



MESA COUNTY SOLID WASTE MANAGEMENT

WESTERN COLORADO WASTE DIVERSION STUDY



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Western Colorado Waste Diversion Study

1.0 INTRODUCTION

This Western CO Waste Diversion Study was sponsored by Mesa County Solid Waste Management (MCSWM), who received a grant through the Colorado Department of Public Health and Environment's (CDPHE's) Recycling Resources and Economic Opportunity (RREO) program to fund the study. Souder Miller & Associates (SMA) was contracted by MCSWM to lead the study. Winn Cowman of SMA served as the Project Lead.

The primary objectives of the study were to examine how solid waste is currently managed and identify ways to increase waste diversion in this rural four-county area of western Colorado, which encompasses Mesa, Delta, Montrose, and Gunnison counties. The plan to accomplish the objectives entailed the following four activities:

1. Stakeholder Surveys – to gather information
2. Waste Composition Audits – to examine waste compositions
3. Stakeholder Meetings – to provide opportunities to share ideas and consider the benefits of regionalization
4. Gap Analysis – to identify gaps in infrastructure

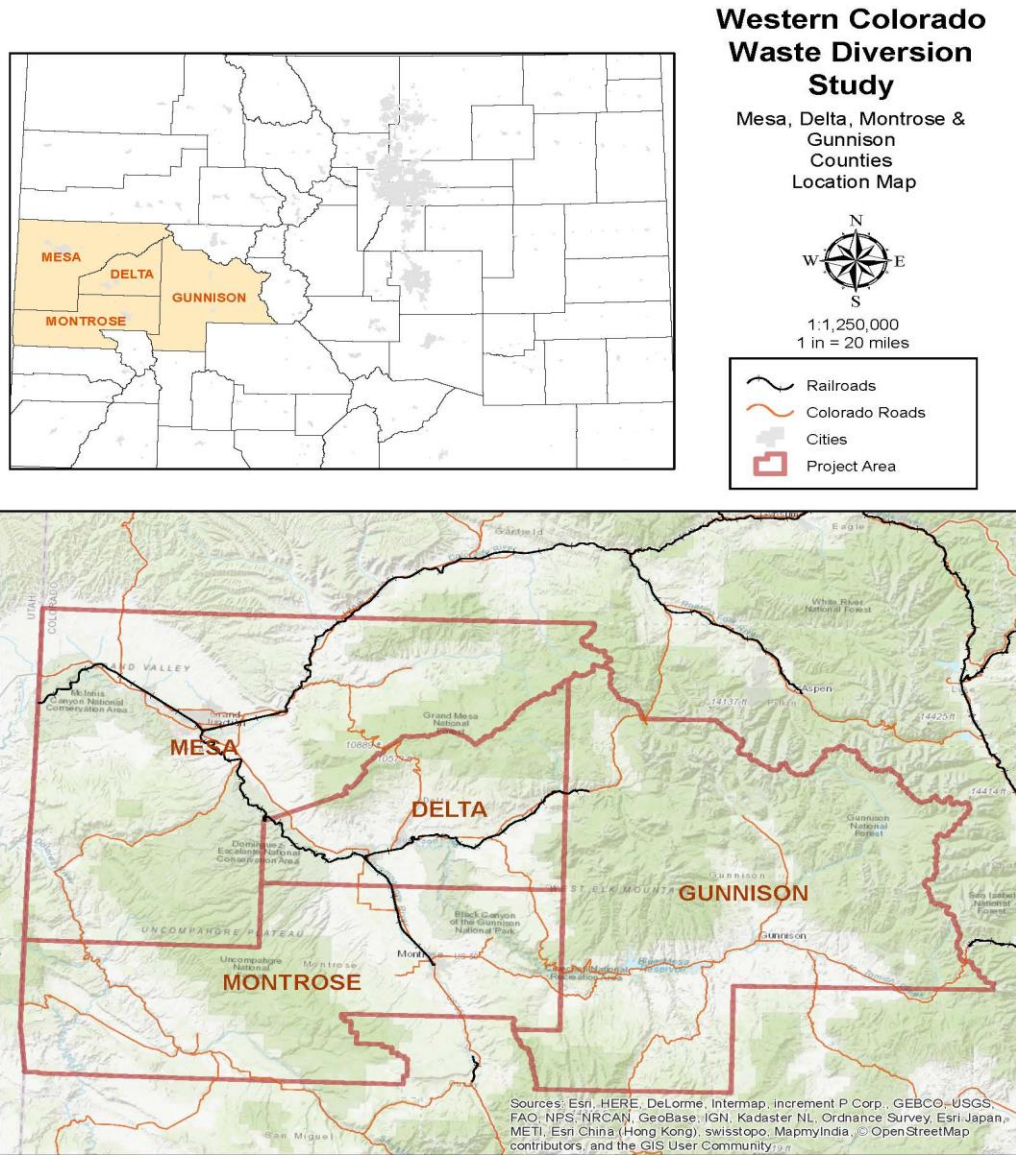
The data from these four activities are presented in this report, followed by actionable tasks aimed at increasing waste diversion. This report should be a resource for counties as they move forward with developing waste diversion goals and subsequent efforts to meet those goals.

2.0 LOCATION & DEMOGRAPHICS

Mesa, Delta, Montrose, and Gunnison counties are in western Colorado, as shown in Figure 1 on the next page. Listed below are the incorporated and unincorporated areas for each county.

Mesa County	Delta County	Montrose County	Gunnison County
<ul style="list-style-type: none"> • Grand Junction • Colbran • De Beque • Palisade • Clifton • Fruita • Fruitvale • Orchard Mesa • Loma • Mack 	<ul style="list-style-type: none"> • Delta • Cedaredge • Crawford • Hotchkiss • Orchard City 	<ul style="list-style-type: none"> • Montrose • Naturita • Nucla • Olathe • Redvale 	<ul style="list-style-type: none"> • Gunnison • Crested Butte • Marble • Mount Crested Butte • Pitkin

Figure 1 – Study Area Location Map



Demographics for each county are provided in Table 1, based on 2017 census data. Population and income statistics help to give an idea of how much household waste is generated.

Table 1- County Demographics

COUNTY	POPULATION	MEDIAN HOUSEHOLD INCOME
Mesa	151.6 k	\$52.0 k
Delta	30.6 k	\$42.5 k
Montrose	41.8 k	\$44.9 k
Gunnison	16.9 k	\$52.7 k

Figures 2, 3, 4, and 5 below are industry statistics for each of the four counties. These were taken from the Statistical Atlas website and are based on data from the US Census Bureau (2010 Census) and from the 2012-2016 American Community Survey. Industry statistics help give an idea of what types and how much commercial waste is generated in each of the five counties. These graphics also show the percentage of each industry in greater Colorado, for comparison.

Figure 2 - Mesa Industries

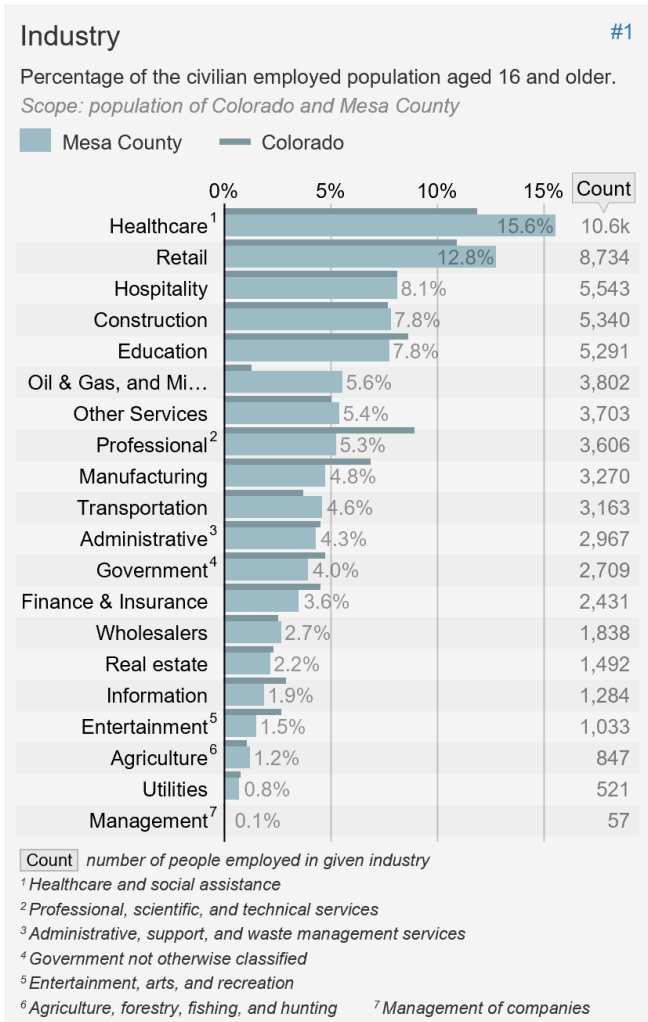
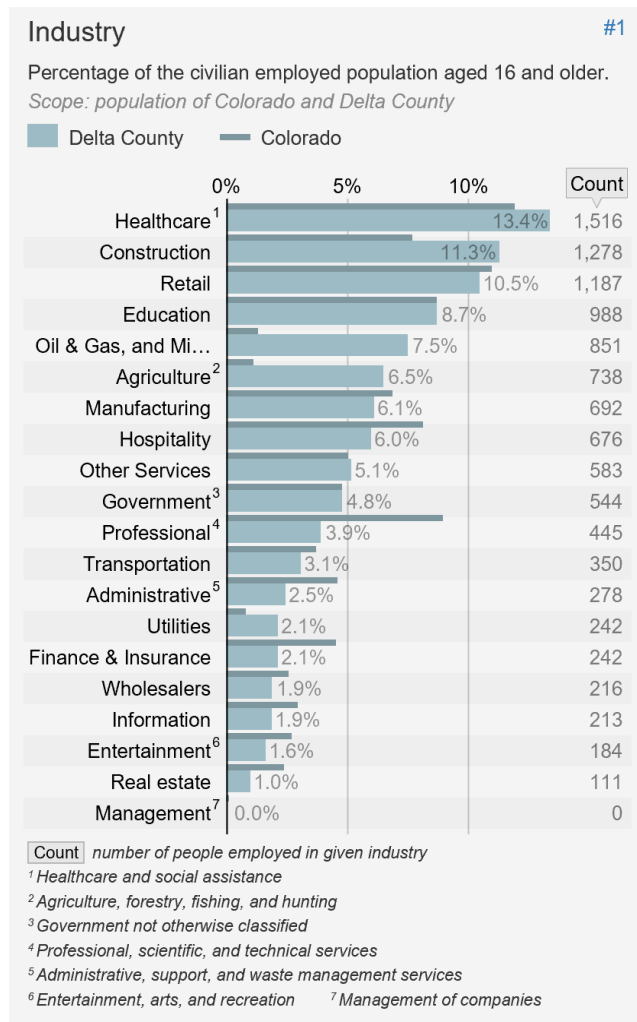


Figure 3 - Delta Industries



<https://statisticalatlas.com/county/Colorado/Mesa-County/Industries>

<https://statisticalatlas.com/county/Colorado/Delta-County/Industries>

Figure 4 – Montrose Industries

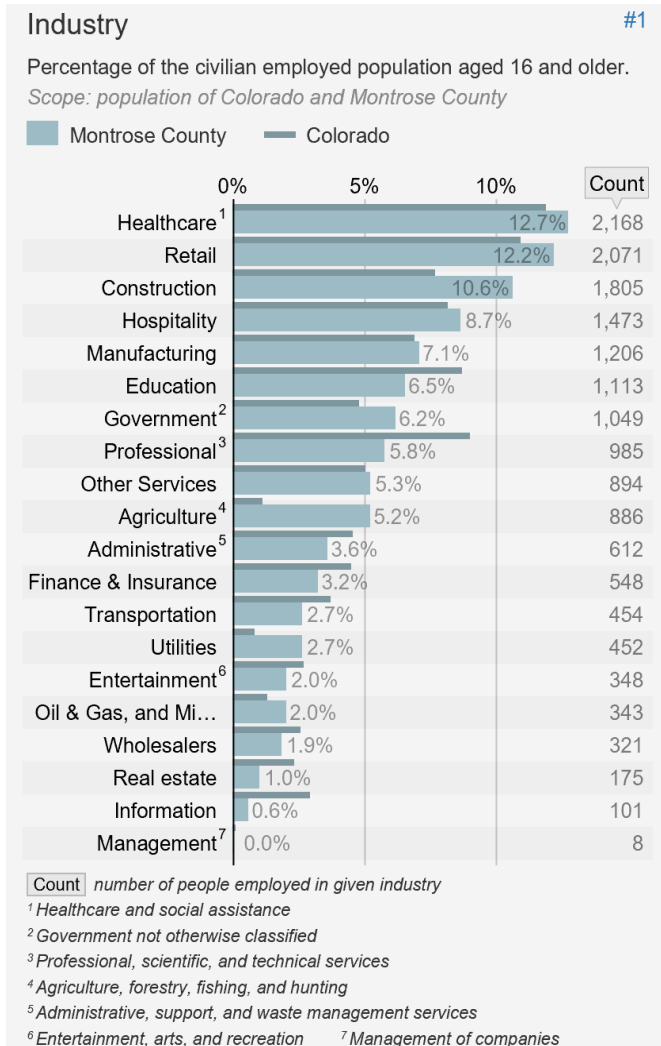
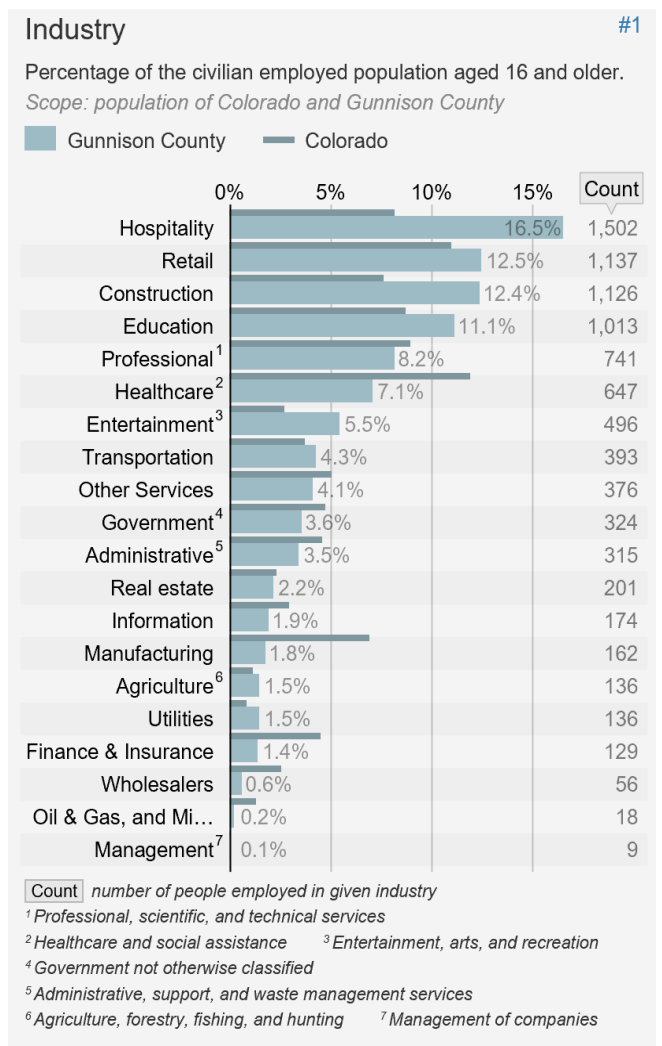


Figure 5 – Gunnison Industries



<https://statisticalatlas.com/county/Colorado/Montrose-County/Industries>

<https://statisticalatlas.com/county/Colorado/Gunnison-County/Industries>

Figures 2-5 Summary:

- Healthcare, retail, and construction are the top three industries in Delta & Montrose counties.
- The oil & gas industry is prevalent in Mesa and Delta counties.
- Construction, education and retail are in the top six for all four counties.
- Hospitality is #1 in Gunnison County and top five for Mesa and Montrose counties.
- Agriculture is prominent in Delta and Montrose counties, around 5% in both.

3.0 WASTE AUDIT DATA

3.1 Background

Waste audits were conducted at landfills in each of the four counties. The audits were conducted in accordance with the Colorado Department of Public Health & Environment's (CDPHE's) Municipal Solid Waste Regional Waste Audit Protocol and were led by SMA's Graham Cottle and Winn Cowman. Mesa County performed two six-day waste audits, while Delta, Montrose and Gunnison counties each performed one-day audits. The objective of the audits was to identify materials in the counties' municipal solid waste (MSW) stream that could potentially be diverted from landfill disposal.

3.2 Statistical Analysis

Statistical analysis was conducted on trash audit results to assess how well the samples could be expected to represent landfilled MSW in the region. This analysis can be found in Appendix A. The standard deviation measures how widely the values for each material vary around the weighted average of that material in the audit samples. A higher standard deviation is indicative of greater variation in samples; it is not unusual to see high deviations for municipal solid waste materials. A 90% confidence interval was also applied to reflect the range of values that the material weight is expected to fall within. A narrower confidence interval is typical of a larger number of samples, although this relationship is less noticeable when the underlying waste stream is highly variable (i.e., when standard deviations are high). The Delta, Montrose and Gunnison audits measured a very low number of samples and provides only a snapshot of 2018 trash stream composition for the three-county region. The Mesa County waste audits should produce more statistically valid results since a total of 46 samples were collected during two different seasons.

NOTE: *One-day waste audits are intended to provide a brief snapshot of the MSW stream. Because a very small number of trash loads were sampled, and seasonality is not taken into consideration, the results should not be construed as being definitively representative of the regional waste stream. As such, all findings, including Mesa County's, should be used judiciously and ideally remeasured every few years.*

3.3 Mesa County – Waste Audit Results

The Mesa County audit entailed two six-day sorts with samples collected from forty-six MSW trash loads at the landfill located in Grand Junction, CO. Prior to the sorts, SMA developed a sampling plan that was designed to collect loads from various locations based on population. Additionally, since waste data for Mesa County Landfill indicates that the ratio of commercial waste to residential waste is 50/50, sampling during the audit was intended to be 50% commercial and 50% residential. The final consideration for determining which loads to sort was the haulers; the sampling plan was designed to collect representative samples from each of the primary haulers. Details regarding the sample selection are presented below in the following tables. Table 2 presents samples collected during the first six-day sort in June, while Table 3 presents samples collected during the second six-day sort in September. The June date was chosen to represent summer waste flow and the September date was chosen to represent waste flow while the local university, Colorado Mesa University, was in session.

Table 2 – Sample Selection for First Mesa County Waste Audit

Mesa County	Location	Load Type	Hauler	Number of Samples
6/18/18	Grand Junction Fruita Redlands Palisade/Clifton	Commercial Commercial Residential Mixed	Rocky Mountain Sanitation Waste Management Rocky Mountain Sanitation Commercial Refuse Services	4
6/19/18	Colbran Grand Junction Grand Junction Orchard Mesa	Residential Commercial Residential Residential	Monument Waste Waste Management City of Grand Junction Rocky Mountain Sanitation	4
6/20/18	Palisade Clifton/Fruitvale Grand Junction Grand Junction	Residential Commercial Residential Commercial	Dependable Waste Services Waste Management City of Grand Junction Monument Waste Services	4
6/21/18	Grand Junction Grand Junction Grand Junction Clifton/Fruitvale	Commercial Residential Residential Residential	Waste Management City of Grand Junction City of Grand Junction Rocky Mountain Sanitation	4
6/22/18	GJ/Clifton/Orchard Mesa Grand Junction Fruita Grand Junction	Commercial Commercial Commercial Residential	Commercial Refuse Services Waste Management Waste Management City of Grand Junction	4
6/23/18	Self-Haul	Residential	N/A	3

Details regarding samples from each location are highlighted below:

- Grand Junction – Mall to 29 Rd., restaurants, multi-family, retail, The Ridges, 30 Rd. to downtown, Speedway, Mall to 25 Road, Paradise Valley N. of G Rd. residential, residential near college, downtown, North Ave., residential Columbine Rd. to 20th
- Fruita – hospital, restaurants, fast food, multi-family
- Redlands – residential
- Palisade – orchard, food bank, residential
- Clifton/Fruitvale – fast food, multi-family, churches, restaurant, pharmacy, residential
- Colbran – rural grand valley residential
- Orchard Mesa – to D Road
- Self-haul – customer dumpsters at Mesa County Landfill

Table 3 – Sample Selection for Second Mesa County Waste Audit

Mesa County	Location	Load Type	Hauler	Number of Samples
9/24/18	Grand Junction Grand Junction Grand Junction Fruita	Commercial Residential Commercial Residential	Waste Management City of Grand Junction Rocky Mountain Sanitation Waste Management	4
9/25/18	Grand Junction/Palisade Grand Junction Orchard Mesa Fruita	Commercial Residential Residential Residential	Monument Waste Rocky Mountain Sanitation Rocky Mountain Sanitation Waste Management	4
9/26/18	Clifton Grand Junction Orchard Mesa Grand Junction	Commercial Commercial Residential Residential	Monument Waste Waste Management City of Grand Junction Rocky Mountain Sanitation	4
9/27/18	Grand Junction Grand Junction Grand Junction Fruitvale	Residential Mixed Residential Residential	City of Grand Junction Waste Management City of Grand Junction Commercial Refuse Services	4
9/28/18	Clifton Grand Junction Grand Junction Clifton	Mixed Mixed Commercial Residential	Commercial Refuse Services Commercial Refuse Services Waste Management Rocky Mountain Sanitation	4
9/29/18	Self-Haul	Residential	N/A	3

Details regarding samples from each location are highlighted below:

- Grand Junction – college area, fast food, gas station, coffee shop, residential north & south of Main St., north side, restaurants, convenience stores, SE Grand Junction residential, north, airport, hospital, residential 15th to 19th and north of North Ave., multi-family, North Ave. businesses, residential Paradise Hill & north of H Rd., central businesses
- Fruita – Pine St. & surrounding residential, south of highway residential
- Redlands – residential, commercial 24th Ave. & west
- Palisade – fast food, gas station, construction
- Clifton – fast food, gas station, businesses, trailer park, south valley residential
- Fruitvale – residential near 29 Rd.
- Orchard Mesa – residential south of Unaweep & east of Middle School
- Self-haul – customer dumpsters at Mesa County Landfill

Samples from both six-day sorts had a combined weight of 10,151.4 pounds, for an average of 220.7 pounds per sample. Each approximate 221-lb. sample was sorted into 32 materials that were organized into seven primary categories. The audit results were aggregated for the county. The value for each category is expressed as a weighted average and reported as percent by weight. Each sample value was adjusted to reflect that sample's weight relative to the weight of all Mesa County waste samples.

Figure 6 summarizes the percent by weight of Mesa County’s MSW composition by primary material categories. A list of each primary category’s individual constituents is included in Appendix A. Figure 7 provides [CDPHE’s data](#) for rural Colorado for comparison, which is included in Appendix B.

Figure 6 – Mesa County 2018 Waste Audit Results Grouped by Primary Category

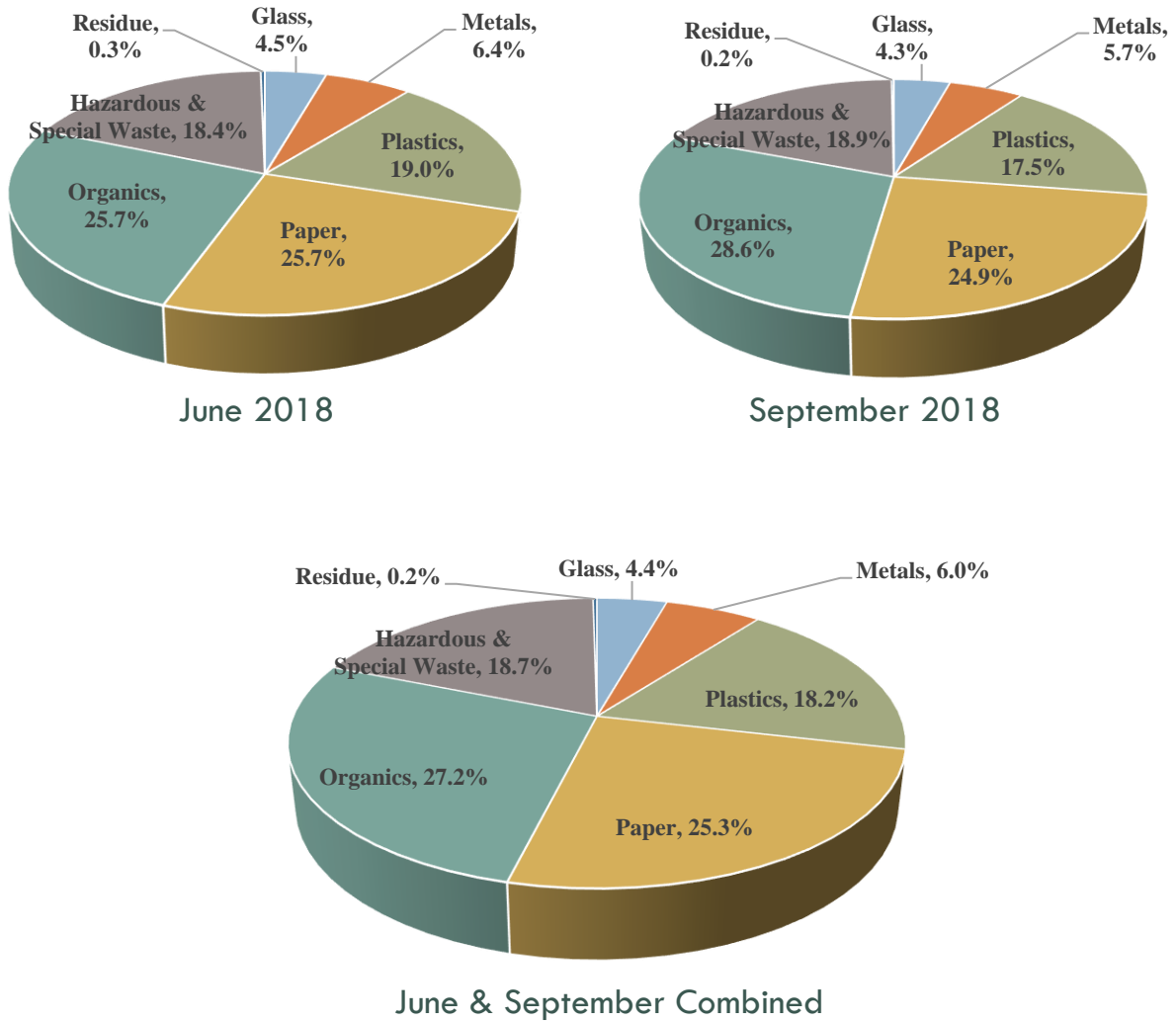


Figure 7 – Rural Colorado Average Waste Audit Results



Waste Sort Notes:

- **Average Glass (4.4%)** – mostly beverage and food containers. Sorters also noted broken glass and mirrors
- **Slightly Higher Metals (6.0%)** – sorters noted a shower rod, scooter, bike, hangers, & stroller
- **Higher Plastics (18.2%)** – sorters reported higher than usual number of water bottles (heat was close to 100 degrees during June sort). Also rafts, swamp cooler, bread maker, hoses, bike tubes, tarps, toys, trash can, food containers, laundry basket, & shelving
- **Higher Paper (19.3%)** – sorters noted magazines, office paper, junk mail and large amounts of cardboard
- **Lower Organics (27.2%)** – may be due to compost facility, which accepts green waste only. Lots of compostable bathroom and food soiled paper was noted, along with diapers and containerized food waste.
- **Slightly Higher Special Waste (18.7%)** – sorters noted paint cans, pharmaceuticals, syringes, used oil filters/containers, antifreeze, fluorescent bulbs, batteries, weed killer, many aerosols, & propane. Textiles – lots of clothing (some new with tags), shoes, carpets, rugs, blankets, & couch cushions. C&D – granite, sheetrock, carpet padding, shingles, school chairs, tables, kitchen sink, HVAC materials, swamp cooler, painted wood, & plywood. Electronics – noted phones, speakers, various cables, and an iPad.

