No | No | Negotiated case by case |
| Brighton | Encouraged | No | No | Negotiated case by case |
| Broomfield | Encouraged | No | No | Negotiated case by case |
| Commerce City | Encouraged | No | No | Negotiated case by case |
| Federal Heights | No | No | No | Negotiated case by case |
| Golden | Encouraged | No | No | Negotiated case by case |
| Jefferson County | Only for rezoning or a Special Use Permit | No | No | Negotiated case by case |
| Lakewood | Required | \$135 | No | Negotiated case by case |
| Louisville | Strongly encouraged | No | No | Negotiated case by case |
| Northglenn | No | No | No | Negotiated case by case |
| Thornton | Yes | No | No | Negotiated case by case |
| Wheatridge | Yes if new project or large co-location | \$200 | No | Negotiated case by case |



WESTMINSTER

Staff Report

Information Only Staff Report
September 13, 2010



SUBJECT: Water Conservation Customer Survey

PREPARED BY: Josh Nims, Water Resources Engineering Coordinator
Stu Feinglas, Water Resources Analyst

This report is for City Council information only and requires no action.

Summary Statement:

- City Council and Staff have identified water conservation as an essential component of the Comprehensive Water Supply Plan (CWSP) to meet the City's water demand at buildout.
- On May 10, 2010, City Council awarded contracts to Aquacraft, Inc. to develop a Water Conservation Plan and to perform a Water Conservation Verification Study.
- A component of the Water Conservation Verification Study is a water conservation survey to be mailed to approximately 1,000 single family residential customers.
- The main purpose of this survey is to verify how water is used in the City and to evaluate the extent that the City's residential customers are implementing conservation measures in their homes.
- The results of this survey will provide important information on the amount of conservation now being practiced and the potential for conservation in the future. Survey response information will be held in the strictest confidence and will be used only for planning purposes.
- The proposed water conservation customer survey is attached for City Council's information.

Background Information:

The 2009 Comprehensive Water Supply Plan established that water conservation is an essential component of the City's plan to meet buildout water demands. On May 10th 2010, City Council approved two contracts with Aquacraft, Inc. to implement the CWSP's water conservation objectives. Aquacraft will work with the City to develop a State-approved Water Conservation Plan and to perform a Water Conservation Verification Study. The Water Conservation Verification Study will quantify potential water conservation savings, assess the effectiveness of the City's conservation programs and review the City's projections of future water use. The Water Conservation Verification Study will help shape the focus and direction of the Water Conservation Plan.

One of the primary components of the Water Conservation Verification Study is to perform a survey of approximately 1,000 randomly chosen residential customers regarding household water use. The main purpose of this survey is to learn more about how water is used and to evaluate the extent to which the City's residential customers are implementing conservation measures in their homes. In order to encourage customers to complete the survey, five dollars will be credited to the water accounts of customers who complete and return the survey.

Once Aquacraft receives the completed surveys, a subset of approximately 100 surveyed customers will have data loggers installed on their water meters for about two weeks. The information from the data logging will be used to cross-check the survey results and will provide important information on the amount of conservation now being practiced and the potential for conservation in the future. Installation of the data logger takes about 5 minutes and does not require entry into the home. Data loggers are already used in the City and their installation is no more noticeable than a manual meter read.

All data obtained through the surveys and data loggers will be held in the strictest confidence and will be used only by the City for planning purposes. If reported, the data will only be shown in anonymous form and will not include any home or customer identifiers. With this verification data, the City will be better able to project water resources needed in the future and use that information to develop a comprehensive water conservation program.

The water conservation survey for the Water Conservation Verification Study helps achieve the City Council's Strategic Plan Goals of "Financially Sustainable City Government Providing Exceptional Services" and "Safe and Secure Community" by contributing to the objective of securing and developing a long-term water supply for the City.

Respectfully submitted,

J. Brent McFall
City Manager

Attachment



WESTMINSTER

Keycode
Name
Address
Address
Barcode

Dear Valued Water Customer:

You have been randomly selected from all of our single-family residential customers to participate in the attached survey on water use in your primary residence. The survey should take around 10-15 minutes to complete.

The main purpose of this survey is to learn more about how water is used and to evaluate the extent that our residential customers are implementing conservation measures in their homes. While conservation saves the customer money, it also translates to available water supply for our system. The results of this survey will provide us with important information on the amount of conservation now being practiced and the potential for conservation in the future.

As a token of the City's appreciation for your efforts, the City will credit your water account \$5.00 for completing and returning the enclosed questionnaire. Please allow up to 90 days for the credit to appear on your bill. If possible, will you sit down this very evening and complete the survey form, then return it in the postage-paid envelope provided? If that is not possible, we ask that you complete and return the survey by **XX/XX/XXXX**.