Observed Dumping (loads not sorted):

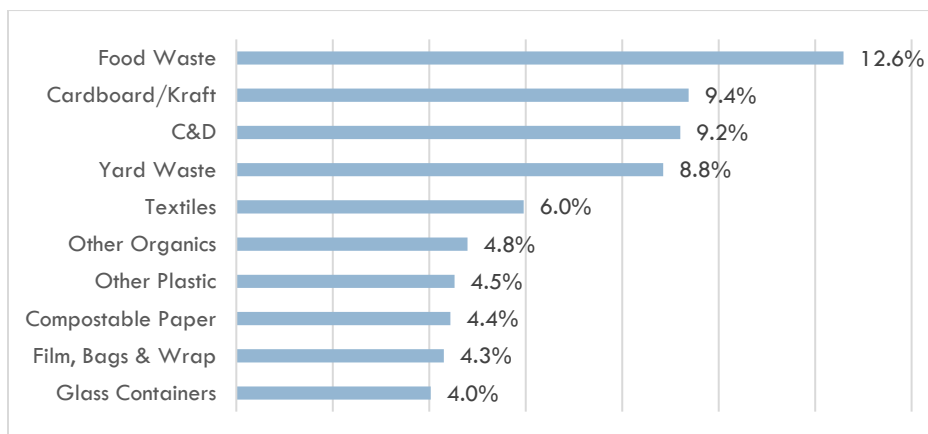
- Many loads of mattresses only.
- Many loads of cardboard only.
- Lots of C&D.
- Loads of tree trimmings and stumps.



Many toys were found during the June sort at Mesa County Landfill.

Figure 8 compares relative weights for the top 10 individual materials within the primary categories; these 10 materials represent 68% of all materials measured. The chart showing all 32 materials is in Appendix A.

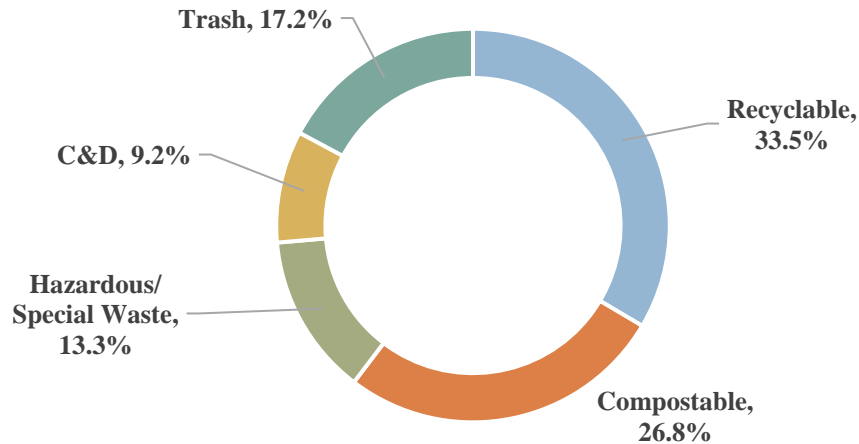
Figure 8 – Mesa County 2018 Top Ten Most Prevalent Materials



3.4 Mesa County – Diversion Potential

Materials from the trash audit that could have been diverted from landfill disposal using typical reuse, recycling, or recovery programs are shown in Figure 9 below. The “Trash” category in this figure, at 19.2%, represents waste that could not be diverted. Materials listed as “Other” (Other Plastics, Other Paper, Other Organics, etc.) in Figure 8 (complete list is in Appendix A) are included in the Figure 9 “Trash” category because those materials are not currently divertable.

Figure 9 – Mesa Potential for Diversion through Typical Recycling Programs (2018)



Approximately 82.8% of the materials could have been diverted using typical reuse, recycling, compost, or recovery programs, most of which are currently available in Mesa County.



Photo taken during Mesa County Landfill June waste audit.

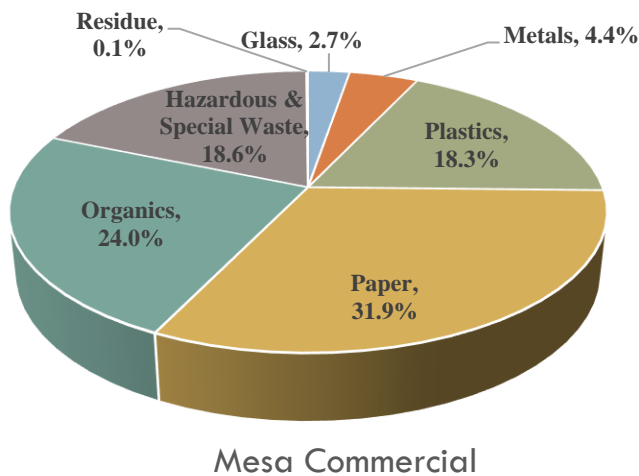
Noteworthy 2018 Findings:

- **33.5% traditional recyclables** – glass, metals, plastic containers, and paper materials
- **26.8% compostable** - food waste, compostable paper, green waste and clean wood
- **13.3% hazardous/special waste** – materials that have specific disposal guidelines and options other than landfilling – hazardous waste, batteries, electronics, paint, textiles, and motor vehicle waste

3.5 Mesa County – Commercial & Residential Findings

The Mesa County waste audit had a large sample size, 46 samples, as compared to sorts in the other three counties studies. This allowed for a more in-depth review of Mesa County’s data. Mesa County was divided into three geographical areas, East, Central and West, which showed little variation. Those results can be seen in the stakeholder presentations, which are included in Appendix D. Additionally, commercial data was compared to residential data. Figures 10, 11 and 12 below compare Mesa County’s commercial only samples to residential only samples. Note that mixed loads were excluded from this analysis. Also noteworthy is that commercial waste includes multi-family units (MFU), so a significant amount of residential waste is included in commercial.

Figure 10 – Mesa County 2018 Commercial vs. Residential Results



Noteworthy 2018 Findings:

- **Hazardous & Special Waste** – higher in commercial samples.
- **Glass** – higher in residential samples, likely due to noted beverage containers in residential samples.
- **Plastics** – are similar.
- **Paper** – significantly higher in commercial samples, likely due to more cardboard in commercial loads.
- **Organics** – significantly higher in residential samples, due partly to higher food waste, yard waste, and other.

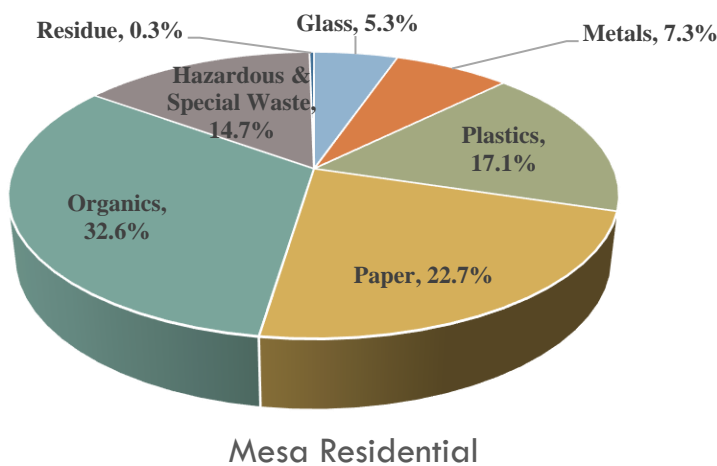
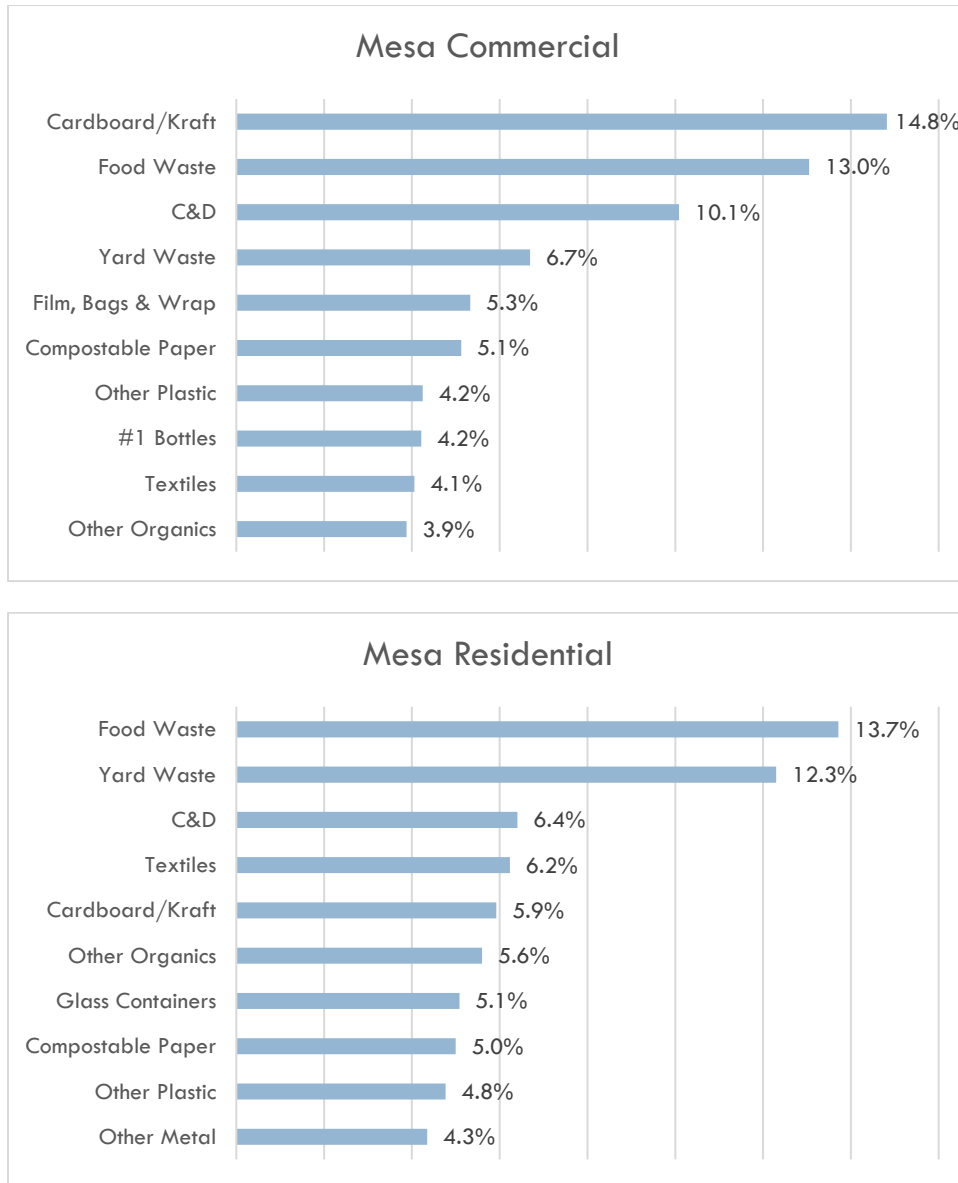
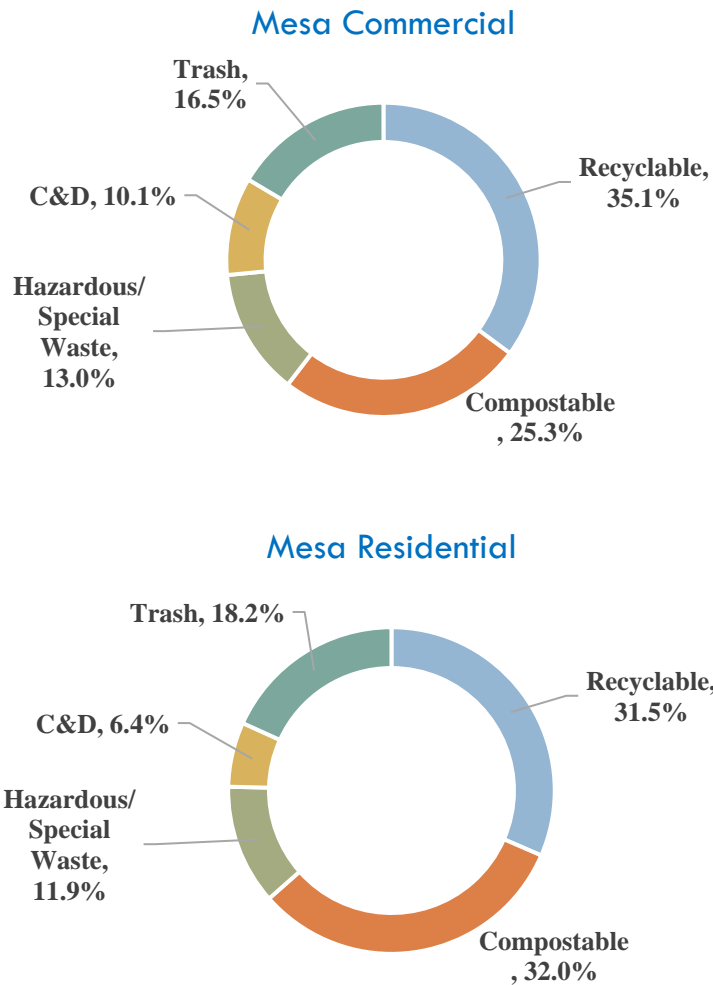


Figure 11 – Top 10 Materials in Mesa Commercial vs. Residential 2018**Findings:**

- Food Waste is the largest component of residential waste, while cardboard and craft paper are the largest component of commercial waste.
- Yard waste is significantly higher in residential (12.3%) waste as compared to commercial (6.7%).
- Food waste is similar in residential (13.7%) versus commercial (13%).
- Textiles are higher in residential waste (6.2%) as compared to commercial (4.1%).
- Cardboard and craft paper are much more prevalent in commercial samples (14.8%) versus residential (5.9%).
- Glass containers are significantly higher in residential waste (5.1%) as compared to commercial (2.5%).

Figure 12 – Potential for Diversion Mesa Commercial vs. Residential (2018)



2018 Findings:

- Similar diversion potential for commercial and residential waste in Mesa County
- Higher compostable material in residential
- Higher recyclable material in commercial
- Higher C&D in commercial
- Similar hazardous, special waste & trash

3.6 Delta County - Waste Audit Results

The Delta County waste audit was conducted at Adobe Buttes Landfill on samples taken from five MSW trash loads. One sample was residential and the other four samples were mixed residential and commercial. Details regarding the sources of the waste are as follows:

- Olathe – residential & commercial/ Double J hauler
- Hotchkiss – primarily residential/ Double J hauler
- City of Delta – schools, restaurants, government, Top of Hill residential/ City of Delta hauler
- Paonia – residential/ Roberts hauler
- Delta – government, newspaper, 95% residential per driver/ City of Delta hauler

The samples had a combined weight of 1,154 pounds, for an average of 230.8 pounds per sample. Each 231-lb. sample was sorted into 32 materials that were organized into seven primary categories. The audit results were aggregated for the county. The value for each category is expressed as a weighted average and reported as percent by weight. Each sample value was adjusted to reflect that sample’s weight relative

to the weight of all Delta County waste samples. Figure 13 summarizes the percent by weight of the Delta County MSW composition by primary material category. Note that individual materials are grouped into primary categories for this chart. See Appendix A for a listing of each primary category’s constituents.

Figure 13 – Delta County 2018 Waste Audit Results Grouped by Primary Category

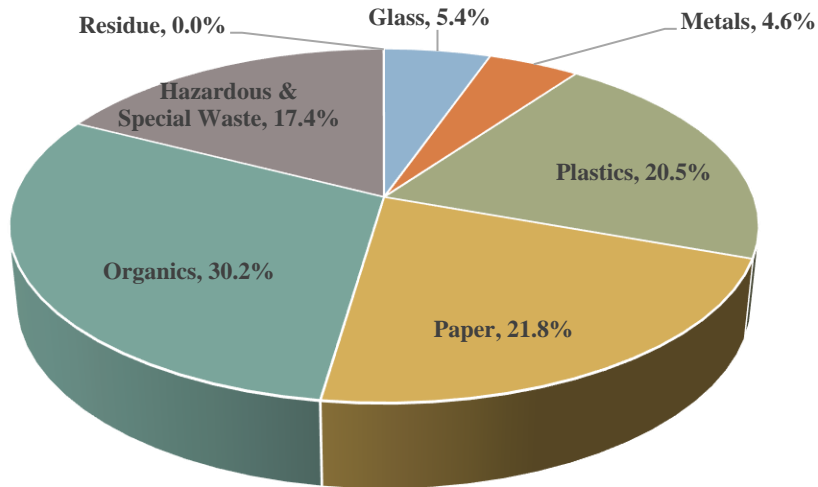
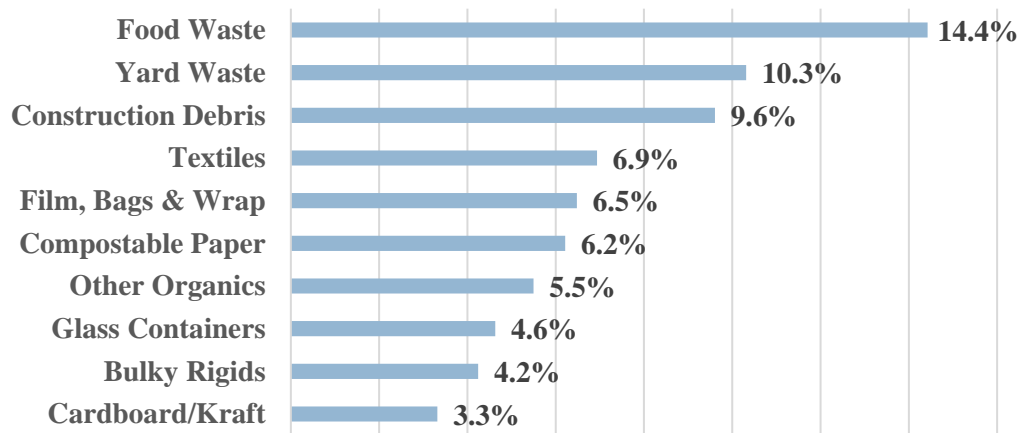


Figure 14 compares relative weights for the top 10 individual materials within the primary categories; these 10 materials represent 71.7% of all materials measured. As shown, organics constituted 30.2% of all materials measured in the Delta County samples, with food and yard waste comprising most of that weight, at 14.4% and 10.3% respectively. A similar chart for all 32 materials is provided in Appendix A.

Figure 14 – Delta County 2018 Top Ten Most Prevalent Materials



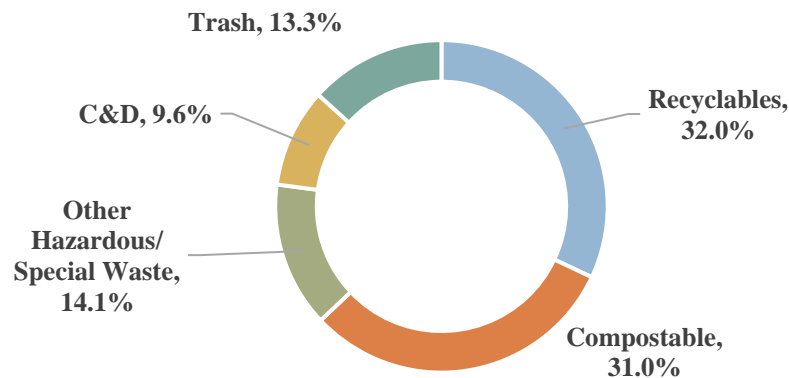
Note:

- **Organics** – constitute approximately one third of all materials measured in the Delta County samples, with food and yard waste (weeds, brush clippings, grass) comprising most of that weight
- **Low cardboard (3.3%)** – compared to an average of 7% in other rural CO audits
- **Hazardous & special waste** – included medical, automotive, carpet, and fluorescent bulbs
- Results are overall consistent with other rural CO audits

3.7 Delta County – Diversion Potential

Materials from the trash audit that could have been diverted from landfill disposal using typical reuse, recycling, or recovery programs are shown in Figure 15 below. The “Trash” category in this figure, at 13.3%, represents waste that could not be diverted. Materials listed as “Other” (Other Plastics, Other Paper, Other Organics, etc.) in Figure 14 (complete list is in Appendix A) are included in the Figure 15 “Trash” category because those materials are not currently divertable.

Figure 15 – Delta Potential for Diversion through Typical Recycling Programs (2018)



Approximately 86.7% of the materials could have been diverted using typical recycling programs, most of which are currently available in Delta County.



Photo during Adobe Buttes Landfill sort.

Noteworthy 2018 Findings:

- **32% recyclables** – glass, metals, plastic containers, and paper materials
- **31% organics** – food waste, yard waste, clean wood, & compostable paper
- **14.1% hazardous/special waste materials** – materials with specific disposal guidelines and options for diversion – hazardous waste, batteries, electronics, paint, clothing, bla medical, motor vehicle waste, & light bulbs

3.8 Montrose County – Waste Audit Results

The Montrose County audit was performed at the county landfill on samples taken from five MSW trash loads. Two of the samples were from residential, one was commercial, and two were mixed residential and commercial. Details regarding the sources of the waste are as follows:

- Oak Grove – mixed southwest rural Montrose County, three residential dumpsters and one hotel/ Oak Grove Disposal hauler
- SE Montrose – mixed residential and fast food/ Waste Management hauler
- City of Montrose – residential English Garden area/ City of Montrose hauler
- City of Montrose – mixed Fox Hill and Fox Park area/ City of Montrose hauler
- City of Montrose – commercial downtown area/ Waste Management hauler

The samples had a combined weight of 1,118.3 pounds, or 223.7 pounds per sample. Each 224-lb. sample was sorted into 32 materials that were organized into seven primary categories. The audit results were aggregated for the county. The value for each category is expressed as a weighted average and reported as percent by weight. Each sample value was adjusted to reflect that sample's weight relative to the weight of all Montrose County trash samples. Figure 16 summarizes the percent by weight of Montrose County's MSW composition by primary material categories. Note that individual materials are grouped into primary categories for this chart.

Figure 16 – Montrose County 2018 Waste Audit Results Grouped by Primary Category

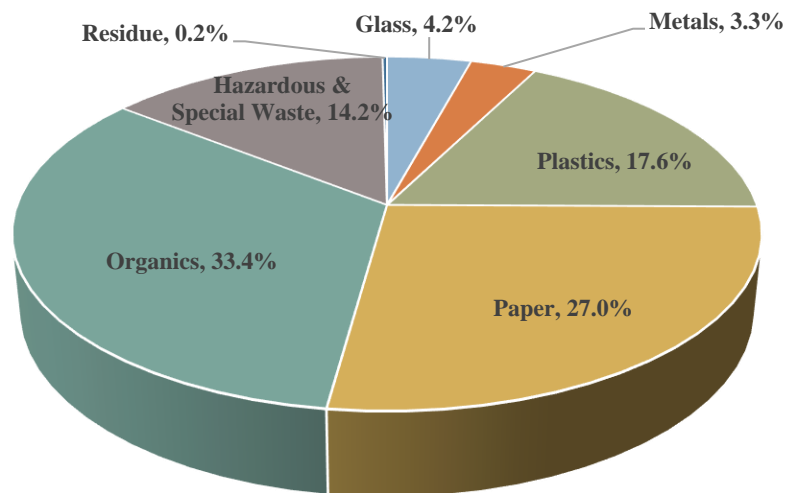
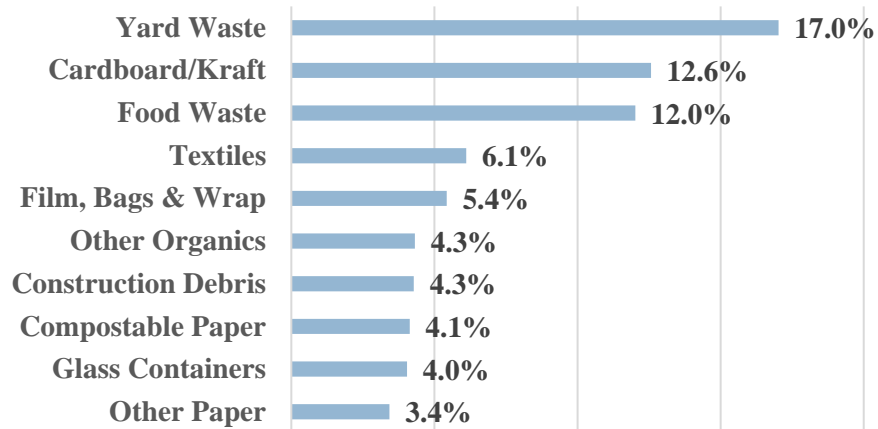


Figure 17 compares relative weights for the top 10 individual materials within the primary categories; these 10 materials represent 73.4% of all materials measured. As shown, organics constituted one third of all materials measured in the Montrose County samples, with yard and food waste comprising most of that weight, at 17.0% and 12.0% respectively. A similar chart for all 32 materials is provided in Appendix A.

Figure 17 – Montrose County 2018 Top Ten Most Prevalent Materials



Noteworthy 2018 Findings:

- **Yard waste high** – (17%, while typical rural CO is 10.1%) likely due to sampling during summer months
- **Cardboard high** – (12.6%, while typical rural CO is 6.6%) this is seen throughout the region, maybe due to reliance on online retail in rural communities
- **Compostable paper** – (4.1%) this is a new sort category that helps demonstrate the need for organics processing in the region

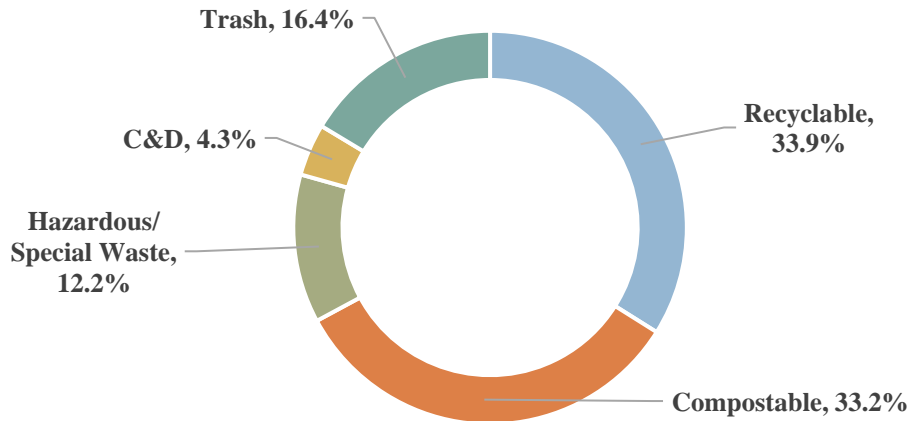


Photo taken during Montrose County Landfill waste audit.

3.9 Montrose County – Diversion Potential

Materials from the trash audit that could have been diverted from landfill disposal using typical reuse, recycling, or recovery programs are shown in Figure 18 below. The “Trash” category in this figure, at 16.4%, represents waste that could not be diverted. Materials listed as “Other” (Other Plastics, Other Paper, Other Organics, etc.) in Figure 17 (complete list is in Appendix A) are included in the Figure 18 “Trash” category because those materials are not currently divertable.

Figure 18 – Montrose Potential for Diversion through Typical Recycling Programs (2018)



Approximately 83.6% of the materials could have been diverted using typical recycling programs, most of which are currently available in the region.

Notes:

- **33.9% recyclables** – glass, metals, and plastic containers plus paper materials
- **33.2% compostable** – food waste, yard waste, compostable paper and clean wood
- **12.2% hazardous/special** – is materials with specific disposal guidelines and options for diversion – petroleum products, pharmaceuticals, aerosols, clothing, shoes, & electronics

3.10 Gunnison County – Waste Audit Results

The Gunnison County audit was performed at the county landfill on samples taken from five MSW trash loads. Two of the samples were from residential and three were mixed residential and commercial. Details regarding the sources of the waste are as follows:

- Dos Rios – mixed neighborhoods & commercial/ Golden Eagle hauler
- Gunnison – mixed multi-family & commercial/ City of Gunnison hauler
- Gunnison – residential Antelope Hills subdivision/ Golden Eagle hauler
- Gunnison – residential in city limits/ City of Gunnison hauler
- Crested Butte – mixed Crested Butte transfer station/ Waste Management hauler

The samples had a combined weight of 1,118.2 pounds, or 223.6 pounds per sample. Each 224-lb. sample was sorted into 32 materials that were organized into seven primary categories. The audit results were aggregated for the county. The value for each category is expressed as a weighted average and reported as percent by weight. Each sample value was adjusted to reflect that sample’s weight relative to the weight of all Gunnison County trash samples. Figure 19 summarizes the percent by weight of Gunnison County’s MSW composition by primary material categories. Note that individual materials are grouped into primary categories for this chart.

Figure 19 – Gunnison County 2018 Waste Audit Results Grouped by Primary Category

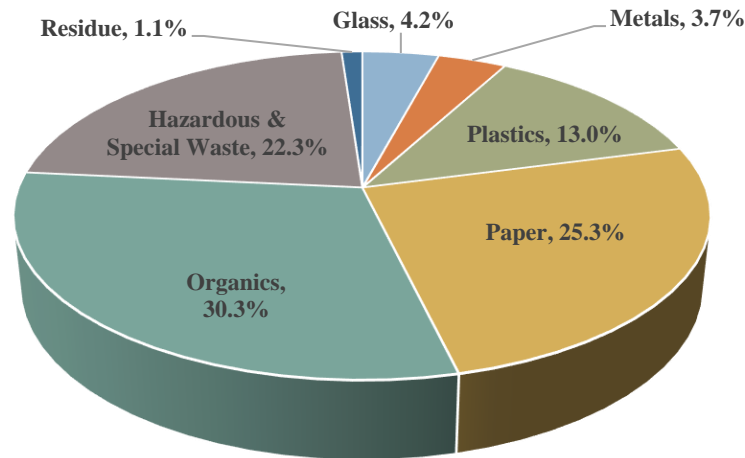
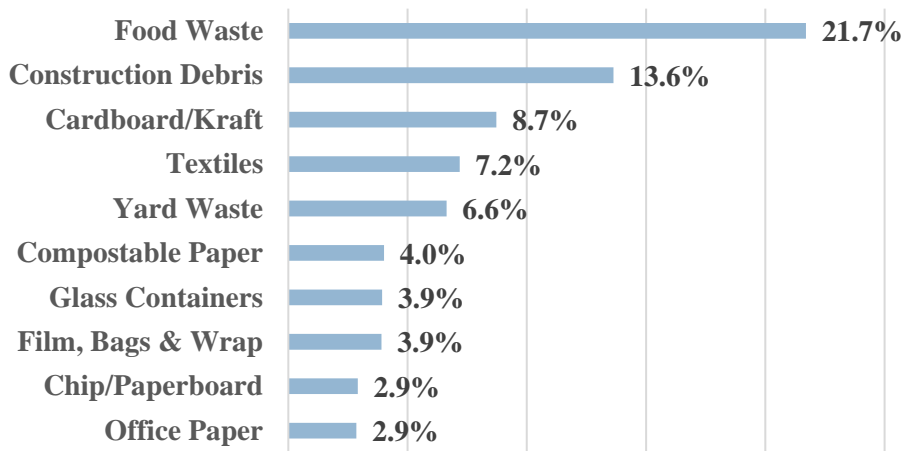


Figure 20 compares relative weights for the top 10 individual materials within the primary categories; these 10 materials represent 75.5% of all materials measured. As shown, organics constituted approximately one third of all materials measured in the Gunnison County samples, with food waste comprising most of that weight, at 21.7%. A similar chart for all 32 materials is provided in Appendix A.

Figure 20 – Gunnison County 2018 Top Ten Most Prevalent Materials

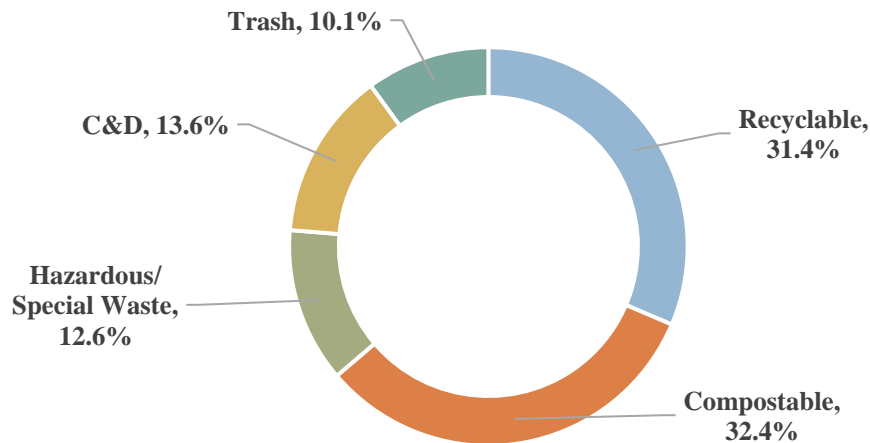


Noteworthy 2018 Findings:

- **Food waste slightly high** – 21.7%, while typical rural CO is 19.9%
- **Construction debris high** – 13.6%, while typical rural CO is 8.6%
- **Cardboard slightly high** – 8.7%, while typical rural CO is 6.6%, this is seen throughout the region, maybe due to reliance on online retail in rural communities
- Results are overall consistent with other rural CO audits

3.11 Gunnison County – Diversion Potential

Materials from the trash audit that could have been diverted from landfill disposal using typical reuse, recycling, or recovery programs are shown in Figure 21 below. The “Trash” category in this figure, at 22.5%, represents waste that could not be diverted. Materials listed as “Other” (Other Plastics, Other Paper, Other Organics, etc.) in Figure 20 (complete list is in Appendix A) are included in the Figure 21 “Trash” category because those materials are not currently divertable.

Figure 21 – Gunnison Potential for Diversion through Typical Recycling Programs (2018)

Approximately 89.9% of the materials could have been diverted using typical reuse, recycling, compost, or recovery programs, many of which are currently available in Gunnison County.

Notes:

- **31.4% recyclables** – glass, metals and plastic containers plus paper materials
- **32.4% organics** – food waste, yard waste, compostable paper and clean wood
- **12.6% hazardous/special** – materials with specific disposal guidelines and options for diversion – printer cartridges were noted during Gunnison waste sort

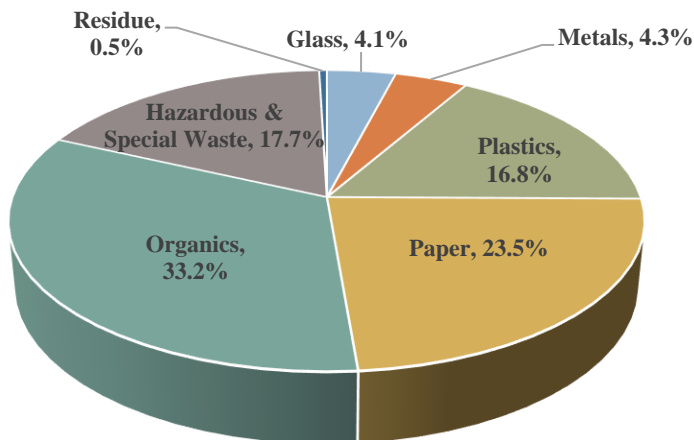
3.12 Regional Waste Audit Observations

To provide an overarching sense of waste composition in the western region, an aggregate of results collected from all four areas was compiled in Figure 22. The regional results are consistent with those measured in other rural Colorado counties and multi-county regions over the last several years. This comparative data is provided in Appendix B.



Photo taken during Gunnison County waste sort.

Figure 22 – Mesa, Delta, Montrose & Gunnison 2018 Combined Waste Audit Result



NOTE:
Five samples from each of the four counties were used to create this graph.

These waste audit results illustrate an opportunity to improve waste diversion in the study area. Materials that could have been diverted, instead of landfilled, ranged from 82.8% to 89.9% of the samples audited. As such, it is recommended that this region, along with their waste management stakeholders, consider the benefits and impacts of expanded waste diversion policy, programs, and infrastructure to encourage reuse, repurposing, recycling, and organics recovery.

Future focus for waste diversion in this western region should consider the following materials due to high quantities in the waste stream and their diversion potential:

Recommended Focus Areas:

- **Food and yard waste** – could be composted at existing facilities in the region, most of which accept green waste (12.1% of regional MSW) and could consider expanding to accept food waste (15.9% of regional MSW), which isn't currently composted at any commercial facilities in the region
- **C&D** – third largest component of the regional MSW, at 8.7%, which doesn't account for the many C&D only loads that are disposed at regional landfills (Note: this study only examined MSW, which is everyday items discarded by citizens and businesses in trash)
- **Cardboard** – (7.7% of regional MSW) one of the most valuable and recyclable materials, cardboard should be targeted for diversion by all residential and commercial waste generators
- **Textiles** – (6.5% of regional MSW) growing quantity of textiles in waste streams across Colorado (and nationally) suggest the need for more accessible reuse and recycling opportunities
- **Mattresses** – mattresses were a hot topic during this study because they are difficult to manage in landfills and are currently recyclable in CO (at least one facility began tracking mattresses during the study)

While infrastructure for recycling C&D materials is not widely available, the prevalence of C&D in MSW samples indicates an opportunity for future diversion solutions, including the possibility of a regional C&D processing facility. There are also opportunities for commercial compost facilities and mattress recycling in the region.

4.0 STAKEHOLDER MEETINGS & SURVEY

4.1 Stakeholder Meeting Planning

Jennifer Richardson and Barrett Jensen of Mesa County compiled the stakeholder list for the region, with help from point contacts at the other three counties. Prior to each meeting, polls were emailed to stakeholders to determine the best dates and times to meet. Once a date was determined, an email invite was sent to all stakeholders with an invitation document attached for posting on websites to provide public notice of the meetings. SMA's Winn Cowman facilitated the stakeholder meetings and Graham Cottle of SMA recorded the minutes. Following each meeting, the presentation and/or minutes were emailed to stakeholders.

4.2 Stakeholder Meeting Details

Four meetings were held over the course of the study. The kick-off stakeholder meeting was held at the Grand Junction Workforce Center on May 29th of 2018. The study was introduced and each of the components were

discussed. In particular, the waste audit process was described in detail to help recruit volunteers. Also discussed in detail was the survey, which was emailed to all stakeholders shortly after the kick-off meeting. Time was provided at the end of the meeting for questions and discussion. The presentation and minutes from all four meetings are presented in Appendix C.

The second stakeholder meeting was held after waste audits were performed in all four counties, so there were several months between the first and second meeting. The meeting was held in Montrose, Colorado at the Montrose County Public Works Facility on October 24th of 2018. The results of the survey and waste audits were presented at this meeting and stakeholders were asked to help clarify infrastructure data. There was also an opportunity for discussion during and after the data was presented. Additional data was requested by stakeholders during this meeting, specifically waste audit data comparing rural areas in the counties to cities and towns.

The third stakeholder meeting was held again at the Montrose County Public Works facility in Montrose, CO on November 16, 2018, and had a round table discussion format. Winn Cowman of SMA briefly presented the findings of the city versus rural results for Mesa, Delta and Montrose counties. Gunnison County did not have commercial-only samples, so that analysis was not completed for Gunnison. A slide with talking points was presented, and the group was asked to help identify gaps for the region.

The stakeholder process paused for the holidays and resumed for the final meeting on February 7, 2019, which was held at the Grand Junction Work Force Center. An overview of the waste audit findings and available infrastructure was presented to provide opportunities for corrections. That was followed by a discussion of identified gaps. During the last portion of the meeting, the group identified steps that are currently being taken to address the gaps, along with actionable items that stakeholders are willing to pursue.

More detail of what was discussed at each of the meetings is provided in the presentations and minutes, which are included in Appendix C.

4.3 Stakeholder Survey

The stakeholder survey was discussed during the kick-off meeting. Participants were asked to complete the online survey, which was sent electronically following the meeting, on June 30th, using Survey Gizmo software. The survey gathered data on current infrastructure, as well as attitudes toward regional efforts and waste diversion. The data gathered from the survey was presented and discussed during the following stakeholder meetings, to ensure accuracy, address potential gaps in the data, as well as gaps in waste management and diversion infrastructure. A report of the survey results is provided in Appendix D.

5.0 INFORMATION COLLECTED

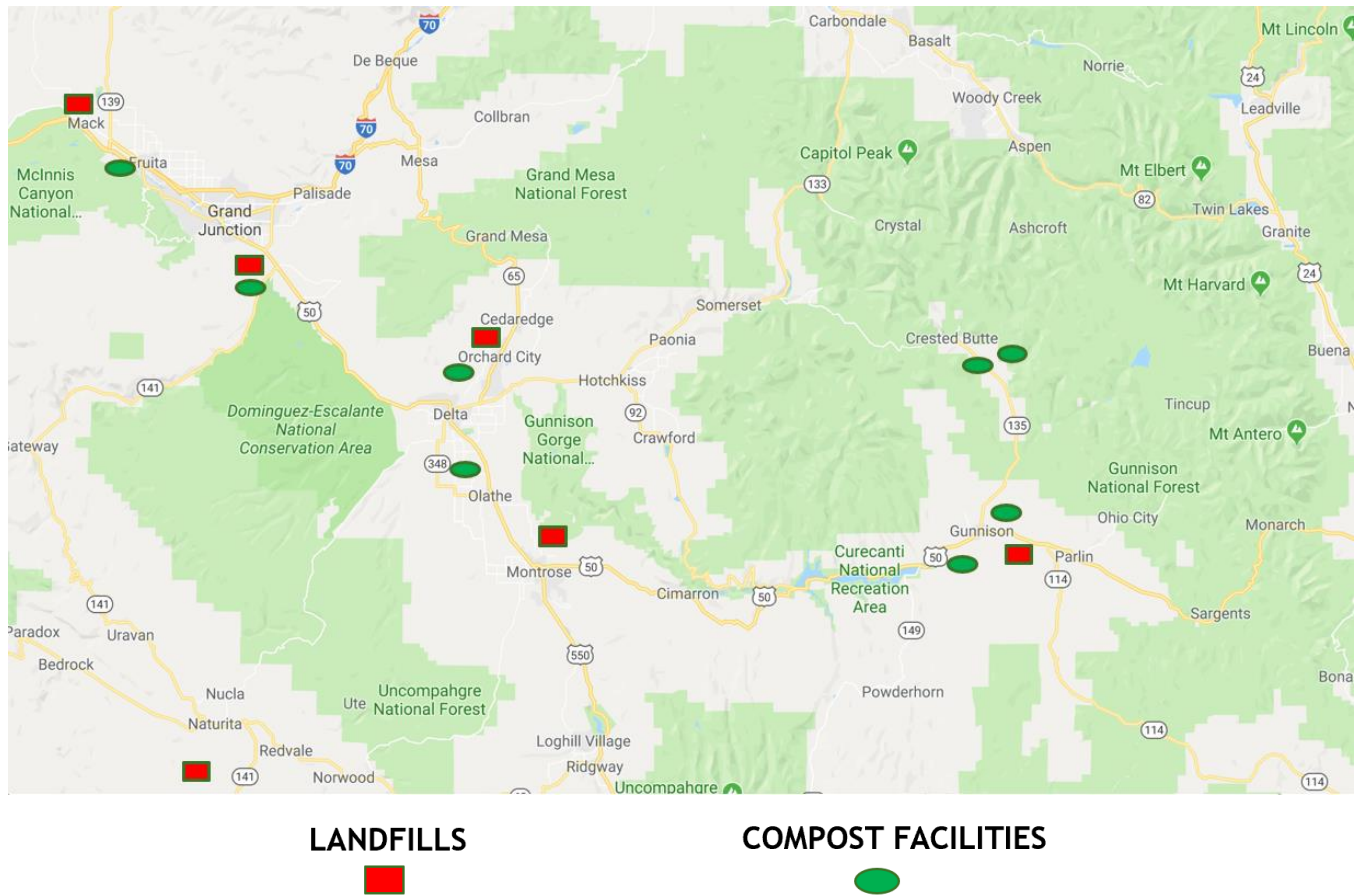
The stakeholder survey, meetings, and follow-up calls were all used to gather information needed for the gap analysis. Existing waste management infrastructure was examined, along with waste flows and current policies.

5.1 Western CO – Landfills & Compost Facilities

Presented in Figure 23 below, there are six landfills in the four-county region, with Mesa and Montrose counties having two landfills, and Delta and Gunnison counties with only one. Each county has a county-owned

landfill, which is where the waste audits for this study were conducted. Additionally, there are two privately owned landfills, S-Road Disposal in Mack, CO, and Broad Canyon Landfill in Naturita, CO. Locations of these facilities are shown on Figure 24.

Figure 23 – Map of Landfills & Compost Facilities in the Region



There are three commercial compost facilities in the region; Mesa County Landfill, which accepts green waste only; CB Industries in Austin, CO, which composts biosolids and sawdust; and Guerilla Composting in Crested Butte, CO, which accepts food and green waste. Three waste water treatment plants (WWTP) in the region compost their own biosolids, City of Fruita WWTP, City of Gunnison WWTP, and City of Crested Butte WWTP. The City of Gunnison WWTP accepts green waste from residents for composting biosolids. Western State Colorado University, also in Gunnison, composts food waste from their dining hall using an in-vessel method. And finally, 3XM in Olathe, CO is an agricultural compost facility that composts feedlot manure. Figure 24 shows the locations of each of these facilities.

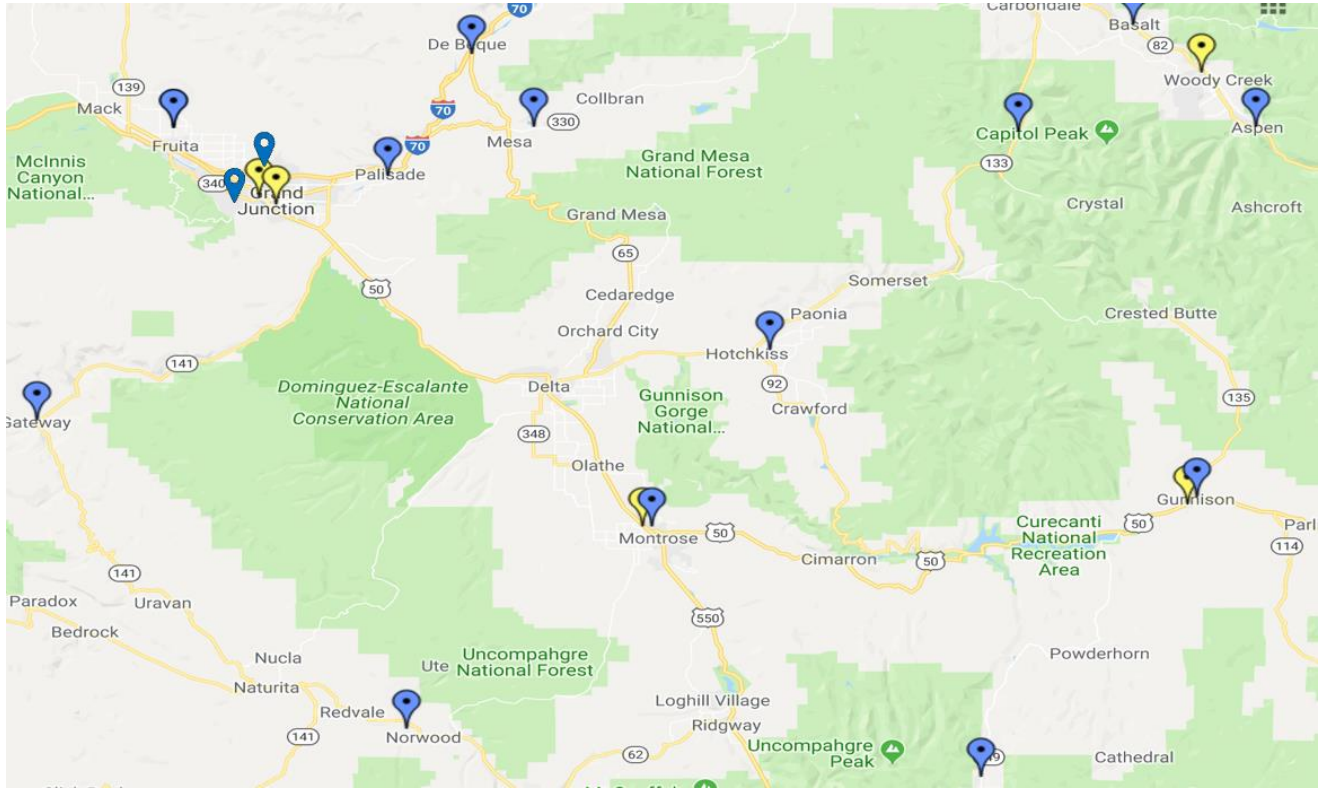
5.2 Western Colorado – Recycling Facilities

Many recycling facilities exist in the study area. Figure 24 below shows the locations of drop-sites and processing facilities for traditional recyclables.

Note:

- Waste Management also has bins located at various City Market locations in Mesa County for collecting newspaper to be recycled

Figure 24 – Map of Processing Facilities & Drop-off Locations (Traditional Recyclables)



RECYCLING FACILITY (MRF)



RESIDENTIAL DROP-OFF CENTER



5.3 Western CO – Haulers Collecting Recyclables

Efforts were made to identify haulers in the region that collect recyclables. The following hauler information was provided during the study. There may be additional haulers not identified, as haulers in Colorado do not have registration requirements, so they are the least regulated component of the system, and as such, may operate within the system without much notice.

Table 4 – Haulers Collecting Recyclables in Western Region

COUNTIES	HAULERS IDENTIFIED AS COLLECTING RECYCLABLES
Mesa County	Curbside Recycling Indefinitely, Waste Management, Friendly Rod, Monument Waste, Rocky Mountain Sanitation, Commercial Refuse Service, City of Grand Junction
Delta County	Double J Disposal, Rice Recycling
Montrose County	City of Montrose, Double J Disposal, Waste Management, Bruin Waste Management
Gunnison County	Golden Eagle Trash Service, Waste Management, City of Gunnison

Note:

- Recycling is optional with a fee for service throughout the entire region, except City of Montrose, City of Gunnison, and Crested Butte (WM)
- Waste Management hauls in Delta County, but not recyclables

5.4 Western CO – Flow of Recyclables

Information regarding waste flows from the recycling facilities shown in Figure 25 was collected. The facilities listed below are facilities where recyclables are processed. Some of these facilities are involved as haulers.

MESA

- **Curbside Recycling Indefinitely (CRI)**
Grand Junction – Free source-separated (5 categories) drop-site. Sort, bale and sell direct to markets.
- **Waste Management MRF**
Grand Junction – Free dual-stream (fibers separate from other & no glass) drop-off facility. Various haulers use facility. Sort, bale and sell direct to markets. Serves Mesa County, City of Montrose, and north Gunnison County (Crested Butte).