The information you provide will be used solely for planning purposes and for the design of water conservation communications with our customers. Individual responses will be held in the strictest confidence. The survey responses will be analyzed by an independent research firm and will be reported in group form only.

Should you have further questions about this survey, please contact Stu Feinglas, the City's water conservation coordinator, at 303-658-2386 or sfeinglas@cityofwestminster.us.

The City of Westminster is grateful for your help in the completion of this important survey. We understand your time is a precious resource – as is our water! Thank you in advance for your help in providing us important data for the wise stewardship of our water resource.

Sincerely,

Mayor Nancy McNally



Household Water Use Survey

Please answer the following questions as they pertain to the property at: **INSERT ADDRESS FIELD**

Indoor Water Fixtures and Appliances

1. Please indicate how many of each of the following types of water-using appliances or fixtures you have in your home. Please circle the appropriate number for each.

| | None | One | Two | Three | Four | Five | Six | Seven or more |
|---------------------------------|------|-----|-----|-------|------|------|-----|---------------|
| Toilets | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |
| Bathtub with shower..... | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |
| Standard Bathtub only | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |
| Whirlpool tub w/jets | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |
| Shower stall only | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |
| Indoor utility/garage sink..... | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |

2. Please indicate whether you have any of the following inside your home.

Please check the appropriate box for each.

| | Yes | No |
|--|--------------------------|--------------------------|
| Top-loading clothes washing machine | <input type="checkbox"/> | <input type="checkbox"/> |
| Front-loading clothes washing machine..... | <input type="checkbox"/> | <input type="checkbox"/> |
| Dishwashing machine | <input type="checkbox"/> | <input type="checkbox"/> |
| Evaporative/swamp cooler | <input type="checkbox"/> | <input type="checkbox"/> |
| A "whole house" water treatment system like a water softener or a reverse osmosis system | <input type="checkbox"/> | <input type="checkbox"/> |

3. How many of the toilets in your home are Ultra Low Flush (ULF), High Efficiency Toilet (HET), or dual-flush models?

| | None | One | Two | Three | Four or more | Don't Know |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| ULF (1.6 gallons likely installed '94 - '10) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| HET (1.28 gal. or less likely installed '08-10) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Dual Flush (1.6/0.8 gal ~ installed '08-10.)..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

(The flush volume of ULF and HET toilets are normally marked behind the seat in front of the tank)

4. How many of the showers in your home have low-flow (water conserving*) showerheads?

| | None | One | Two | Three | Four or more | Don't Know |
|-------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

*2.5 gallons per minute (gpm) or less, usually stamped on the showerhead

5. Do any of the showers in your home have multiple showerheads?

- Yes → How many showers have multiple heads? 1 2 3 4 or more
- No

6. How many times per week does someone use a bathtub rather than a shower in your household?

- None (0) 2 4
- 1 3 5 or more

7. Please indicate whether you have replaced any of the following since 1995 (the year new plumbing codes took effect). Please check the appropriate box for each.

| | Yes | No |
|---------------|--------------------------|--------------------------|
| Toilets | <input type="checkbox"/> | <input type="checkbox"/> |

- Showerheads.....
- Clothes washer

8. Please indicate whether you have any of the following.
(Please check all that apply.)

| | <u>Yes</u> | <u>No</u> |
|---|--------------------------|--------------------------|
| Leaking toilet (you can hear or see it running when not in use) | <input type="checkbox"/> | <input type="checkbox"/> |
| Dripping faucet | <input type="checkbox"/> | <input type="checkbox"/> |
| Leaks in your swimming pool system..... | <input type="checkbox"/> | <input type="checkbox"/> |
| Leaks in your irrigation system..... | <input type="checkbox"/> | <input type="checkbox"/> |
| Other water leaks..... | <input type="checkbox"/> | <input type="checkbox"/> |

Outdoor Landscape

9. Do you regularly water your outside landscape?

(Includes hand watering, irrigation system, hose and sprinkler, or other method.)

- Yes No → go to question #18

10. In addition to the water purchased from your water utility, do you use any of the following sources of water for your outdoor water needs? (Please check all that apply.)

- No additional sources of water used
- Well water
- Canal/ditch
- Stream/river
- Rain barrel or cistern (rainwater harvesting)
- Directing roof/rain water towards plants in the yard
- Other: _____

11. Which types of landscape are present in your yard? (Please check all that apply.)

- Turf (any variety)
- Non-native trees and shrubs
- Vegetable or flower garden
- Desert/native trees and shrubs, cacti, or other xeric plants
- Non-living ground cover (mulch, gravel, rocks, etc.)