DELTA

- **Double J Disposal**
Austin – Tri-stream (fiber, glass, & other) facility. Double J offers curbside collection in Delta & Montrose counties. Delta County Transfer Station has free public drop site for county residents – processed by Double J. Sort, bale and sell direct to markets.

MONTROSE

- **City of Montrose (Operated by WM)**
Montrose – Free public drop site for single stream (no glass). Various haulers use facility. Curbside collection for City of Montrose residential trash customers with fee embedded in sanitation bill. Loose haul to WM MRF in Grand Junction.
- **Bruin Waste Management**
Naturita – Provide curbside pickup of single stream. Fee for service for residential and commercial customers. Sort, bale and sell direct to markets.

GUNNISON

- **Gunnison County Recycling Center**
Gunnison – Free 24/7 drop-off site for source separated recyclables (many categories, plastics 1&2 only). Weekday attendant. Baled and sold direct to markets. Western State University and various haulers collect and haul to this facility.

Waste flows for haulers were also identified.

- Waste Management collects recyclables in Montrose, Gunnison, and Crested Butte, which are taken to their Grand Junction MRF for processing.

- Recyclables collected in Mesa County are taken to either the CRI MRF, or the WM MRF for processing, with the following exception:
 - Monument Waste Services loose hauls single stream to Bruin Waste Management in Montrose County.
- Recyclables collected in Delta County are either taken to Double J for processing, or they are hauled to Grand Junction WM MRF via City of Montrose facility.
- Recyclables collected in Montrose County are processed at either the Grand Junction WM MRF, or at Bruin Waste Management MRF.

5.5 Western CO – Materials Collected for Recycling

The materials collected and processed by the various recyclers in the region are identified by facility in Table 5 below.

Table 5 – Materials Accepted for Processing at Regional Facilities

	CRI	WM GJ MRF	Double J (Delta Xfer Station)	City of Montrose	Bruin Waste	Gunnison County
Aluminum Cans	X	X	X	X	X	X
Tin/Steel Cans	X	X	X	X	X	X
Plastic 1 & 2	X	X	X	X	X	X
Plastic 3-7	X (#5 only)	X	X (no #3)	X (no #6)	X	
Cardboard/paper board	X	X	X	X	X	X
Newspaper	X	X	X	X	X	X
Mixed Paper	X	X	X	X	X	X
Office Paper	X	X	X	X	X	X
Phone Books	X	X	X	X	X	
Glass Bottles & Jars	X		X		X	X

Other materials collected and recycled at the various landfill facilities are tires, lead acid batteries, used oil, electronics, scrap metal, C&D materials, and Household Hazardous Wastes (HHW). Mesa County Landfill accepts and recycles all those items, except C&D. The Delta County Transfer Station collects lead acid batteries, used oil, scrap metal, and tires. Gunnison County Landfill accepts tires and scrap metal, which are sent off for recycling. They also recycle clean fill and concrete. Montrose County Landfill accepts tires, electronics, and white goods for recycling. There are various options in the area for drop-off of electronics, steel, tires, and scrap metal.

5.6 Western CO – Waste Diversion Ordinances

There is only one ordinance intended to increase waste diversion in the study area.

Town of Crested Butte –

- Plastic Bag Ban - On September 1, 2018 retail and wholesale businesses operating in The Town of Crested Butte are no longer allowed to issue disposable plastic bags, at the point of sale, for the purpose of transporting purchased goods.

6.0 GAP ANALYSIS

A gap analysis was performed to identify what is missing that, if available, would help increase waste diversion in the study area. Gaps are listed by county and are categorized by the following: organics, traditional recycling, structure, and other. Information specific to the counties is followed by an analysis of the region.

6.1 Gaps in Mesa County

There are several gaps in waste diversion infrastructure that, if addressed, would help increase waste diversion in Mesa County. The gaps are as follows:

Organics –

- ▶ No option for food waste
- ▶ No pick-up of yard waste
- ▶ Biosolids no longer composted – WWTP
- ▶ Compost program “not well known” (significant interest noted)

Traditional Recycling –

- ▶ Multi-family units (MFU) largely without recycling
- ▶ Low Participation
- ▶ ~20% of WM’s Mesa County customers (residential & comm.) have recycling
- ▶ Contamination an issue, but manageable
- ▶ Many survey comments that residents don’t know recycling is an option
- ▶ Need local markets for recyclables

Structure –

- ▶ No ordinances to help boost rates of recycling
- ▶ Recycling seen as partisan issue
- ▶ Education in schools, but not elsewhere – need to engage community
- ▶ Low landfill fees - \$31/ton
- ▶ No incentive to recycle – landfilling cheap and recycling optional

Other –

- ▶ No options to recycle C&D (lumber, gypsum & shingles), mattresses & carpet
- ▶ Event waste diversion – more planning, coordination & education needed (at parks and stadiums)
- ▶ Tires landfilled as daily cover

6.2 Gaps in Delta County

To achieve increased waste diversion in Delta County, several items should be addressed. The gaps are as follows:

Organics –

- ▶ No option to commercially compost food or yard waste

Traditional Recycling –

- ▶ Low Participation – little interest
- ▶ Education needed
- ▶ No curbside options in rural areas
- ▶ Very little curbside recycling

Structure –

- ▶ No ordinances to help boost rates of recycling
- ▶ Need to engage community
- ▶ Low landfill fees (\$40/ton)

Other –

- ▶ No options to recycle C&D
- ▶ No mattress recycling

6.3 Gaps in Montrose County

Several gaps were noted in Montrose County. The gaps are as follows:

Organics –

- ▶ Little options to commercially compost food or yard waste (Crested Butte only)

Traditional Recycling –

- ▶ Low Participation
- ▶ 8% recycled vs. landfilled (WM data)
- ▶ Education needed
- ▶ No curbside options in rural areas
- ▶ MFU recycling not offered

Structure –

- ▶ No ordinances to help boost rates of recycling (except City of CB bag ban)
- ▶ Need to engage community
- ▶ Low landfill fees (\$49 - \$52/ ton)

Other –

- ▶ No options to recycle C&D
- ▶ No mattress recycling
- ▶ Asphalt shingle recycling option needed

6.4 Gaps in Gunnison County

Several gaps were noted in Gunnison County. The gaps are as follows:

Organics –

- ▶ No option to commercially compost food waste

Traditional Recycling –

- ▶ Low recycling rate – 5-8% (County and WM)
- ▶ Plastics 3-7 not recycled at County Recycling Center (no markets currently)
- ▶ No curbside options in rural areas
- ▶ MFU recycling not offered

Structure –

- ▶ No ordinances to help boost rates of recycling
- ▶ Low landfill fees (\$49 - \$67/ ton)

Other –

- ▶ No mattress recycling

6.5 Gaps in the Region (Western CO)

To achieve increased waste diversion in the region, several items will need addressing. The gaps are as follows:

Organics –

1. Food and yard waste were identified as the largest combined components of MSW in all counties. The only facility accepting food waste is Guerilla Composting in Crested Butte. There are opportunities for composting and/or anaerobic digestion throughout the region.
2. Food recovery should be encouraged as a component of addressing food waste issues.
3. Markets would need to be considered for any new compost facility, although all compost facilities in the region seem to have no trouble selling and/or giving away their compost.

Traditional Recycling –

4. Cardboard is largely landfilled across the region. There is an opportunity to collect and recycle more cardboard from residential and commercial customers.
5. Most multi-family units (MFUs) in the region lack access to recycling. Note that MFUs are considered commercial and present unique challenges, such as limited space for receptacles, indirect lines of communication, and collection challenges.
6. Transparency is needed regarding the fate of all recyclables, although this region reports that most of what is collected is being recycled.
7. Throughout the region there is concern about funding recycling. Recycling costs money. The pervasive marketing of “free recycling” is problematic because it causes the public to think that it is a free service, when in fact it is not. The public must understand that recycling requires funding.
8. Contamination of recyclables is an issue, but it seems to be less of an issue in this region, likely due to various forms of source separation that are required throughout the region. There is little single-stream.
9. There are no known local markets for traditional recyclables.

Structure –

10. Throughout the region, there are few mechanisms in place to coordinate waste diversion with landfills, haulers, and citizens. Most of the entities work in isolation and rarely coordinate waste diversion efforts with others.
11. Consensus is needed for consistent messaging and education.
12. Data is not collected for most of the region.
13. Given the costs, contamination challenges, and lack of local markets for traditional recycling, it is important that reduce and reuse are emphasized.
14. There is no regional task force dedicated to addressing solid waste and recycling in this area.
15. Textiles and mattresses are largely being landfilled in the region.

Other –

16. C&D is largely ending up in landfills where it takes up more valuable airspace than other landfilled wastes. This material could be diverted for reuse instead.
17. No partnerships currently exist in the region for handling tires.
18. No coordination of electronics transportation is occurring in the region.

7.0 ACTIONABLE TASKS

After discussing the gaps for each county and the region, the group identified what actions were currently in process to address the gaps, and what tasks stakeholders were willing to commit to addressing. A summary of the tasks underway and those that stakeholders committed to tackle are listed below. Also provided are recommendations for the group going forward.

7.1 Tasks Currently in Process

1. Gunnison County started collecting data regarding mattress disposal at the landfill.
2. SMA arranged for all four counties to meet with Christopher Conway of Spring Back to discuss mattress and box spring recycling in the region. That meeting occurred on March 13, 2018.
3. Stakeholders were asked to form a western regional Recycle CO task force. Industry representatives from each of the four counties, along with several citizens, expressed interest. SMA is planning to send their contact information to Recycle CO.
4. Mesa County Landfill's Jennifer Richardson is working on a public outreach project with American Music Concepts (also known as Jingle Jim) to create a recycling "jingle" that could be used on radio and TV. Mesa County offered for other counties in the region to use it too.
5. Mesa County Landfill's Jennifer Richardson met with Laura Tyler on March 7, 2018 regarding twine recycling in the region. A pilot program is starting at the Mesa County Fairgrounds. Montrose County expressed interest as well.

7.2 Tasks Planned

During the final meeting of the study one stakeholder volunteered to take on the following task:

1. The stakeholder group is planning to meet semi-annually going forward to continue discussing ways to increase waste diversion in the region. Mesa County Landfill's Jennifer Richardson volunteered to arrange the meetings.
2. Mesa County's Jennifer Richardson is planning to talk to the local Solid Waste Association of America (SWANA) chapter to request compost training during the next conference.
3. Mesa County's Jennifer Richardson is planning a commercial to educate on recycling that will be aired locally and is looking for sponsors who would like to be mentioned.

7.3 Recommendations

1. Stakeholders should review the regional waste audit data provided in this report and consider programs to target the items that are taking up valuable landfill space and have value elsewhere, such as food and green waste. Organics are a nutrient-rich resource that should be used locally to enhance local agriculture and gardens, or produce energy through anaerobic digestion, rather than put in landfills where it contributes to greenhouse gas production and provides no benefit.
2. Cardboard and paperboard collection should be targeted across the region. This is typically one of the most valuable commodities, and it should not be going to landfills. At Mesa County Landfill many truckloads of nothing but cardboard were observed dumping at the working face.

3. Textiles (primarily clothing) going to the landfill was noticeably high throughout the region. There are several services that collect textiles. One option that is used by landfills in rural CO is USAgain. Landfills that use this service report that it works great and requires little to no effort for the landfill.
4. The region might want to consider a local market for crushed glass.
5. The CDPHE Integrated Solid Waste Materials Management Plan (ISWMMP) provides recommendations that should be considered by this region. Table 6-7 of the plan provides options, along with a recommendation that the Western Slope implement four of them, while Table 6-8 provides options for a more prescriptive approach to recycling. The ISWMMP can be found online at <https://environmentalrecords.colorado.gov/HPRMWebDrawerHM/RecordView/410058>
6. RREO funding is available through CDPHE to help fund projects going forward. Entities should mention participation in this study in any applications for RREO funding, as it may help with their application.

8.0 CONCLUSION

This region is unique in that the recycling that is occurring is working well, likely because almost all the recycling occurring in the region is elective and fee for service. Another component of this region is that contamination is less of an issue because waste is mostly source separated and there is little single-stream. The infrastructure for recycling is mostly available and is positioned to grow as the demand for recycling grows. The demand for recycling was identified by solid waste professionals as the primary limit to growth, as recycling is not valued in the region as much as it is in other CO communities. As such, education could be an effective strategy for growing waste diversion in Western CO. The opportunities for this group are many and their biggest asset is the stakeholders who care about this effort. As this process moves forward, it will be exciting to see what Western CO can accomplish.

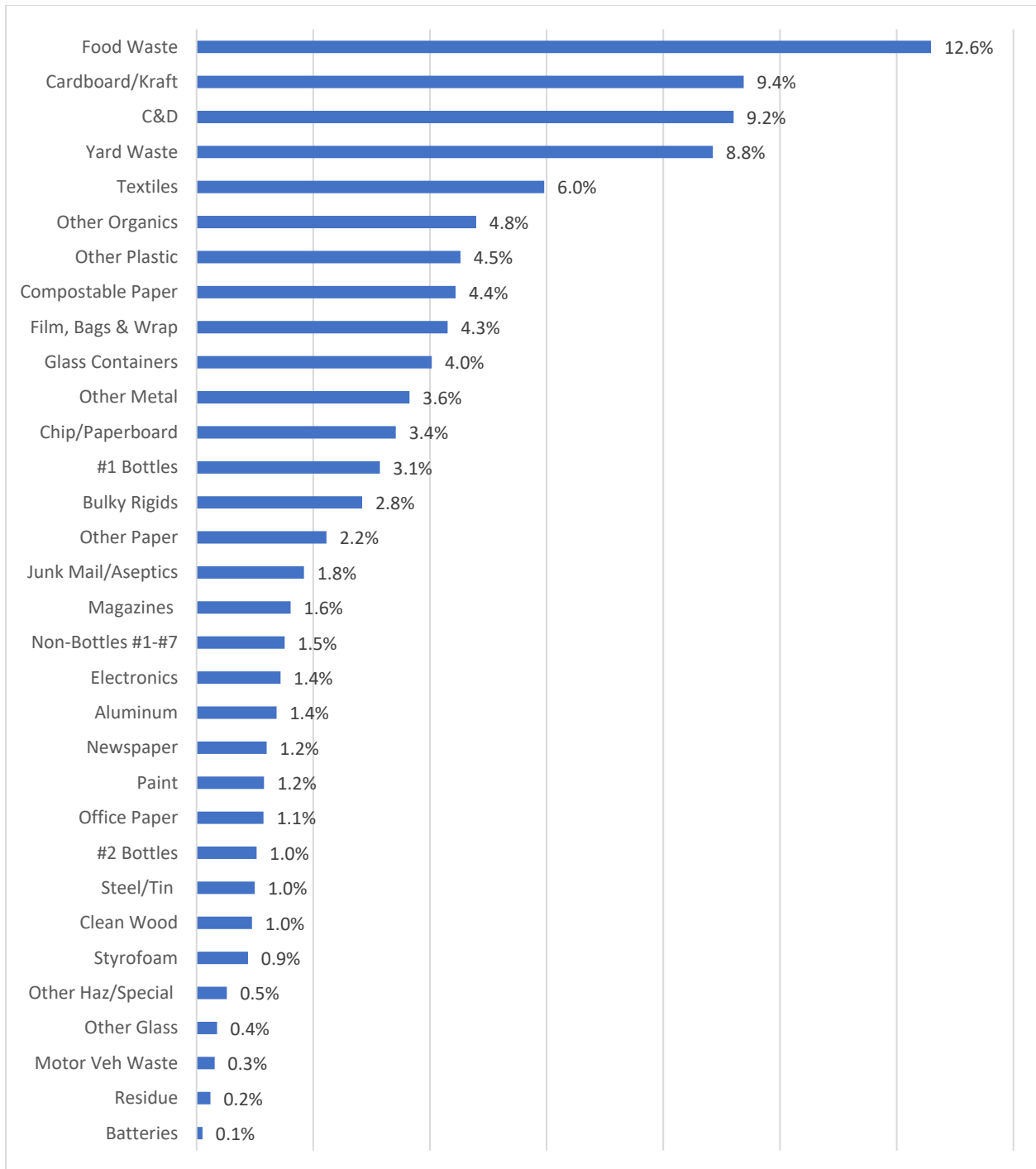
APPENDIX A

2018 WASTE AUDIT DETAILS

MESA COUNTY 2018 WASTE AUDIT (JUNE & SEPT. COMBINED)

MATERIAL	WEIGHTED AVERAGE	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
			Lower	Upper
Glass Containers	4.0%	3.3%	3.2%	4.8%
Other Glass	0.4%	0.6%	0.2%	0.5%
Total Glass	4.4%			
Aluminum	1.4%	0.8%	1.2%	1.6%
Steel/Tin	1.0%	0.8%	0.8%	1.2%
Other Metal	3.6%	5.1%	2.4%	4.9%
Total Metals	6.0%			
#1 Bottles	3.1%	2.2%	2.6%	3.7%
#2 Bottles	1.0%	0.7%	0.9%	1.2%
Non-Bottles #1-#7	1.5%	0.9%	1.3%	1.7%
Bulky Rigids	2.8%	3.6%	1.9%	3.7%
Film, Bags & Wrap	4.3%	2.0%	3.8%	4.8%
Styrofoam	0.9%	0.6%	0.7%	1.0%
Other Plastic	4.5%	3.5%	3.6%	5.4%
Total Plastics	18.2%			
Cardboard/Kraft	9.4%	8.7%	7.2%	11.5%
Newspaper	1.2%	1.6%	0.8%	1.6%
Office Paper	1.1%	1.8%	0.7%	1.6%
Chip/Paperboard	3.4%	2.0%	2.9%	3.9%
Junk Mail/Aseptics	1.8%	1.3%	1.5%	2.2%
Compostable Paper	4.4%	2.6%	3.8%	5.1%
Magazines	1.6%	1.9%	1.1%	2.1%
Other Paper	2.2%	4.3%	1.2%	3.3%
Total Paper	25.3%			
Food Waste	12.6%	6.3%	11.0%	14.1%
Yard Waste	8.8%	9.9%	6.4%	11.3%
Clean Wood	1.0%	2.9%	0.2%	1.7%
Other Organics	4.8%	4.7%	3.6%	6.0%
Total Organics	27.2%			
Textiles	6.0%	5.1%	4.7%	7.2%
Electronics	1.4%	3.0%	0.7%	2.2%
Batteries	0.1%	0.2%	0.1%	0.1%
Paint	1.2%	5.1%	-0.1%	2.4%
Motor Veh Waste	0.3%	1.0%	0.1%	0.6%
C&D	9.2%	10.1%	6.7%	11.7%
Other Haz/Special	0.5%	1.4%	0.2%	0.9%
Total Haz/Special	18.7%			
Residue	0.2%	0.5%	0.1%	0.4%
	100.0%			

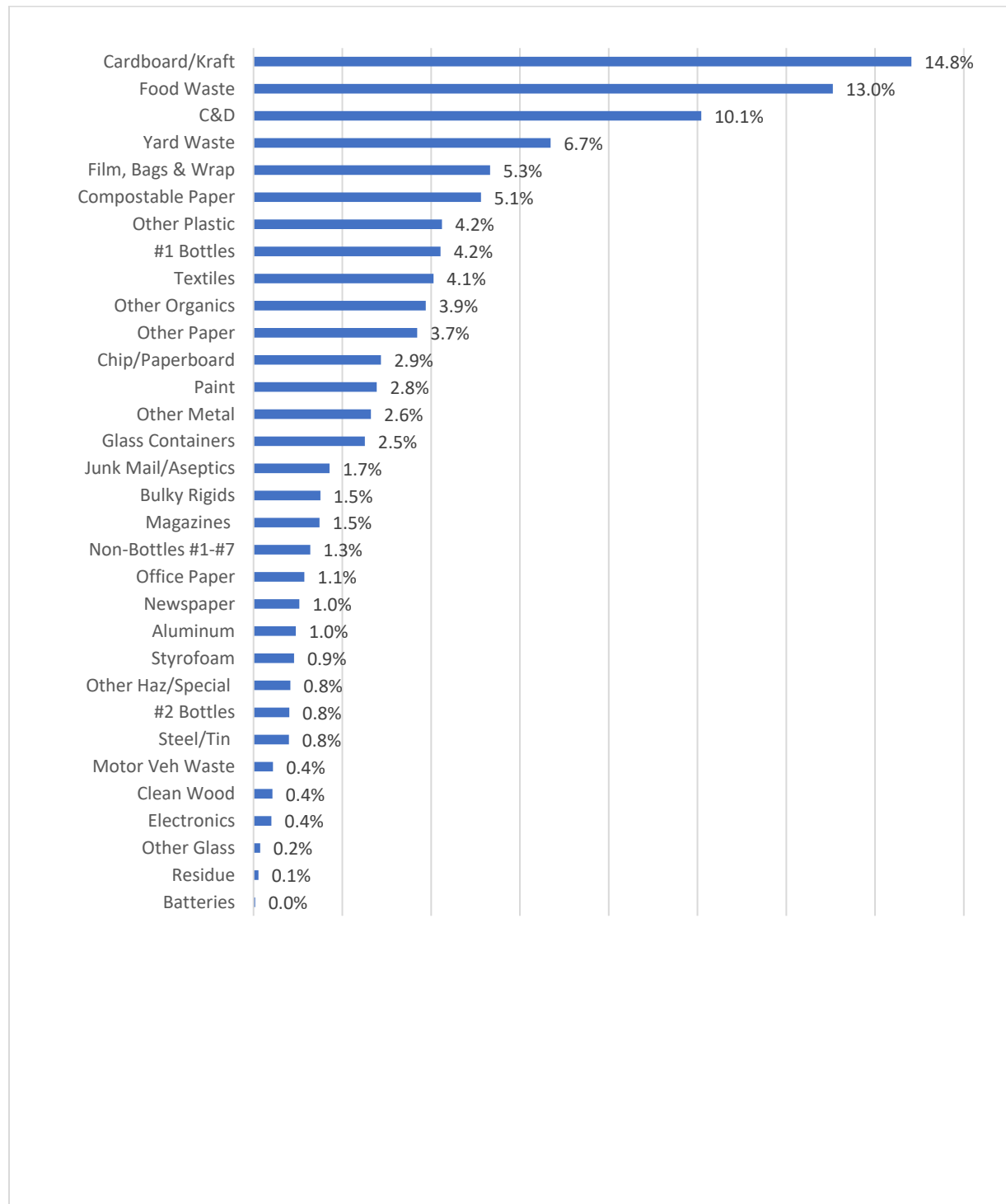
MESA COUNTY 2018 WASTE AUDIT (JUNE & SEPT. COMBINED)



MESA COUNTY 2018 WASTE AUDIT- COMMERCIAL

MATERIAL	WEIGHTED AVERAGE	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
			Lower	Upper
Glass Containers	2.5%	2.2%	1.5%	3.5%
Other Glass	0.2%	0.2%	0.0%	0.3%
<i>Total Glass</i>	2.7%			
Aluminum	1.0%	0.5%	0.7%	1.2%
Steel/Tin	0.8%	1.0%	0.3%	1.2%
Other Metal	2.6%	3.6%	1.0%	4.3%
<i>Total Metals</i>	4.4%			
#1 Bottles	4.2%	3.0%	2.8%	5.6%
#2 Bottles	0.8%	0.6%	0.5%	1.1%
Non-Bottles #1-#7	1.3%	0.7%	0.9%	1.6%
Bulky Rigids	1.5%	1.4%	0.9%	2.1%
Film, Bags & Wrap	5.3%	2.1%	4.4%	6.3%
Styrofoam	0.9%	0.9%	0.5%	1.3%
Other Plastic	4.2%	3.3%	2.8%	5.7%
<i>Total Plastics</i>	18.3%			
Cardboard/Kraft	14.8%	10.7%	10.0%	19.7%
Newspaper	1.0%	2.0%	0.1%	1.9%
Office Paper	1.1%	1.5%	0.5%	1.8%
Chip/Paperboard	2.9%	1.6%	2.1%	3.6%
Junk Mail/Aseptics	1.7%	1.4%	1.1%	2.3%
Compostable Paper	5.1%	3.3%	3.6%	6.6%
Magazines	1.5%	2.1%	0.5%	2.4%
Other Paper	3.7%	7.1%	0.4%	6.9%
<i>Total Paper</i>	31.9%			
Food Waste	13.0%	8.2%	9.3%	16.8%
Yard Waste	6.7%	12.6%	1.0%	12.4%
Clean Wood	0.4%	1.2%	-0.1%	1.0%
Other Organics	3.9%	5.0%	1.6%	6.1%
<i>Total Organics</i>	24.0%			
Textiles	4.1%	4.3%	2.1%	6.0%
Electronics	0.4%	1.3%	-0.2%	1.0%
Batteries	0.0%	0.1%	0.0%	0.1%
Paint	2.8%	8.7%	-1.2%	6.7%
Motor Veh Waste	0.4%	0.8%	0.1%	0.8%
C&D	10.1%	12.5%	4.4%	15.8%
Other Haz/Special	0.8%	2.5%	-0.3%	1.9%
<i>Total Haz/Special</i>	18.6%			
<i>Residue</i>	0.1%	0.3%	0.0%	0.3%
	100.0%			

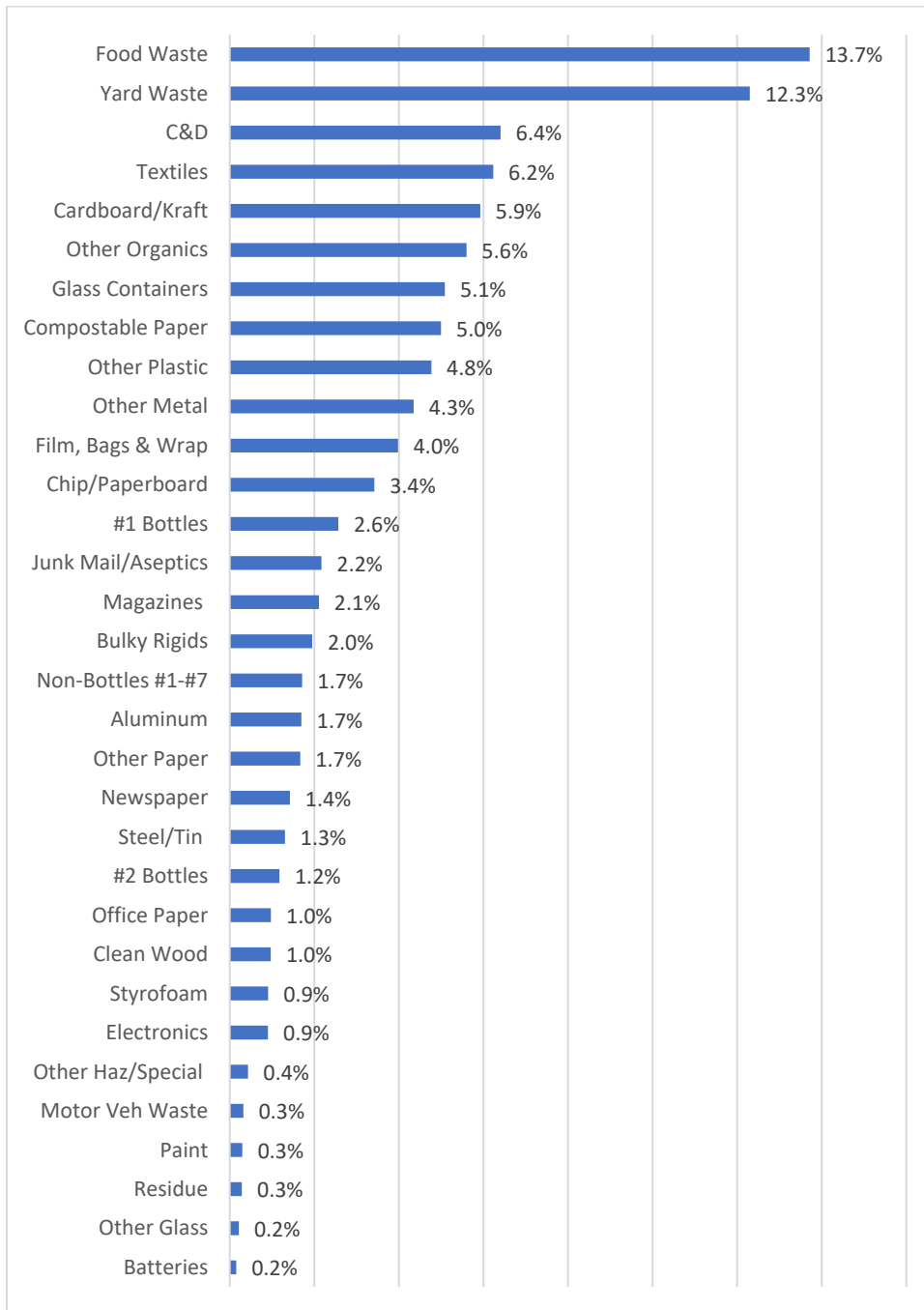
MESA COUNTY 2018 WASTE AUDIT- COMMERCIAL



MESA COUNTY 2018 WASTE AUDIT- RESIDENTIAL

MATERIAL	WEIGHTED AVERAGE	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
			Lower	Upper
Glass Containers	5.1%	3.5%	3.8%	6.4%
Other Glass	0.2%	0.4%	0.1%	0.4%
Total Glass	5.3%			
Aluminum	1.7%	0.8%	1.4%	2.0%
Steel/Tin	1.3%	0.6%	1.1%	1.5%
Other Metal	4.3%	6.3%	2.0%	6.7%
Total Metals	7.3%			
#1 Bottles	2.6%	1.1%	2.2%	3.0%
#2 Bottles	1.2%	0.6%	1.0%	1.4%
Non-Bottles #1-#7	1.7%	1.0%	1.4%	2.1%
Bulky Rigids	2.0%	1.7%	1.3%	2.6%
Film, Bags & Wrap	4.0%	0.8%	3.7%	4.3%
Styrofoam	0.9%	0.5%	0.7%	1.1%
Other Plastic	4.8%	3.8%	3.3%	6.2%
Total Plastics	17.1%			
Cardboard/Kraft	5.9%	3.6%	4.6%	7.3%
Newspaper	1.4%	1.6%	0.8%	2.0%
Office Paper	1.0%	1.8%	0.3%	1.7%
Chip/Paperboard	3.4%	1.4%	2.9%	4.0%
Junk Mail/Aseptics	2.2%	1.3%	1.7%	2.7%
Compostable Paper	5.0%	1.8%	4.3%	5.7%
Magazines	2.1%	2.0%	1.4%	2.9%
Other Paper	1.7%	1.4%	1.2%	2.2%
Total Paper	22.7%			
Food Waste	13.7%	4.7%	12.0%	15.5%
Yard Waste	12.3%	8.3%	9.2%	15.4%
Clean Wood	1.0%	2.8%	-0.1%	2.0%
Other Organics	5.6%	4.8%	3.8%	7.4%
Total Organics	32.6%			
Textiles	6.2%	4.8%	4.4%	8.1%
Electronics	0.9%	1.5%	0.3%	1.5%
Batteries	0.2%	0.2%	0.1%	0.2%
Paint	0.3%	1.2%	-0.1%	0.7%
Motor Veh Waste	0.3%	1.3%	-0.2%	0.8%
C&D	6.4%	6.9%	3.8%	9.0%
Other Haz/Special	0.4%	0.6%	0.2%	0.7%
Total Haz/Special	14.7%			
Residue	0.3%	0.6%	0.0%	0.5%

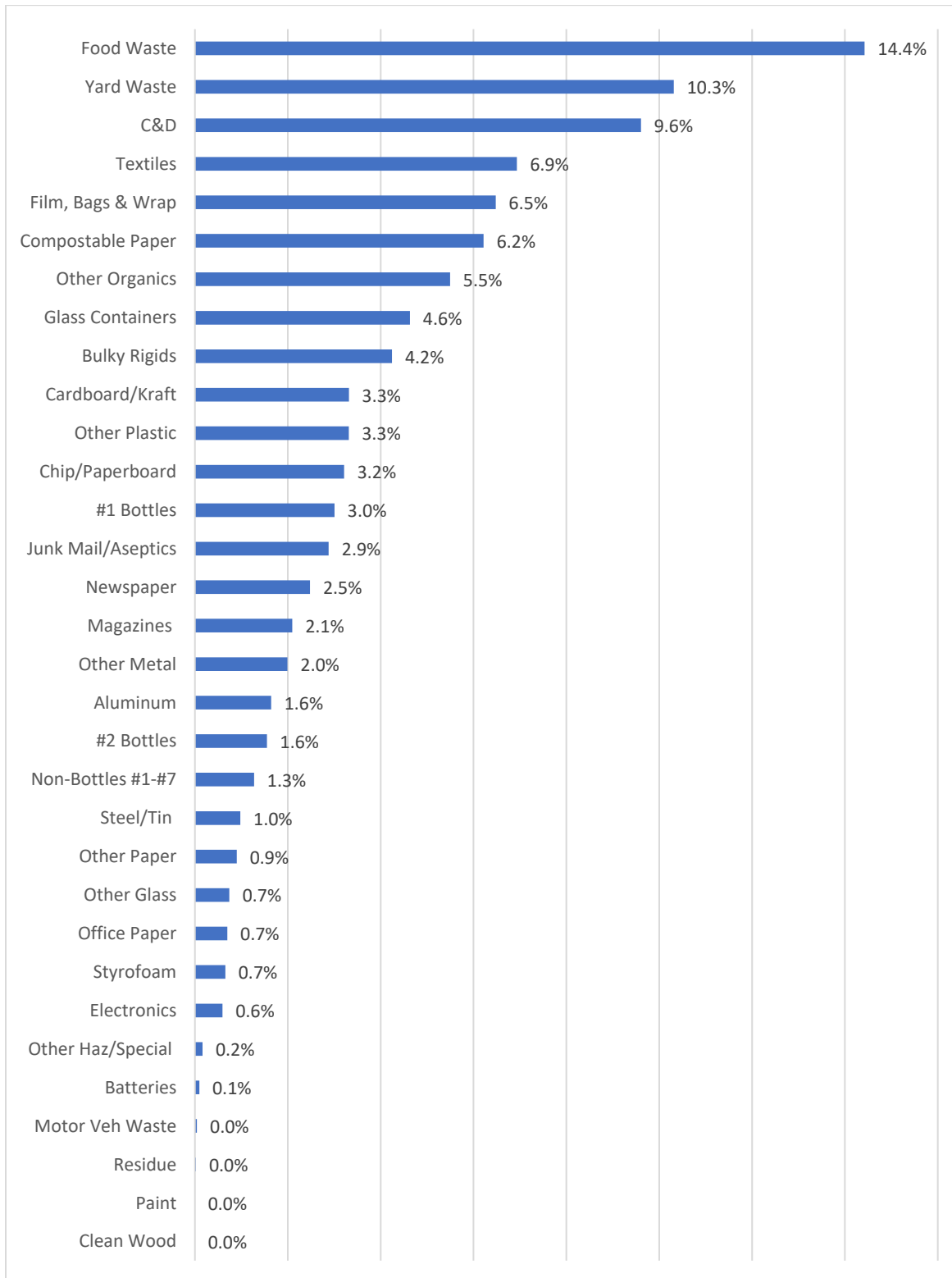
MESA COUNTY 2018 WASTE AUDIT- RESIDENTIAL



DELTA COUNTY 2018 WASTE AUDIT

MATERIAL	WEIGHTED AVERAGE	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
			Lower	Upper
Glass Containers	4.6%	2.2%	2.6%	6.7%
Other Glass	0.7%	0.8%	0.0%	1.5%
<i>Total Glass</i>	5.4%			
Aluminum	1.6%	0.5%	1.2%	2.1%
Steel/Tin	1.0%	0.7%	0.3%	1.6%
Other Metal	2.0%	1.6%	0.5%	3.5%
<i>Total Metals</i>	4.6%			
#1 Bottles	3.0%	0.5%	2.5%	3.5%
#2 Bottles	1.6%	0.9%	0.7%	2.4%
Non-Bottles #1-#7	1.3%	0.2%	1.1%	1.4%
Bulky Rigids	4.2%	1.3%	3.0%	5.5%
Film, Bags & Wrap	6.5%	2.1%	4.4%	8.5%
Styrofoam	0.7%	0.3%	0.4%	0.9%
Other Plastic	3.3%	0.8%	2.5%	4.1%
<i>Total Plastics</i>	20.5%			
Cardboard/Kraft	3.3%	1.2%	2.2%	4.4%
Newspaper	2.5%	1.9%	0.7%	4.3%
Office Paper	0.7%	0.9%	-0.2%	1.6%
Chip/Paperboard	3.2%	1.2%	2.1%	4.3%
Junk Mail/Aseptics	2.9%	1.5%	1.4%	4.3%
Compostable Paper	6.2%	2.7%	3.7%	8.8%
Magazines	2.1%	1.3%	0.9%	3.3%
Other Paper	0.9%	0.7%	0.2%	1.6%
<i>Total Paper</i>	21.8%			
Food Waste	14.4%	5.5%	9.2%	19.7%
Yard Waste	10.3%	6.9%	3.8%	16.9%
Clean Wood	0.0%	0.0%	0.0%	0.0%
Other Organics	5.5%	2.4%	3.2%	7.8%
<i>Total Organics</i>	30.2%			
Textiles	6.9%	2.5%	4.5%	9.3%
Electronics	0.6%	0.6%	0.0%	1.2%
Batteries	0.1%	0.1%	0.0%	0.2%
Paint	0.0%	0.0%	0.0%	0.0%
Motor Veh Waste	0.0%	0.1%	0.0%	0.1%
C&D	9.6%	8.8%	1.3%	18.0%
Other Haz/Special	0.2%	0.2%	0.0%	0.3%
<i>Total Haz/Special</i>	17.4%			
<i>Residue</i>	0.0%	0.0%	0.0%	0.1%
	100.0%			

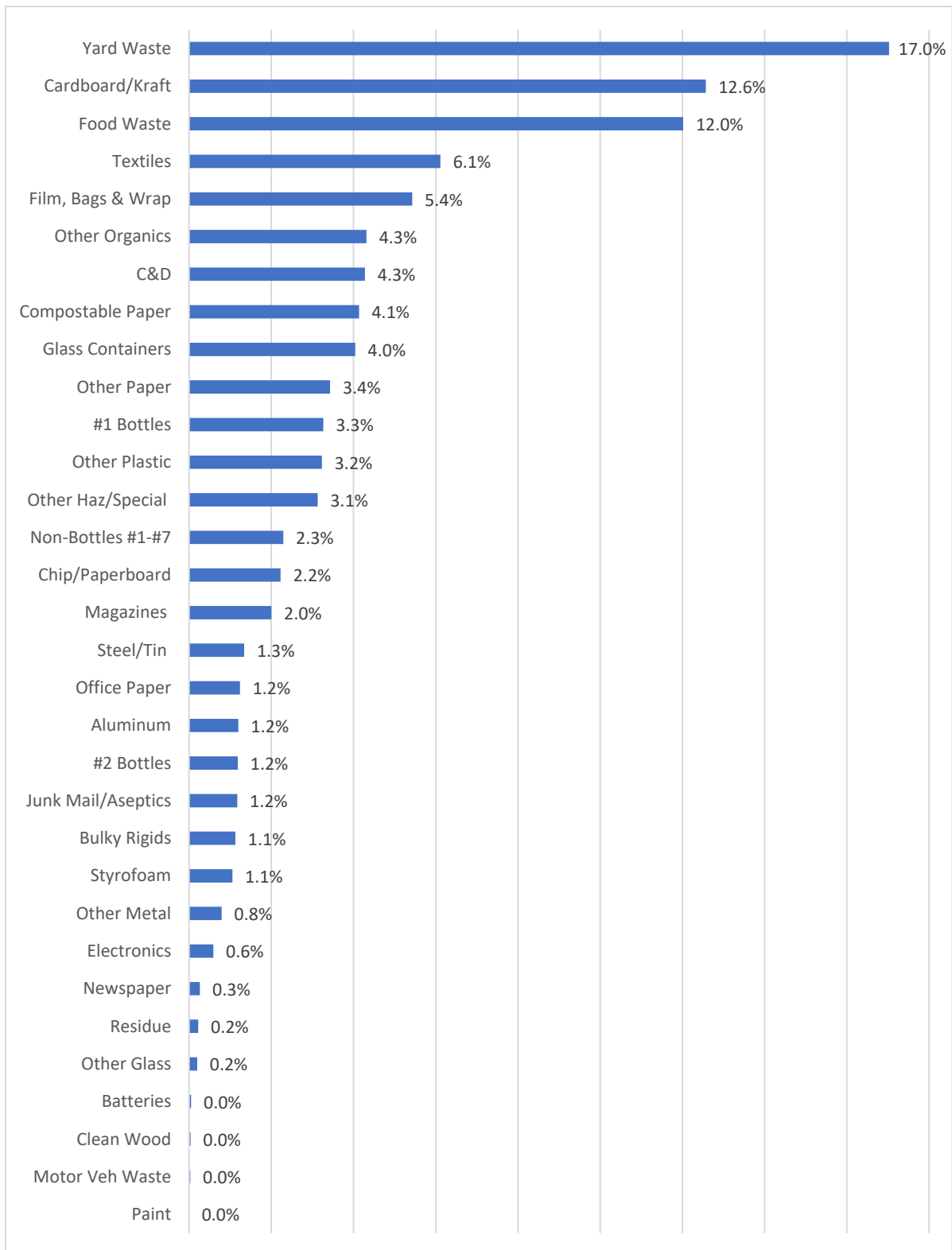
DELTA COUNTY 2018 WASTE AUDIT



MONTROSE COUNTY 2018 WASTE AUDIT

MATERIAL	WEIGHTED AVERAGE	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
			Lower	Upper
Glass Containers	4.0%	3.2%	1.0%	7.1%
Other Glass	0.2%	0.3%	-0.1%	0.5%
<i>Total Glass</i>	4.2%			
Aluminum	1.2%	0.7%	0.5%	1.9%
Steel/Tin	1.3%	0.9%	0.5%	2.2%
Other Metal	0.8%	0.8%	0.0%	1.6%
<i>Total Metals</i>	3.3%			
#1 Bottles	3.3%	1.9%	1.4%	5.1%
#2 Bottles	1.2%	0.9%	0.3%	2.0%
Non-Bottles #1-#7	2.3%	2.1%	0.3%	4.3%
Bulky Rigids	1.1%	1.8%	-0.6%	2.9%
Film, Bags & Wrap	5.4%	1.9%	3.6%	7.2%
Styrofoam	1.1%	0.7%	0.4%	1.7%
Other Plastic	3.2%	0.9%	2.3%	4.1%
<i>Total Plastics</i>	17.6%			
Cardboard/Kraft	12.6%	9.3%	3.7%	21.4%
Newspaper	0.3%	0.4%	-0.1%	0.7%
Office Paper	1.2%	1.4%	-0.1%	2.6%
Chip/Paperboard	2.2%	1.1%	1.2%	3.2%
Junk Mail/Aseptics	1.2%	1.0%	0.3%	2.1%
Compostable Paper	4.1%	0.8%	3.4%	4.9%
Magazines	2.0%	1.8%	0.3%	3.7%
Other Paper	3.4%	2.1%	1.5%	5.4%
<i>Total Paper</i>	27.0%			
Food Waste	12.0%	8.5%	3.9%	20.1%
Yard Waste	17.0%	8.5%	8.9%	25.2%
Clean Wood	0.0%	0.1%	0.0%	0.1%
Other Organics	4.3%	4.8%	-0.3%	8.9%
<i>Total Organics</i>	33.4%			
Textiles	6.1%	6.9%	-0.5%	12.7%
Electronics	0.6%	0.5%	0.2%	1.0%
Batteries	0.0%	0.0%	0.0%	0.1%
Paint	0.0%	0.0%	0.0%	0.0%
Motor Veh Waste	0.0%	0.0%	0.0%	0.1%
C&D	4.3%	3.2%	1.2%	7.3%
Other Haz/Special	3.1%	7.5%	-4.0%	10.3%
<i>Total Haz/Special</i>	14.2%			
<i>Residue</i>	0.2%	0.2%	0.0%	0.4%
	100.0%			

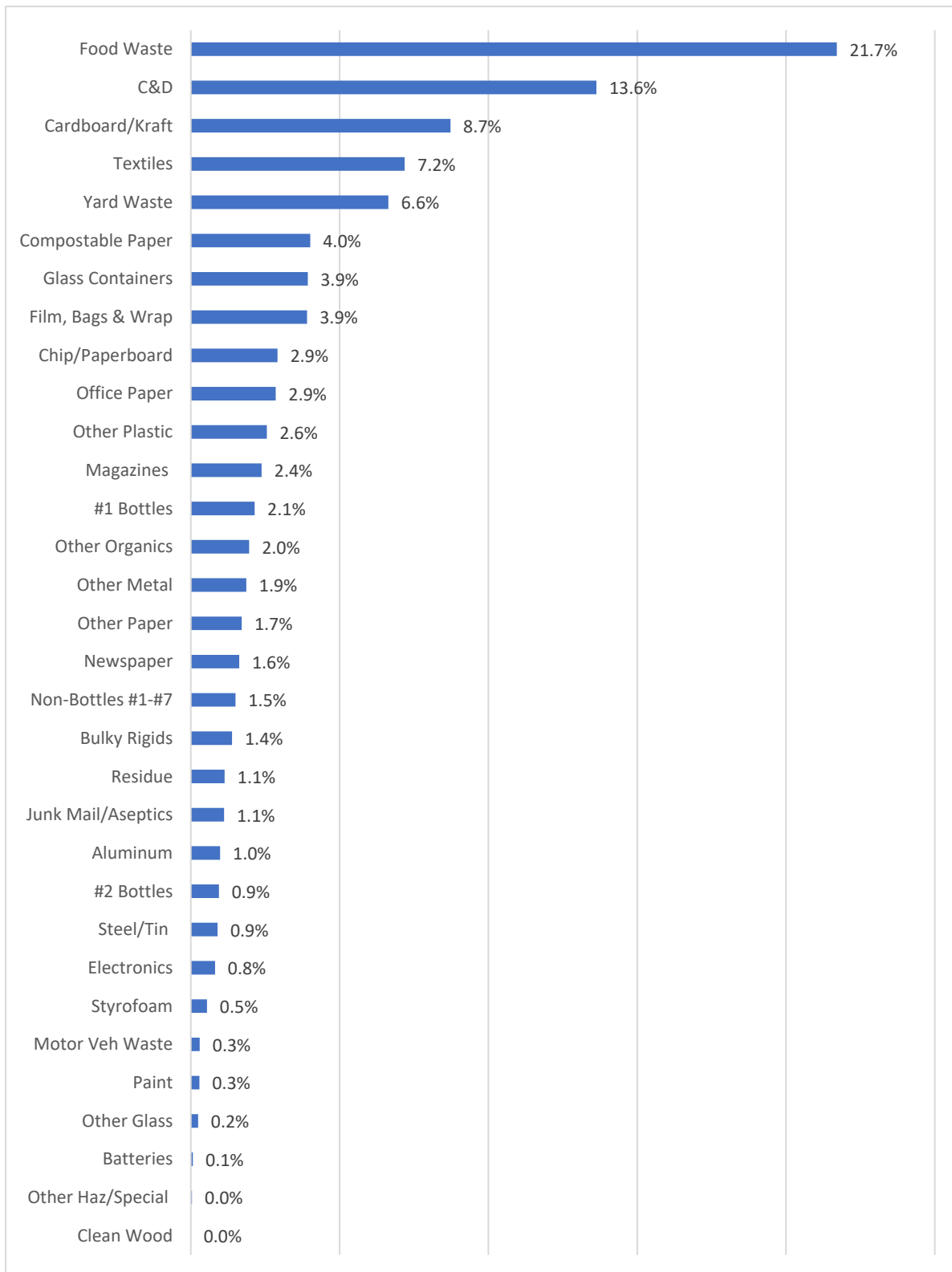
MONTROSE COUNTY 2018 WASTE AUDIT



GUNNISON COUNTY 2018 WASTE AUDIT

MATERIAL	WEIGHTED AVERAGE	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
			Lower	Upper
Glass Containers	3.9%	2.1%	1.9%	5.9%
Other Glass	0.2%	0.5%	-0.2%	0.7%
<i>Total Glass</i>	4.2%			
Aluminum	1.0%	0.7%	0.3%	1.7%
Steel/Tin	0.9%	0.6%	0.4%	1.4%
Other Metal	1.9%	2.5%	-0.6%	4.3%
<i>Total Metals</i>	3.7%			
#1 Bottles	2.1%	0.7%	1.4%	2.9%
#2 Bottles	0.9%	0.3%	0.6%	1.2%
Non-Bottles #1-#7	1.5%	1.2%	0.4%	2.6%
Bulky Rigids	1.4%	1.3%	0.2%	2.6%
Film, Bags & Wrap	3.9%	1.7%	2.3%	5.5%
Styrofoam	0.5%	0.6%	0.0%	1.1%
Other Plastic	2.6%	1.1%	1.5%	3.6%
<i>Total Plastics</i>	13.0%			
Cardboard/Kraft	8.7%	8.5%	0.6%	16.8%
Newspaper	1.6%	1.2%	0.5%	2.7%
Office Paper	2.9%	3.6%	-0.6%	6.3%
Chip/Paperboard	2.9%	1.3%	1.7%	4.1%
Junk Mail/Aseptics	1.1%	0.6%	0.5%	1.7%
Compostable Paper	4.0%	4.2%	0.0%	8.0%
Magazines	2.4%	2.3%	0.2%	4.5%
Other Paper	1.7%	1.4%	0.4%	3.1%
<i>Total Paper</i>	25.3%			
Food Waste	21.7%	8.3%	13.8%	29.6%
Yard Waste	6.6%	5.6%	1.3%	12.0%
Clean Wood	0.0%	0.0%	0.0%	0.0%
Other Organics	2.0%	1.7%	0.3%	3.6%
<i>Total Organics</i>	30.3%			
Textiles	7.2%	7.2%	0.3%	14.1%
Electronics	0.8%	0.9%	-0.1%	1.7%
Batteries	0.1%	0.1%	0.0%	0.2%
Paint	0.3%	0.6%	-0.3%	0.9%
Motor Veh Waste	0.3%	0.6%	-0.3%	0.9%
C&D	13.6%	12.4%	1.8%	25.4%
Other Haz/Special	0.0%	0.1%	0.0%	0.1%
<i>Total Haz/Special</i>	22.3%			
<i>Residue</i>	1.1%	2.3%	-1.1%	3.4%
	100.0%			

GUNNISON COUNTY 2018 WASTE AUDIT



APPENDIX B

CDPHE RURAL COLORADO
WASTE AUDIT DATA



2018

Waste Composition of Municipal Solid Waste Disposal

MATERIAL	Rural County Avg.	Urban County Avg.	Colorado State Avg.	National Avg.
Glass Containers	3.7%	2.9%	3.5%	
Other Glass	0.8%	0.1%	0.7%	
Total Glass	4.5%	3.0%	4.2%	5.1%
Aluminum	1.0%	1.0%	1.0%	
Steel/Tin	1.3%	1.0%	1.2%	
Other Metal	2.5%	2.4%	2.5%	
Total Metals	4.8%	4.3%	4.7%	9.5%
#1 Bottles	1.9%	1.2%	1.7%	
#2 Bottles	1.5%	1.1%	1.4%	
Rigid #3-#7	1.3%	0.8%	1.1%	
Film, Bags & Wrap	3.4%	4.2%	3.5%	
Other Plastic	5.8%	4.1%	5.4%	
Total Plastics	13.8%	11.4%	13.2%	18.9%
Cardboard/Kraft	6.6%	6.2%	6.5%	
Newspaper	1.2%	2.2%	1.4%	
Office Paper	1.6%	1.4%	1.6%	
Chip/Paperboard	2.8%	1.6%	2.5%	
Junk Mail/Aseptics	1.5%	1.6%	1.5%	
Magazines	1.6%	1.2%	1.6%	
Other Paper	3.9%	5.7%	4.3%	
Total Paper	19.3%	19.1%	19.2%	13.3%
Food Waste	19.9%	12.5%	18.2%	22.0%
Yard Waste	10.1%	11.8%	10.5%	7.8%
Clean Wood	0.7%	1.6%	0.9%	8.0%
Other Organics	7.5%	7.9%	7.6%	
Total Organics	38.1%	33.8%	37.1%	37.8%
Textiles	5.8%	4.2%	5.4%	7.6%
Electronics	1.0%	2.2%	1.3%	
Batteries	0.3%	0.1%	0.2%	
Paint	0.0%	0.0%	0.0%	
Motor Veh Waste	1.0%	0.4%	0.8%	
C&D (non-industrial)	8.6%	8.4%	8.6%	
Other HHW/Special	2.1%	0.4%	1.7%	
Total Other	18.1%	15.6%	17.5%	10.9%
Waste/Residue	1.5%	13.3%	4.2%	4.5%
Recyclable			32.4%	46.8%
Compostable			37.1%	37.8%
Recoverable			26.4%	10.9%
Waste			4.2%	4.5%

For more information about regional studies funded by CDPHE, please visit the [RREO Program webpage](#)

APPENDIX C

STAKEHOLDER MEETING DOCUMENTATION



MESA COUNTY

Regional Waste Diversion Study

STAKEHOLDER MEETING
May 29, 2018, Grand Junction, Colorado



1

STUDY TEAM

Barrett Jensen

- ▶ Director - Mesa County Solid Waste

Jennifer Richardson

- ▶ Operations Manager - Mesa County Solid Waste

Winn Cowman

- ▶ Project Lead - Souder, Miller & Associates

Graham Cottle

- ▶ Project Assistant - Souder, Miller & Associates



2

PROJECT FUNDING

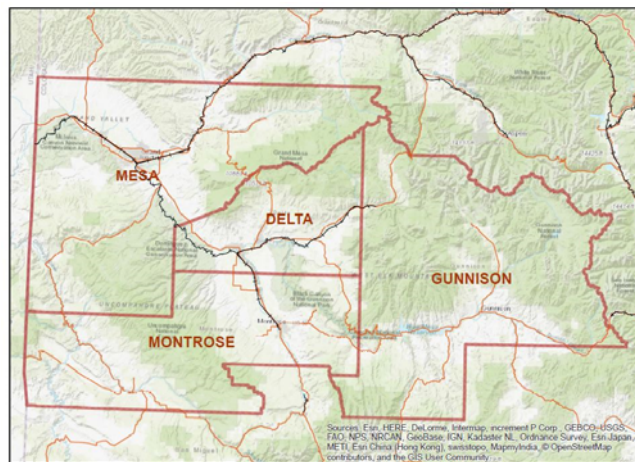


About the RREO Grant Program

Colorado's Recycling Resources Economic Opportunity Act (HB 07-1288) created the RREO Grant Program with the intent to fund implementation projects that promote economic development through the productive management of recyclable materials that would otherwise be treated as discards. Projects that meet this goal are designed to implement recycling, composting, anaerobic digestion, source reduction, and beneficial use/reuse for a wide variety of materials.