12. About how much of your outdoor landscape is watered by hand/manually?

- All of it (100%)
- More than half
- Less than half
- None

13. Do you have an in-ground irrigation system?

- Yes No → go to question #18

14. Does your in-ground irrigation system have an automatic timer?

- Yes No

15. How frequently do you adjust the run times on your irrigation timer?

- I use the factory settings that came with the timer
- Once a year, at the start of the irrigation season
- Once a month
- Once a week
- Don't know

16. Does your automatic irrigation system have an override shut-off device such as a soil moisture sensor or rain sensor? (Please check all that apply.)

- No override shut-off device
- Yes, soil moisture sensor installed

- Yes, rain sensor installed
- Other _____
- Don't know

17. Does your automatic irrigation system have a weather-based irrigation controller (WBIC) or “smart” controller?
- No Yes Don't know

Outdoor Water Fixtures

18. Does your home have an outdoor spa or hot tub?
- Yes No → go to question #23
19. Is the outdoor spa or hot tub usually filled?
- Yes, usually filled
- No, sometimes filled
- No, it is never filled
20. Do you have an outdoor water feature like a fountain or pond that is filled regularly?
- Yes No

Swimming Pools

21. Does your home have a swimming pool?
- Yes
- No → go to question #25
22. What type of filling/re-filling system does the swimming pool have?
- Manual Automatic
23. Do you have a swimming pool cover that you use when the pool is not in use?
- Yes No

Finally, we would like to know just a little more about your household so we can learn how opinions might affect water use.

24. Who supplies water to this address?
- City of Westminster City of Broomfield
- Denver Water Crestview Water Other

25. Please indicate the extent to which you AGREE or DISAGREE with each of the following statements. Please check the appropriate box for each.

| | <u>Strongly Agree</u> | <u>Somewhat Agree</u> | <u>Somewhat Disagree</u> | <u>Strongly Disagree</u> | <u>Not Applicable</u> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| A. My water bill should contain information tailored to my property so I can better understand my water use... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. Households would conserve more water if they had an easier way to monitor their water use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. The cost of water is an important factor for me when deciding how much water to use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. Conservation of water is critical for the future of the City of Westminster | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| E. There should be financial consequences | | | | | |

- for people who use too much water.....
- F. I am aware of rebates offered by the City of Westminster
- G. Water provided by the City of Westminster is safe to drink.....
- H. The City of Westminster provides reliable water service.....
- I. My water bill is accurate.....
- J. If I contact the City of Westminster with a problem, I receive the assistance I expect
- K. The City of Westminster's water supply is enough to meet the City's current needs.....
- L. The City of Westminster's water supply is enough to meet the needs of the City over the next 25 years.....
- M. The rates I pay for water are fair.
- N. I conserve water to save money
- O. I conserve water to save energy.....
- P. I conserve water because it is the right thing to do.....
- Q. I conserve water because water is a limited resource.....

26. **Is your household responsible for paying the water bill, OR does a landlord or homeowners' association pay it?**

- Household pays
- Landlord or a homeowner's association
- Don't know

27. **When there is a regional drought, I believe the City of Westminster should:**

- The City's water supply is unlikely to be impacted, does not apply
- Ask residents to voluntarily reduce water use
- Impose mandatory water use restrictions
- Implement the same response as neighboring cities
- Don't know

28. **When was your home built?**

- Before 1940
- In the 1940s
- In the 1950s
- In the 1960s
- In the 1970s
- In the 1980s
- Between 1990 and 1994
- Between 1995 and 2000
- Between 2001 and 2005
- Between 2006 and 2010

29. **In what year did you move to this home? _____ (year)**

30. **How many bedrooms does this house have?**

- 1
- 2
- 3
- 4
- 5
- 6 or more

31. **How many people, including yourself, live full-time at this address?**

_____ Adults, including yourself (age 18+)

- _____ Teenagers (age 13-17)
- _____ Children (age 3-12)
- _____ Infants or Toddlers (under age 3)

32. What number of adults living at this address are **NOT** employed (or students) outside of the home?

- None (0)
- 1
- 2
- 3
- 4
- 5 or more

33. Do you rent or own your residence?

- Rent
- Own

34. Please provide any other information you believe would be useful for the study.

Thank you for taking the time to assist with this important research project.

All of your answers will be kept confidential.

Questions? Contact: Stu Feinglas @ 303-658-2386

Please fold and return this survey in the enclosed pre addressed and stamped envelope using the U.S. mail.