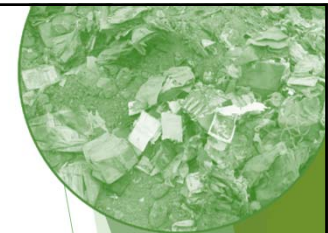
The grant program is under the authority of the [Colorado's Pollution Prevention Advisory Board](#) and is administered by the Colorado Department of Health and Environment.

3



STUDY AREA

Mesa, Delta, Gunnison, and Montrose counties



4

STUDY OBJECTIVE

To optimize waste reduction and diversion efforts in western Colorado.



5

STUDY PROCESS

- ▶ Stakeholder Meetings (4)
- ▶ Survey
- ▶ Waste Composition Audits (5)
- ▶ Gap Analysis
- ▶ Final Report Including Actionable Tasks



6

STAKEHOLDER MEETINGS

Grand Junction

- ▶ Today

Gunnison

- ▶ Week of August 20th (tentative)

Delta

- ▶ Week of September 24th (tentative)

Grand Junction

- ▶ TBD



7

STAKEHOLDER SURVEY

Electronic Survey to Identify:

- ▶ Stakeholders
- ▶ Current Infrastructure
- ▶ Waste Flows
- ▶ Waste Types
- ▶ Policies
- ▶ Attitudes



8

Waste Composition Audits

- ▶ http://www.westernslopenow.com/news/studying-what-s-in-the-landfill_20180512043334/1174667994



9

WASTE AUDIT SCHEDULE

Grand Junction (six-day)

- ▶ June 18-23

One-Day Audits in Gunnison, Montrose & Delta

- ▶ Week of July 9th (tentative)
- ▶ Week of July 13th (tentative)
- ▶ Week of July 30th (tentative)

Grand Junction (six-day)

- ▶ September



10

WASTE AUDIT PLANNING

- ▶ Contact Haulers
- ▶ Discuss Routes
- ▶ Plan Commercial vs. Residential
- ▶ Other Sorts
 - ▶ Construction & Demolition (C&D)
 - ▶ Recyclables



11

WASTE AUDIT PROCESS

- ▶ Waste Sorted into 30 Categories
- ▶ 7 Major Categories
- ▶ Weighed
- ▶ Statistical Analysis
- ▶ Grouped by Diversion Options
- ▶ Recommendations



12

WASTE CATEGORIES

- ▶ Glass Container
- ▶ Glass Other
- ▶ Aluminum Food & Bev.
- ▶ Steel/ Tin
- ▶ Other Metals
- ▶ Plastic bottle PET 1
- ▶ Plastic bottle HDPE 2
- ▶ Non-bottle rigid Plastic 1-7
- ▶ Film, bags & wrap
- ▶ Other plastic
- ▶ Cardboard & brown bags
- ▶ Newspaper
- ▶ Office paper
- ▶ Chipboard/ paperboard
- ▶ Junk Mail/ Aseptic Container
- ▶ Magazines/ Catalogs
- ▶ Other Paper
- ▶ Food Waste
- ▶ Clean Wood
- ▶ Other Organics
- ▶ Textiles
- ▶ Electronics
- ▶ Household Batteries
- ▶ Paint
- ▶ Motor Vehicle Waste
- ▶ C&D
- ▶ Hazardous & Special
- ▶ Residue



13



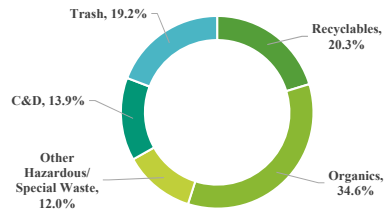
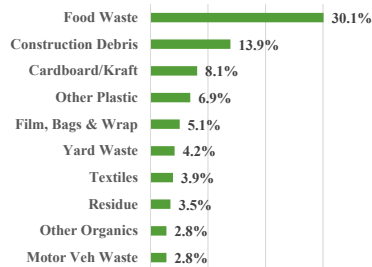
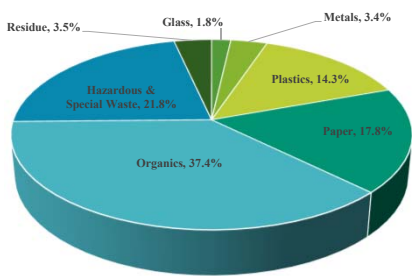
14

DIVERSION CATEGORIES

- ▶ Organics
- ▶ Construction & Demolition (C&D)
- ▶ Traditional Recyclables
- ▶ Hazardous & Special
- ▶ Trash



15



EXAMPLE OF WASTE AUDIT RESULTS



16

DATA ANALYSIS

Compile data from:

- ▶ Survey
- ▶ Waste Composition Audits
- ▶ Stakeholder Meeting Discussions
- ▶ Additional Outreach/ Conversations with Stakeholders



17

GAP ANALYSIS

Identify gaps in:

- ▶ Infrastructure
- ▶ Policy
- ▶ Attitudes/ Initiative
- ▶ Funding
- ▶ Personnel/ Leadership
- ▶ Technology
- ▶ Markets
- ▶ Political Will
- ▶ Others



18

ACTIONABLE TASKS

Determine waste diversion:

- ▶ Tasks currently underway
- ▶ Plan Tasks
- ▶ Timeframe
- ▶ Future of workgroup



19

Comments and Questions



20

1st Stakeholder Meeting
5-29-2018
Grand Junction
Presenter/ Facilitator: Winn Cowman (SMA)

Attendees:

City of Grand Junction-	Darren Starr	DarrenS@gjcity.org
	Tony Martino	TonyM@gjcity.org
	Jay Vancil	jayv@gjcity.org
3xM-	Keith Mantz	Kemantz@hotmail.com
Western Metals Recycling-	Jennifer Laws	Jennifer.Laws@wmrecycling.com
Montrose County-	Keith Laub	klaube@montrosecounty.net
Double J Disposal-	Rachel Leonard	Rachel.doublej@gmail.com
City of Fruita-	Ken Haley	khaley@fruita.org
Mesa County-	Barrett Jensen	Jeffrey.Jenson@mesacounty.us
Mesa County-	Jennifer Richardson	Jennifer.richardson@mesacounty.us
Souder, Miller & Associates	Graham Cottle	Graham.cottle@soudermiller.com

Sorters: How many volunteers? How do you get them? Age requirements?

6 to 8. PPE will be provided. Minimum age 16. May use day laborers as needed.

What change resulted from the previous RREO grant studies?

Eagle is considering a C&D Facility.

Identified large issue with dual stream MRF at Eagle County and primarily single stream haulers.

Doing a feasibility study to help align MRF with haulers.

Discussion on working together/Co-Op. Especially, for electronics and tires.

Creating dialogue among stakeholders is perhaps the biggest advantage.

Jenifer Richardson:

Please contact Winn with any additional stakeholders not initially identified.

Study is to help identify needs and possible private sector inclusion.

Western Metal and Steel:

In Mesa County, the O&G companies are respected, so getting them involved to lead by example would make a substantial difference in the general population's attitude.

Mesa County: Barret:

Mesa County offers HHW and compost facilities for free drop off; however, the landfill has trouble getting the general population to use the facilities.

SMA: Winn:

NW study group discussed the method of incentivizing waste diversion using pricing. (Charge less for pre-sorted items, particularly C&D.) The group also discussed education needed regarding the real costs related to recycling, composting, etc.

Montrose: Keith:

Montrose has single-stream recycling pickup in the city. Glass drop-off in town. It's not clear what the rural options for recycling are. Few options in rural parts of county, especially western portion.

Grand Junction:

Has optional curbside recycling \$1.75/month charge. Has very stringent recycling rules and very little contamination (0.4% contamination).

Western Metal:

The western slope has an issue with the communities' belief in 'perceived space' for landfills.

Mesa County:

WM has a transfer station, but no MRF, no sorting.

Composting facility: mostly green waste, some fruit.

No proteins. No food waste, dairy, biosolids, etc.

Montrose: Keith:

WM runs the landfill that Montrose County owns.

WM has a public recycling drop-off. May go to the front range. May go to New Mexico.

Believes no one on the western slope recycles asphalt shingles – may be an opportunity.

Western Metal:

Owned by New-Core Steel.

Has issues getting a truck to some areas and could use a truck to back-haul to move material. Especially in New Mexico. May work with cardboard runs. Potential partnership.

Delta:

In 2011 the county started recycling pilot program.

In 2012 a private hauler started the recycling program. Have curbside and intown drop-off facility.

Don't do any rural recycling pick-up. They don't have the customer base to support rural recycling.

Has list of possible stakeholders to provide.

Mesa County:

Power point presentation will be posted on Mesa County Landfill's website.

3xM: Keith: green waste:

Composting facility for feedlot manure.

Customers have issues with spreading, so his company spreads it.

Takes wood waste from saw mills. Takes some wood waste from the City of Montrose.

Has tire processing facility that has been inactive due to no markets for shredded tires.

Fruita:

Some composting at WWTP Facility (windrows) for soil amendments for last six years.

Gives compost to sewer customers for free.

Charges fee \$20/ yard for retail resellers.

Less expensive than sending biosolids to the landfill.

Has waitlist for customers. No trouble getting rid of compost.

Creates approx. 200 yards per year of compost.

Looking at grants to start compost facility for food waste.

Potential to accept local (Fruita) food waste from hospitals, schools, restaurants, etc.

SMA:

The next stakeholder meeting is tentatively scheduled for the week of August 20th in Gunnison. The information from the waste composition audits, along with information gathered from the survey will be presented for discussion. SMA's Winn Cowman will send out information prior to the meeting to gauge attendance and adjust accordingly.

In the meantime, we need volunteers for the waste composition audits.



Western Colorado Regional Waste Diversion Study

STAKEHOLDER MEETING
October 24, 2018, Montrose, Colorado



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Please...



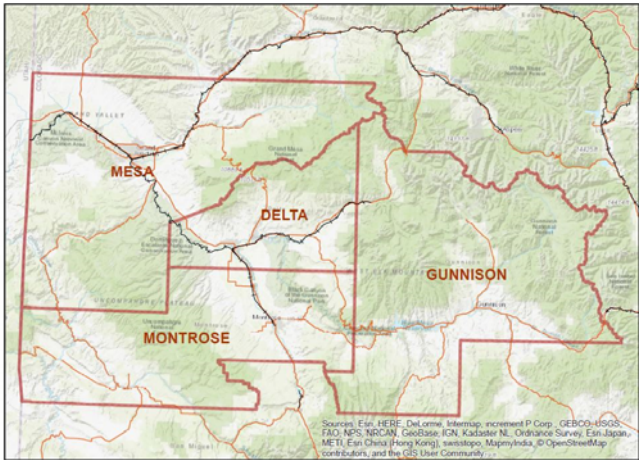
Speak up as we go. Help to clarify data.

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STUDY TEAM

- Barrett Jensen**
 - Director - Mesa County Solid Waste
- Jennifer Richardson**
 - Operations Manager - Mesa County Solid Waste
- Winn Cowman**
 - Project Lead - Souder, Miller & Associates
- Graham Cottle**
 - Project Assistant - Souder, Miller & Associates


3



STUDY AREA
Mesa, Delta, Montrose, and Gunnison counties



4



STUDY OBJECTIVE

To optimize waste reduction and diversion efforts in western Colorado.

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MESA COUNTY STAKEHOLDERS

- ▶ Monument Waste Services
- ▶ City of Grand Junction
- ▶ Curbside Recycling Indefinitely
- ▶ Mesa County Regional Waste
- ▶ Mesa County School District 51
- ▶ Habitat for Humanity of Mesa County
- ▶ Skyline Contracting, Inc.
- ▶ GJ CRI
- ▶ The Rebel Alliance
- ▶ Capco LLC
- ▶ Trade Center Auto Recycling
- ▶ Mesa County Democrats
- ▶ Solstice Senior Living Grand Valley
- ▶ Western Metals Recycling
- ▶ Grand Junction Veterans Healthcare System
- ▶ Climate Reality Project Western CO Chapter
- ▶ Reynolds Polymer Technology
- ▶ Waste Management Inc.
- ▶ Rocky Mountain Sanitation, LLC
- ▶ United Companies
- ▶ Copeka Coffee
- ▶ Recla Metals
- ▶ Individual Citizens




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MONTROSE COUNTY STAKEHOLDERS



3XM GRINDING AND COMPOST LLC



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DELTA COUNTY STAKEHOLDERS



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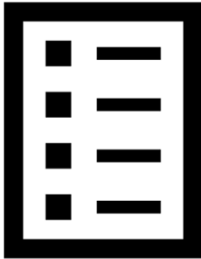


GUNNISON COUNTY STAKEHOLDERS




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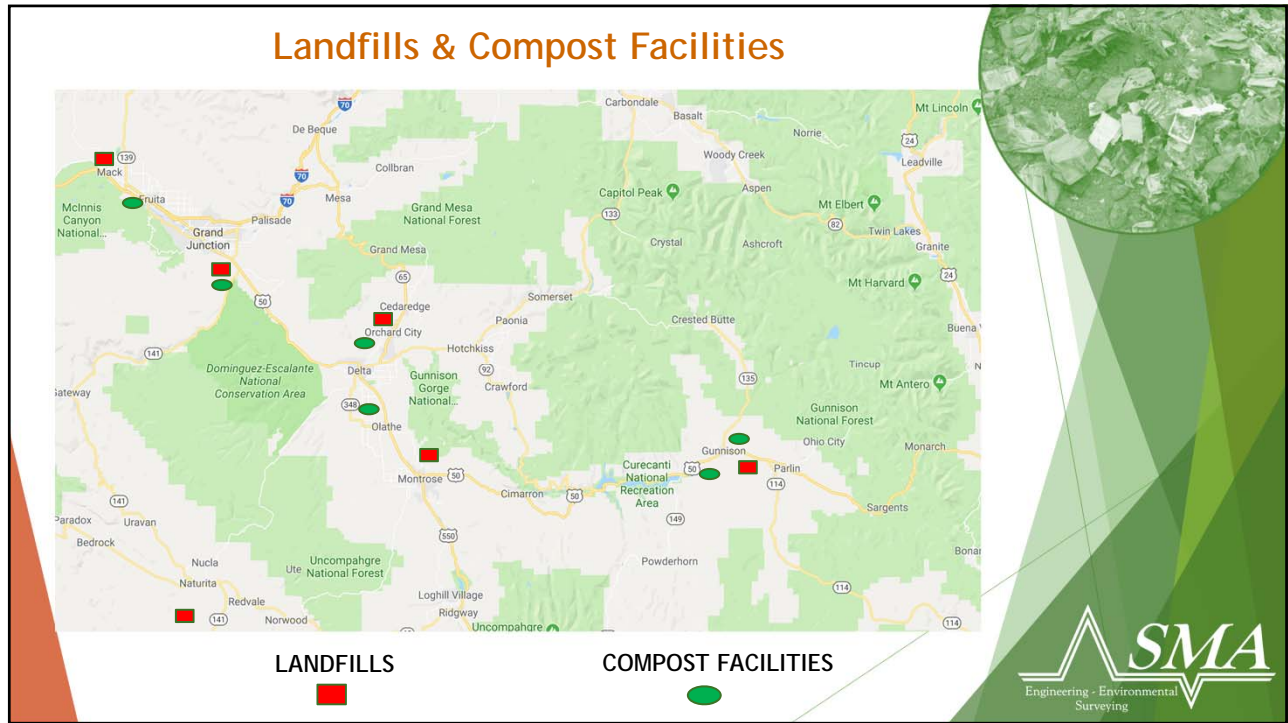
Waste Composition Audit Video



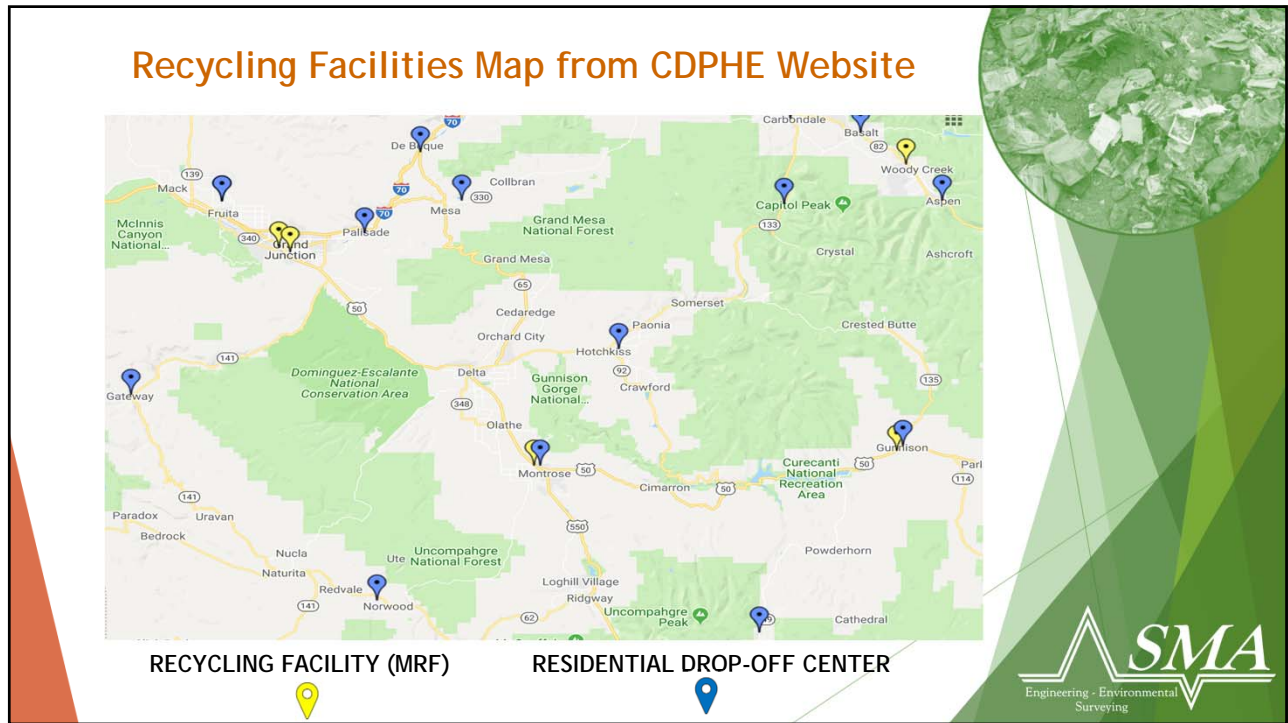
- ▶ https://www.westernslopenow.com/news/waste-characterization-study-at-the-mesa-county-landfill_20180621015521/1252490647



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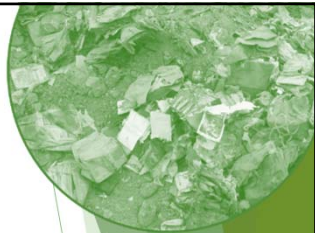

Mesa County Recycling Facilities

City of Grand Junction (Curbside Recycling Indefinitely CRI)

- ▶ Grand Junction - free drop-off site.
- ▶ Optional curbside pickup for Grand Junction residents.
- ▶ Recyclables are pre-sorted into 5 categories and baled onsite.
- ▶ Sell direct to markets.

Waste Management MRF

- ▶ Grand Junction - MRF for paying customers.
- ▶ Drop off available at facility, or recyclables picked up by haulers.
- ▶ Sorted and baled onsite and sold direct to markets.
- ▶ Serves Mesa, Delta, Montrose & North Gunnison (Crested Butte) counties.
- ▶ Free paper collection bins at various City Market locations.

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Mesa County Haulers Collecting Recyclables

- Curbside Recycling Indefinitely
- Waste Management
- Friendly Rod
- Monument Waste
- Rocky Mountain Sanitation
- Commercial Refuse Service
- City of Grand Junction

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Delta County Recycling Facility

Double J Disposal

- ▶ Austin - Drop-off site.
- ▶ Optional curbside pickup for locations in Delta & Montrose counties.
- ▶ Tri-stream collection (tin/plastic/aluminum - cardboard, paper & glass separate).
- ▶ Bale & sell direct to markets.
- ▶ Delta County Transfer Station has free public drop site for county residents - processed by Double J.

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Delta County Haulers Collecting Recyclables



- ▶ Double J Disposal - sell direct to markets
- ▶ Rice Recycling - to Montrose drop-off
- ▶ Waste Management - to GJ MRF

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Montrose County Recycling Facilities

City of Montrose (Operated by WM)


- ▶ City only curbside pickup of single stream (no glass).
- ▶ Cost included with city sanitation service.
- ▶ Free public drop-site.
- ▶ Loose haul to WM Grand Junction MRF.
- ▶ Yard waste, light bulbs, electronics, tires (not WM - sent elsewhere).

Bruin Waste Management

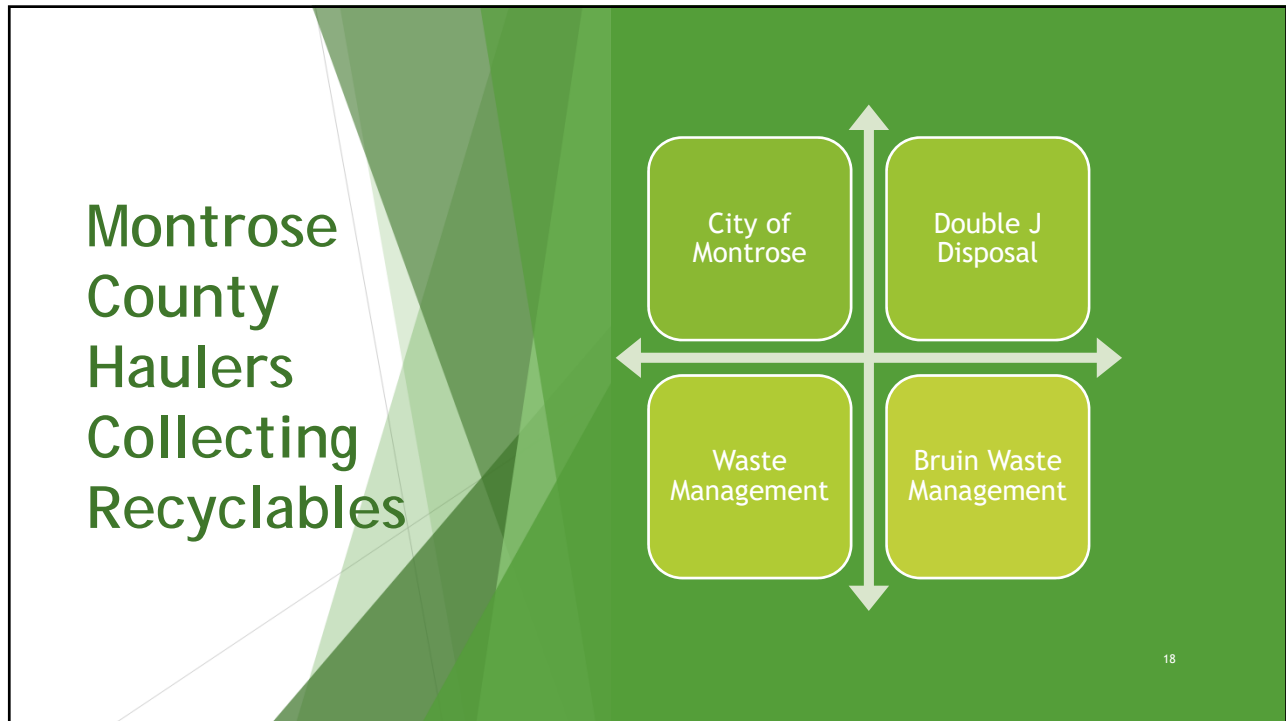
- ▶ Naturita - curbside pickup of single stream.
- ▶ Fee for service - residential & commercial.
- ▶ MRF - sell direct to markets.



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Gunnison County Recycling Facility

Gunnison County Recycling Center

- ▶ Gunnison - free 24/7 drop-off site (week day attendant).
- ▶ Bale and sell direct to markets, crushed glass to Momentum.
- ▶ Note that plastics are 1 & 2 only.
- ▶ Note that Western State University collects own recyclables and loose hauls to county recycling center.

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Gunnison County Haulers Collecting Recyclables



- ▶ Golden Eagle Trash Service
- ▶ Waste Management
- ▶ City of Gunnison

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Compost Facilities In Region

Mesa County Landfill	• Grand Junction - Green waste & manure
City of Fruita WWTP	• Fruita - Biosolids
CB Industries	• Delta - Biosolids with saw dust
Western State Colorado University	• Gunnison - Food waste from dining hall
3XM	• Olathe - Feedlot manure
City of Gunnison WWTP	• Gunnison - Biosolids with green waste


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Local Ordinances



- ▶ Gunnison County - City of Crested Butte / disposable plastic bag ban for retail and wholesale businesses (effective 09/01/18)
- ▶ Mesa County - None
- ▶ Delta County - None
- ▶ Montrose County - None



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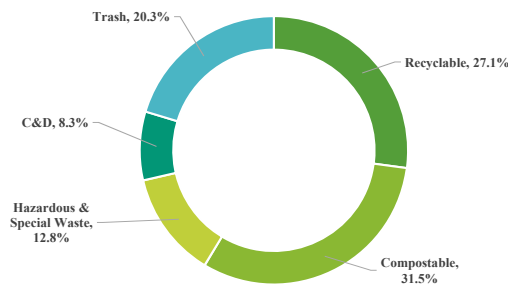
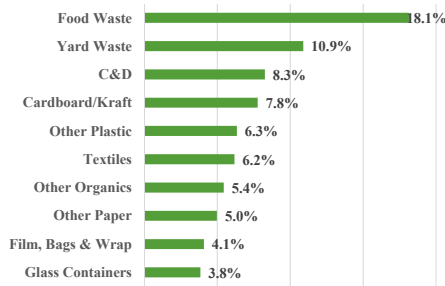
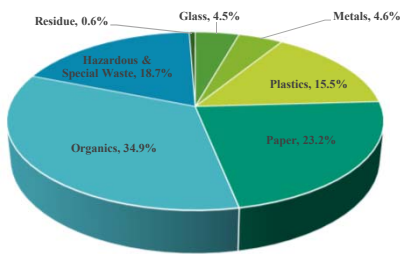
Waste Audit Sample Selection

Service Area	Population	Audit Location	MSW Load Source	Haulers	No. of Samples
Mesa County	151,600	Mesa County Landfill	Commercial & Residential	City of Grand Junction, Commercial Refuse Services, Monument Waste Services, Rocky Mountain Sanitation, Western Colorado Waste, Waste Management	46
Delta County	30,600	Adobe Buttes Landfill	Commercial & Residential	City of Delta, Double J, Roberts	5
Montrose County	41,800	Montrose County Landfill	Commercial & Residential	City of Montrose, Waste Management, Oak Grove Disposal	5
Gunnison County	17,000	Gunnison County Landfill	Commercial & Residential	Golden Eagle, City of Gunnison, Waste Management	5

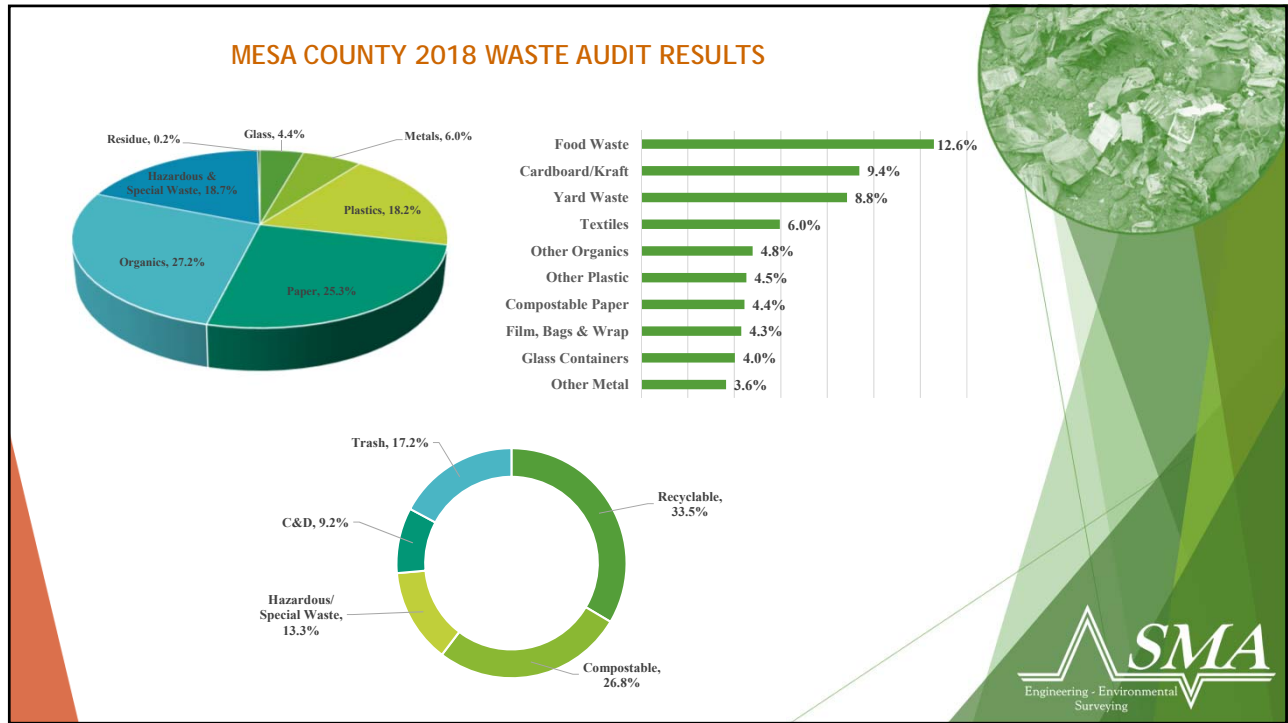


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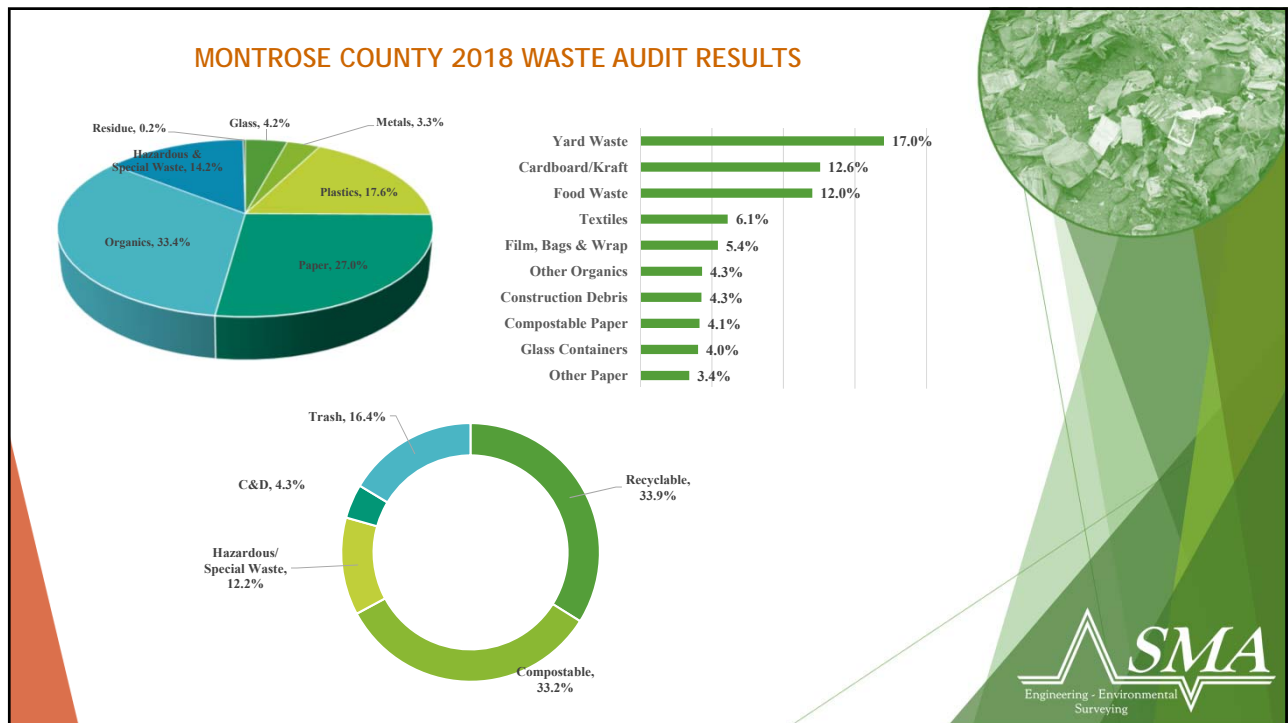
WESTERN REGION 2018 WASTE AUDIT RESULTS



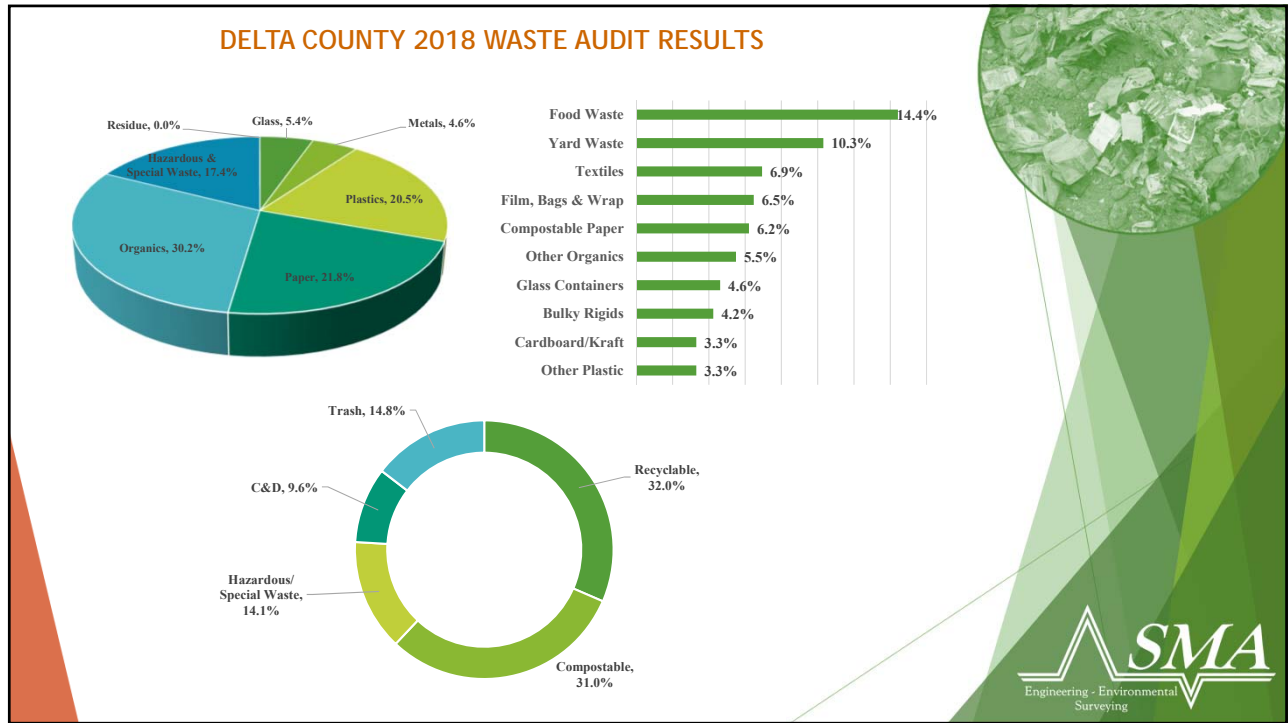
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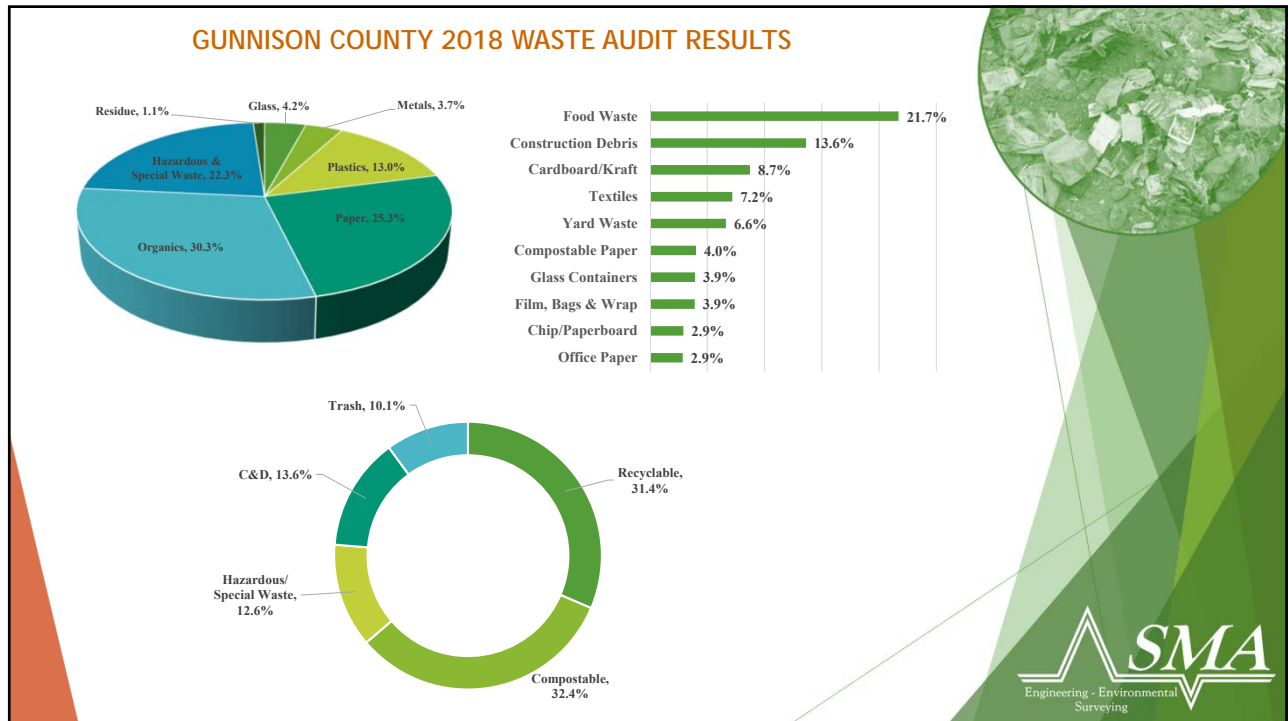
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Comments and Questions

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970-846-6130

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- Compost biosolids
- City of Gunnison compost biosolids at WWTP
- Banner Road Green Waste-Motts- Green Dot near Olathe should be farther north
- Slide 13: WM MRF serves north Gunnison county with recycling from Crested Butte
- Slide 15: Double J tr-stream: tin, plastic, aluminum. Pick up separate paper and cardboard.
 - Double J does haul, sort, & bale
 - Delta county offers free drop-off
 - Bale and sell direct to market
- City of Montrose: pick-up and haul to waste management facility
 - Drop off for green waste, e-waste, light bulbs, tires
 - All free
 - E-waste: is only things with screens: TVs, monitors
 - Tires are currently hauled to Salt Lake
 - Paid for by general fund
 - No commercial tires
 - City of Montrose is Waste Management Montrose
- Bruin and Broad Canyon are the same thing:
 - Bruin hauler
 - Broad Canyon Landfill
 - Both privately owned
 - Bruin has a MRF
- Montrose: recyclables drop-off east of the airport – operated by Waste Management
 - E-waste accepted at landfill- customers pay to drop off e-waste
 - Spring creek recyclables – may do pick-up
- Slide 17: Gunnison County Recycling: drop off to anyone, open 24 hours a day, staffed 7 days a week during business hours
 - Bale and crush glass
 - Glass has historically gone to Coors, clear glass will go to Momentum
 - Western University: has drop off around campus and haul to MRF
 - Gunnison serves Hinsdale County
 - Hinsdale does their own hauling to Landfill and Recycling Center
- Slide 19: Western State Colorado: compost food waste on site; use some compost and give some to local farmers
- 3XM – Registered “Ag”: meaning they can’t import nitrogen sources
 - Feed lot: bulking agent, but technically mulch not compost
- Slide 20:
 - Crested Butte: is implementing a bag ban, but implementation is currently delayed
 - Waste Management trying to push mandatory recycling in Silt
- Western Region 2018 Waste Audit Results Slide:
 - Haz in pie chart hard to read; food waste percentage in bar graph
- Gunnison County: City of Gunnison will take any yard waste from county residents at tree dump
 - Ground and used at WWTP for biosolid composting
 - Landfill sorts out tree waste

Talking Points:

C&D

- City of Montrose- Virgil (?): C&D roll-offs aren't captured; would like to see C&D captured for study
 - GJ & Gunnison could figure out roll-off tonnage, but there is no data on composition
- Grand Junction: C&D facility is expensive; de-construction of the waste and working with companies is necessary;
- Gunnison County Landfill: separates concrete

HHW

- Has HHW drop off days in Montrose every other year
- Montrose: curious how the HHW at Mesa has impacted the amount of haz waste in the MSW
 - Comparison between Mesa haz in MSW to Montrose
- Gunnison does batteries, oil, paint event every 4 or 5 years
- Jennifer would like to see the Haz waste break down
 - Would like to see the composition of haz/special

Low Hanging Fruit

- ~30 recyclables & ~30% compostables
 - Increasing recycling rates on these easy to recycle/traditionally recycled constituents would have a larger impact
- Education and Outreach

Curbside/Convenience

- Look at individual samples to see if there is a difference in recyclables in MSW between county samples where curbside is not offered to city residents where curbside is offered
- Incentivize Recycling – De-emphasize Garbage
- Palisade- Gunner (?) offered free pickup curbside in palisade and saw 70 people sign up and contamination was a problem
 - City of Montrose saw similar results with free curbside and provided a recycling bin
- Double J believes a culture shift needs to occur. Threats and fees won't drive recycling.

Food Waste

- Is there opportunity to compost a dramatic portion of the food waste with few pick-up locations?
 - Restaurants, grocery stores, etc.
- Mesa County/GJ: wonders if state will require food waste to be separated at some point

Can recycling be cherry picked from certain locations?

- Either locations that will embrace the recycling programs or where they will make the largest impacts.

Actionable Tasks/Next Meeting Talking Points

- Mattress hauling; tire shredding;
 - Spring Back to Jennifer that if all the region landfills were on board, Spring Back could lower price considerably.
 - Spring Back rep should be at next stakeholder meeting
- Is there a regional plan/goal?
 - Mesa County has a plan, but it currently doesn't include regional discussions/programs.
- Would like to have weight to volume conversion for individual materials for next meeting.
 - Barret said he could put together weight to volume conversion from Mesa.
- Next meeting in Montrose: Maybe before thanksgiving, first of December is CCI.



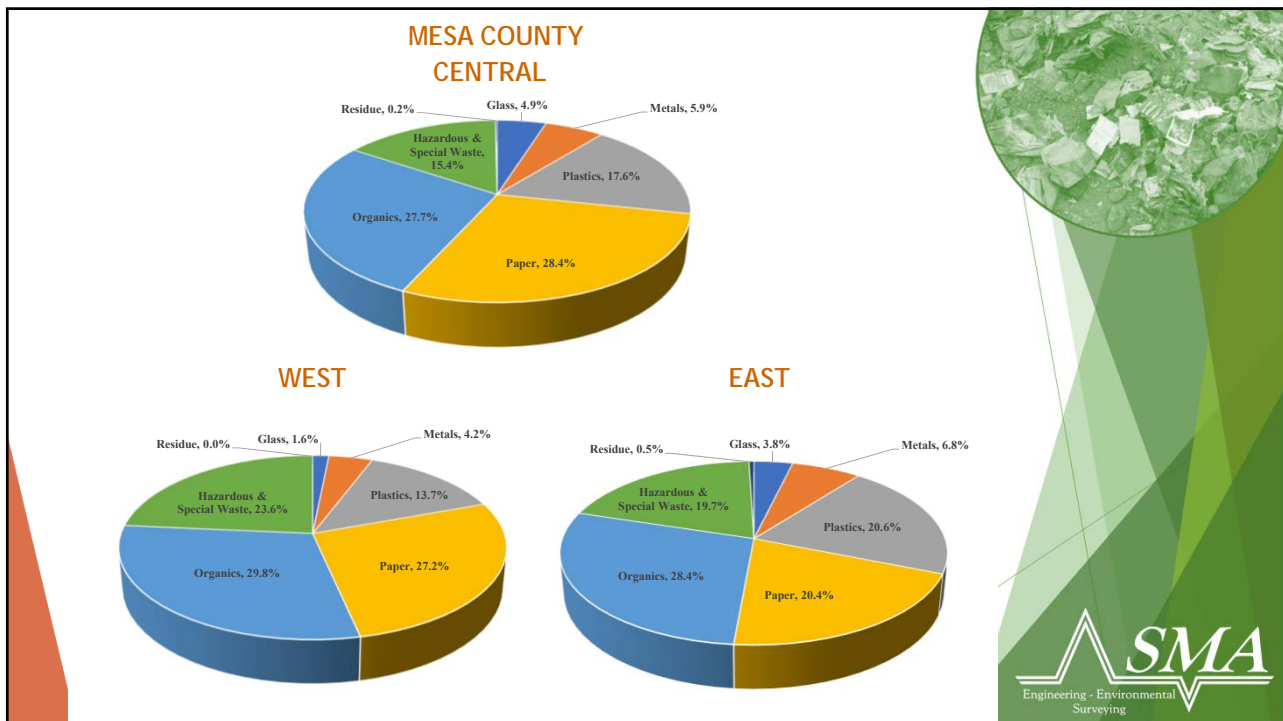
Western Colorado Regional Waste Diversion Study

STAKEHOLDER MEETING

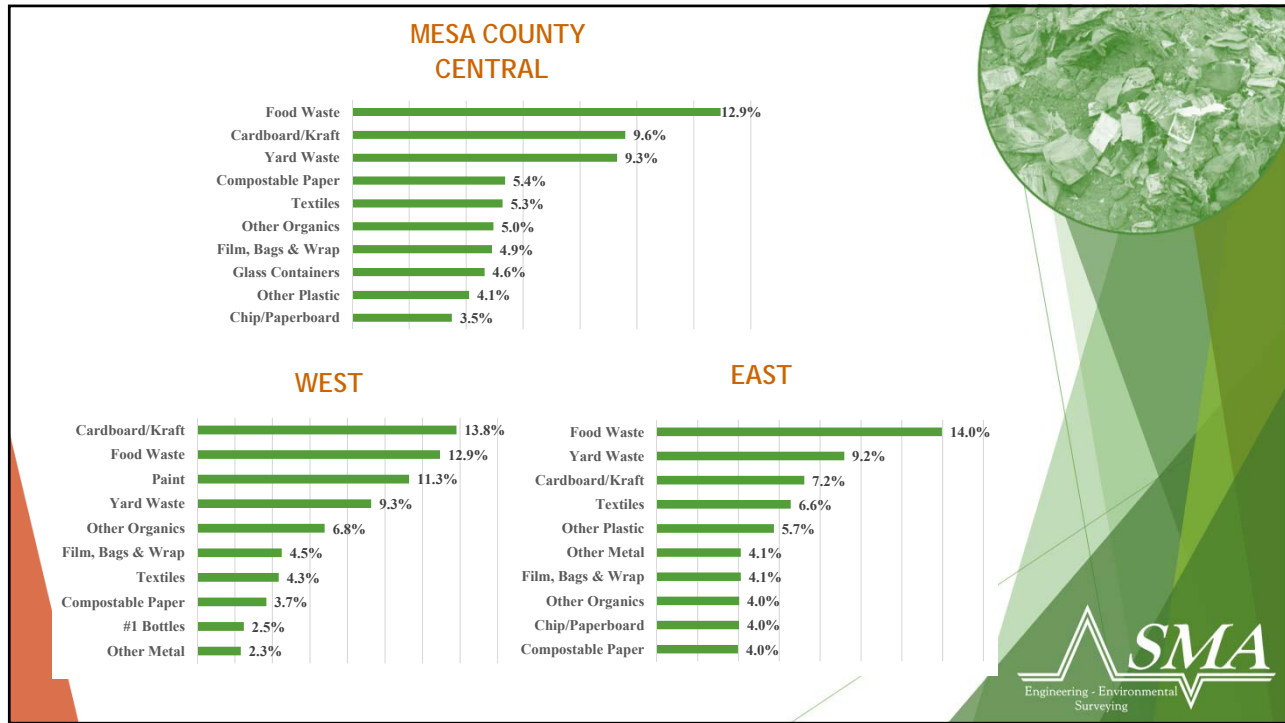
November 16, 2018, Montrose, Colorado



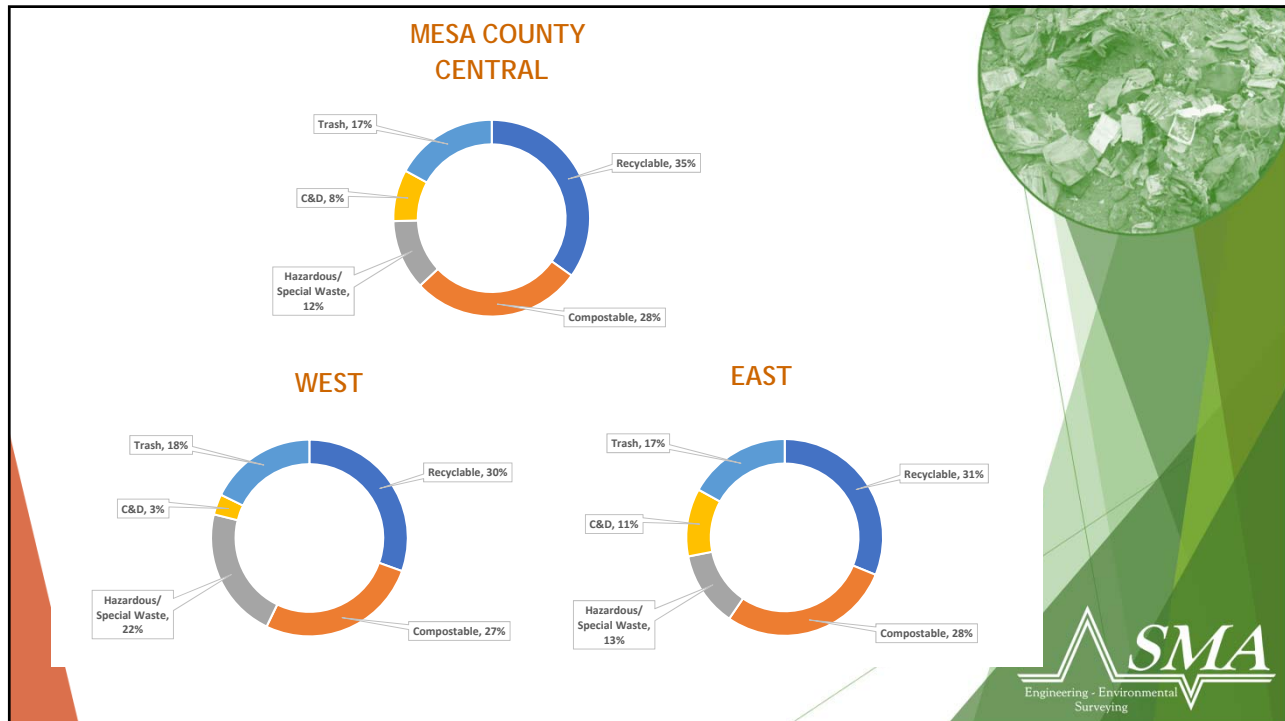
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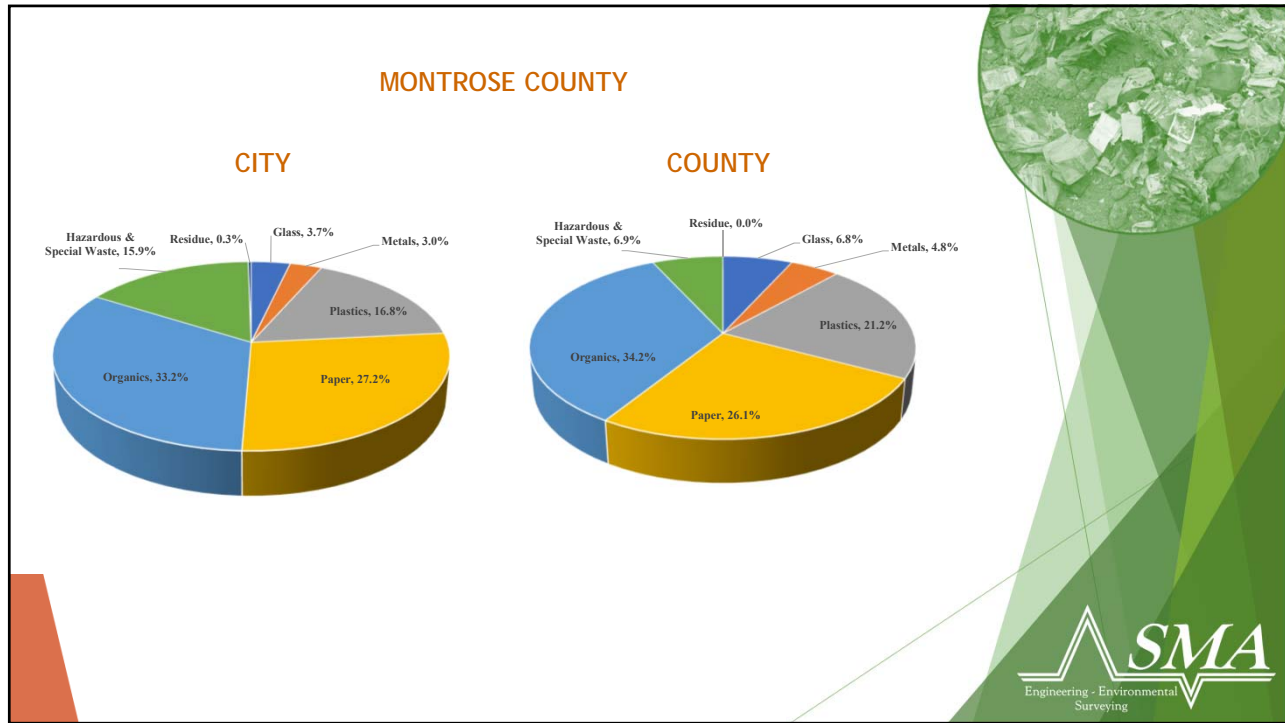
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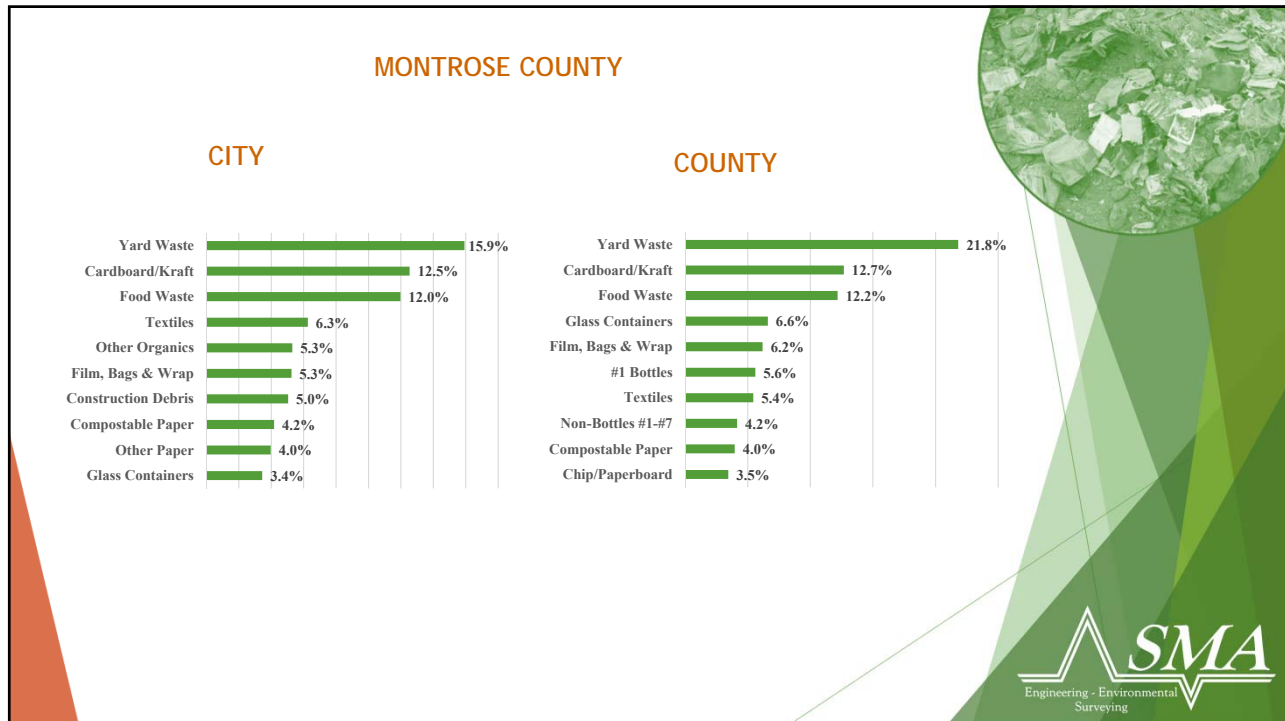
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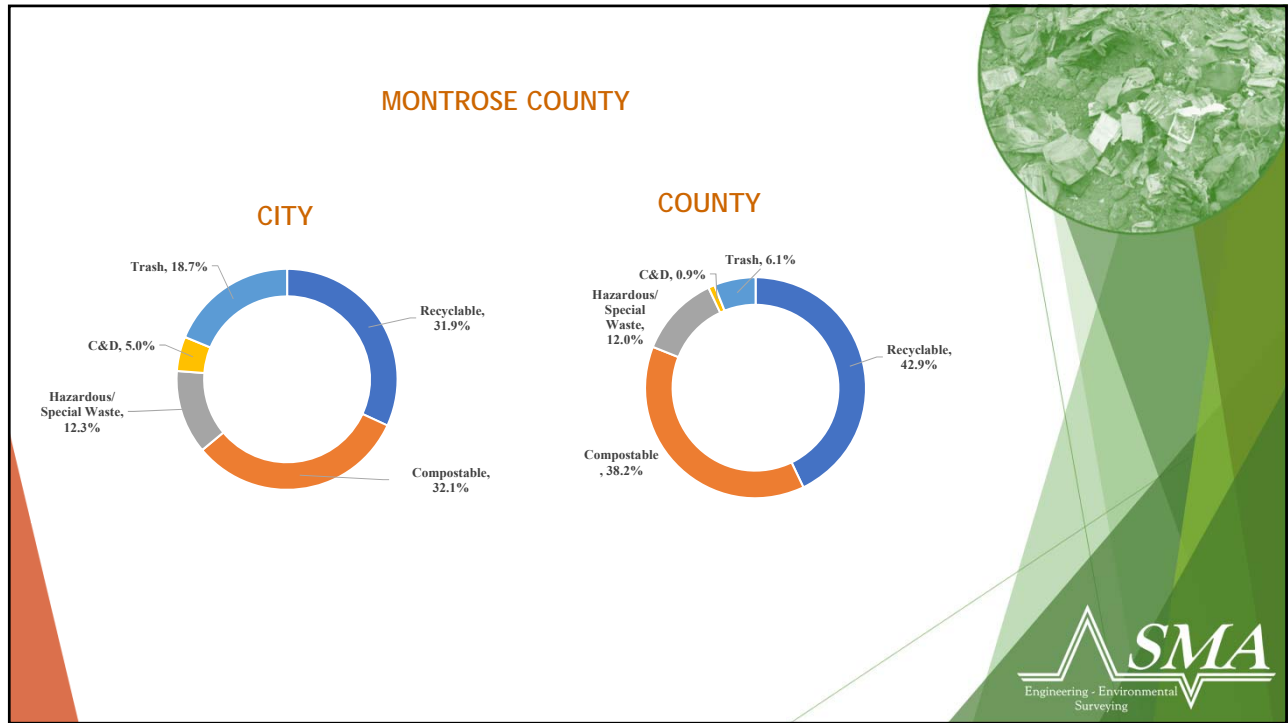
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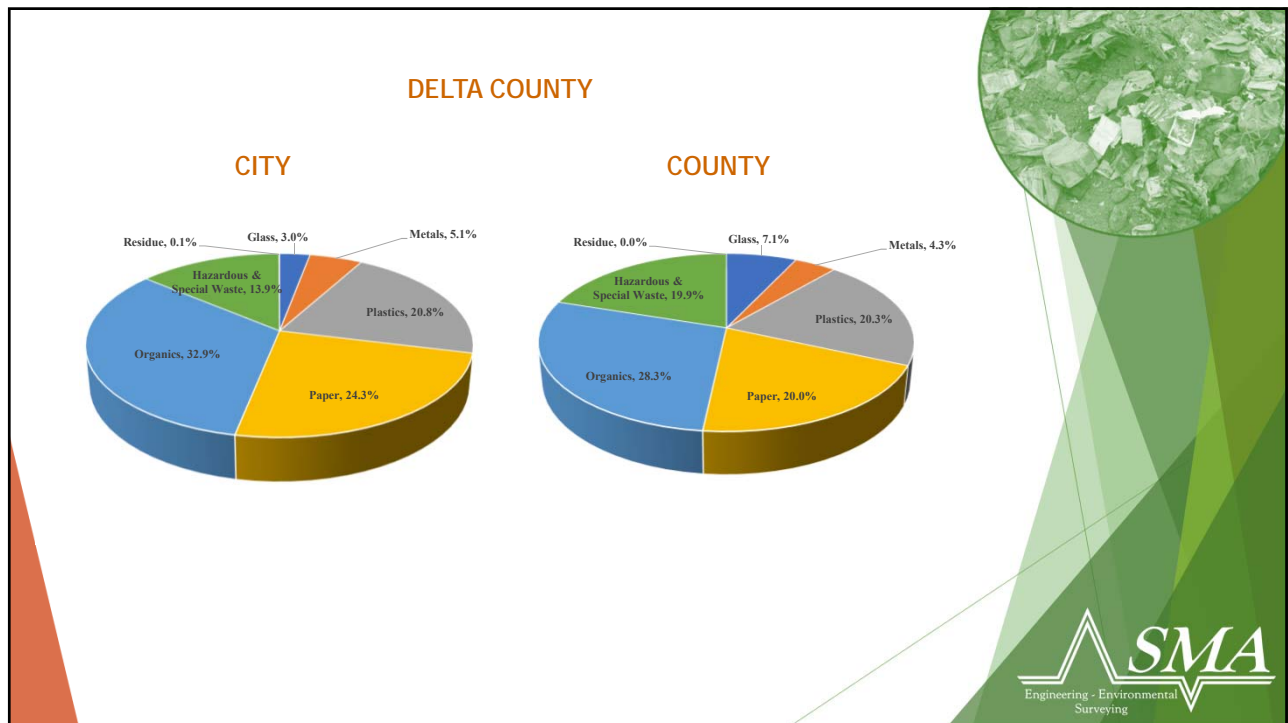
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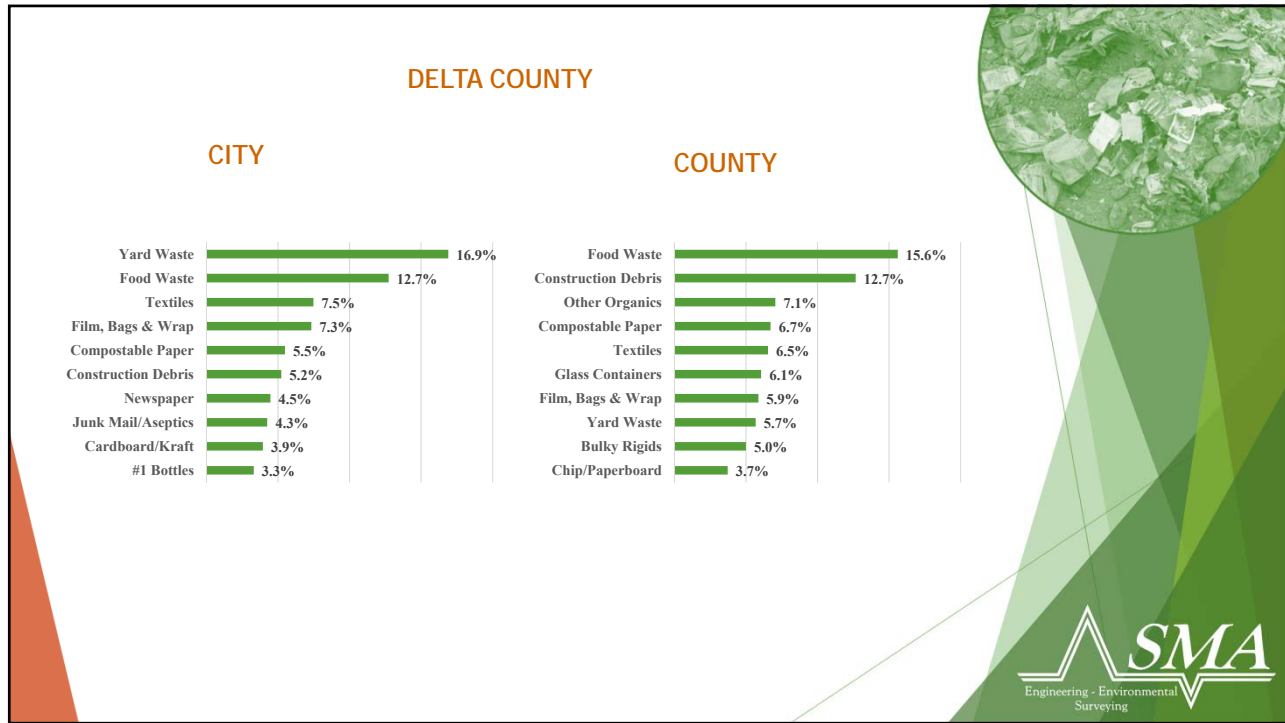
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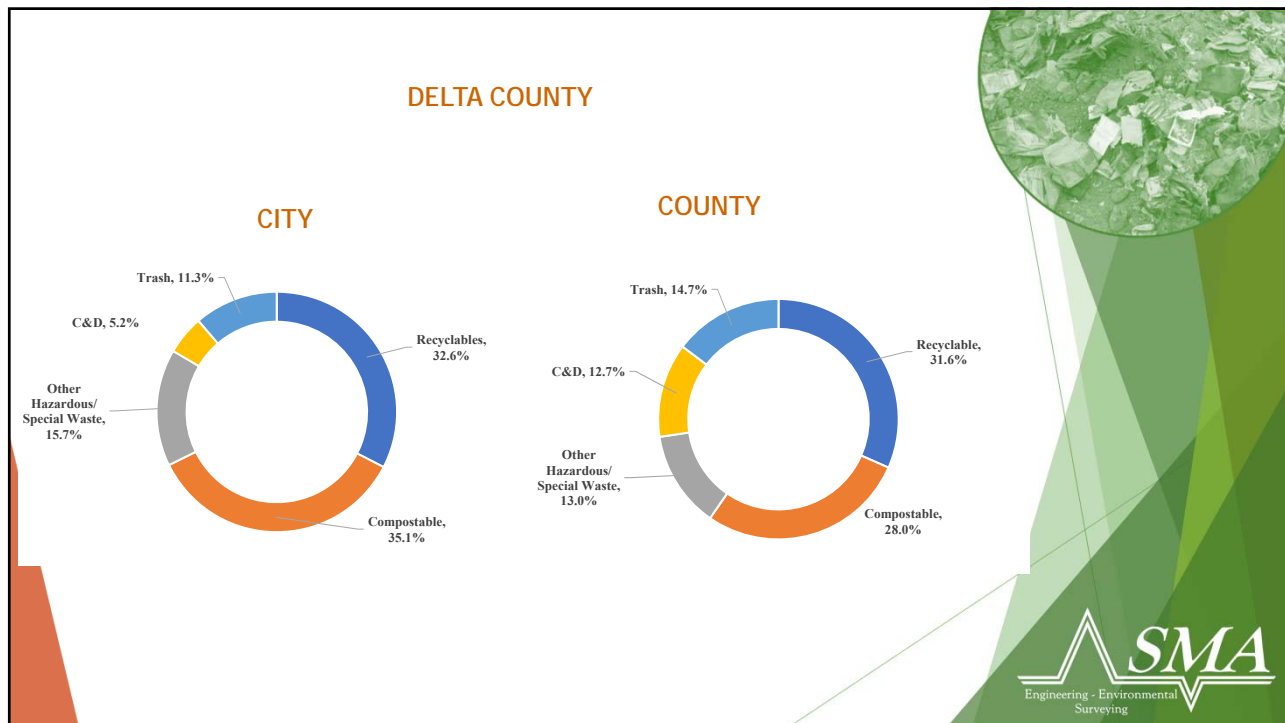
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Comments and Questions

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Mesa County RREO 3rd Stakeholder Meeting

11-16-2018 – Montrose, CO

Presenter/ Facilitator:

Winn Cowman SMA winn.cowman@soudermilller.com

Attendees:

Keith Laube	Montrose County	klaube@montrosecounty.net
Darren Starr	City of Grand Junction	darrens@gjcity.org
Leslie Hallenborg	Montrose Recycles	lesleyeah@msn.com
Janet Chapman	Montrose Recycles	N/A
Nancy Kelso	Montrose Recycles	kelsonancy@yahoo.com
Brandi Carr	Waste Management	Bcarr@wm.com
Dave Jones	Waste Management	Djones@wm.com
Rachel Leonard	Double J Disposal and Recycling	Rachel.doublej@gmail.com
Marlene Crosby	Gunnison County	mcrosby@gunnison.county.org
Nathan King	WCU Gunnison	nking@western.edu
Brian Kirkpatrick	Monument Waste Services	brian@monumentwaste.com
Patrick Cahill	Monument Waste Services	patrick@monumentwaste.com
Jim Scheid	City of Montrose	jscheid@cityofmontrose.org
Rick Beckner	Commercial Refuse Service	rick@commercialrefuse.com
Jennifer Richardson	Mesa County	Jennifer.richardson@mesacounty.us
Mary Hertert	Citizen/Volunteer	colorcreek49@gmail.com
Keith Mautz	3XM Grinding and Compost	2xmgrinding@gmail.com

SMA presented graphs comparing rural parts of counties to incorporated areas for Delta, Mesa & Montrose counties. Percentages of materials are mostly similar throughout the study area, even when rural vs. incorporated is considered.

Mesa County data was divided into groups:

- Central = Grand Junction, Orchard Mesa, Redlands
- West = Fruita, Loma, Mack
- East = Palisade, Clifton, Colbran, Mesa

The data from Montrose and Delta only had one day of sampling vs. Mesa had 12 days of sampling. Caution regarding small sample size from Delta, Montrose & Gunnison counties.

- Top ten lists provide more details – may provide more insight.

Question - how samples were selected in Mesa County?

SMA - A sampling plan was developed based on population. Drivers interviewed about their loads and loads were passed up. Also tried to target certain haulers, but location was priority.

Need to start identifying gaps – what's missing.

City of GJ

- Tried doing a residential green waste program. Pilot program – 680 homes. fliers, advertised on TV & radio. Needed 140 homes to pay for manpower and fuel. Nice neighborhood. Only 31 responses. Free program and receptacle provided. Why? Was made convenient as possible. There was a \$6/month charge for weekly pick up.
- Also GJ – spring cleanup program every year. Went to 2 neighborhoods to see if they would separate compostables. Tried it - too much contamination of material to compost at Mesa County Landfill.
- Over the 20 years tried many programs
- One coffee shop did compostable organics. Good about keeping it clean. Pick up at two restaurants 3/ week. 96-gallon container. So contaminated, couldn't continue.
- Tried several programs and tried making it convenient, but no success.
- Comment that education is the biggest part of the problem.
- Learned that just giving someone a container with flyer doesn't work. Contract with CRI included in-home consultation upfront. Contamination was less of problem. Immediate feedback regarding problems also key.
- In a restaurant, hard to control contamination.

Gunnison County

- Has Drop-off facility. Best education when we started was the schools. Kids go home and say we need to be recycling.

Mesa County

- Webinar from Recycle CO website. Discussed why programs don't work and found best outreach was at the can, putting sticker on the can. Also focus on one item at a time. Once that is absorbed, add another item.

Hauler

- Must make it easy and convenient and thrown in one container – so a child can do it. We focus on no plastic bags. Contamination is very low. The sticker on the cart is focused on identifying which items are problem. Takes time, especially having to discuss it with client. Always some contamination.

Do you charge extra for recycling?

- Yes, with a little advertising and word of mouth, participation rate has increased. We get 15-20 new customers that want to participate because they've seen it. It's education and convenience. That's the biggest thing affecting the western slope. People from the bigger cities want trash, recycling, and yard waste. We're behind the times.

Do you pick up yard waste?

- People from big cities ask for that. Not right now. Been approached by HOAs and are trying to get a pilot program going. Trying to get that with the survey right now.

All the yard waste going to compost facility at Mesa Landfill is hauled by citizens? There's no collection?

Mesa County

- No, just people bringing in on their own. Problems is it's free to everyone. A lot of businesses bring us yard waste for free. Not sure that's sustainable.
- But free doesn't matter. We have free recycling drop-off facilities, free compost, free HHW collection facility. And when you look at our waste data there's still plenty of HHW, compostables, and recyclables in there. Not sure that free is the answer. Free is part of the problem. It makes you not want to participate in programs you have to pay for. It should be free. That's a mindset that we really need to focus on changing. There's a cost and a personal responsibility component.

City of GJ

- When we started recycling program there was a big push then and always to roll cost onto trash rate and make it free. This was 25 years ago. But, why teach people that it's free. So, always had a nominal charge. If you pay, you put in the effort. Our recycling is only monthly and clean and large volumes. Avg. 59 lbs per household per month. If free people are not as committed. Never seen it pay for itself, even considering landfill fees. Unless landfill fees go way up.
- If landfill artificially raises rates, people will be upset.

Mesa County

- Landfill needs to do a better job of explaining why rates need to go up. Current rate per ton at Mesa is \$30/ton. Rate increase in new year.

Gunnison County

- Rate is \$40/ton. Headed to \$45.

Montrose

- We're at \$49 in the city. Other haulers it's \$52.

Comment

- Montezuma County – starting recycling program. Trying to follow CDPHE resolution. Pushing source separated recycling, Hauler required to provide it. If they don't provide it, they pay extra \$10/ton on MSW and C&D. Wasn't well received.

What source separated look like?

City of GJ

- Pull trailer up with bags and separate at the curb.
- Couple of streams and little work at curb, mainly separating glass colored and clear. Everything else in two streams. At facility some mechanical separation. Plastic, steel and aluminum together and magnet pulls of steel. Fan blows others.

Push toward separation is due to contamination. Doesn't currently make sense when communities are set up for single-stream. Whole system is set up for it – trucks, and equipment.

City of GJ

- We were asked to look at single-stream. I called Montrose single stream (Bruin) and he said I have plenty and don't need more. Albuquerque or Denver was the next potential location. Alpine said they had enough. Franklin Street? had a fee of around \$35/ton and going up. \$35/ton to ship. Got number from Durango who's shipping to ABQ. So now \$70/ton. Trucks burning diesel for miles. Didn't seem like a smart thing to do.
- Why considering single-stream?
- Probably due to people moving in from other communities asking for it. It wasn't push for convenience. Denver or Salt Lake. Limited markets for it.

??

- You could get a processing facility in the area. Markets are being developed. It will come back – just going to take time. Focus should be finding something closer and more convenient to be able to process material in rural area. Push away from hub and spoke, especially in an area like ours.

It seems like there is processing in this area. MRF in GJ. Rachel in Delta. Rachel, are you at max capacity?

Double J

- For what we're doing we're keeping up. We have space to increase. At this point we're either going to buy a big sort line or keep keeping on. With recycling markets as they are, China not taking it. Maybe someone else will build capacity, but they're afraid to build infrastructure and then China starts taking it again and they've got no material coming their way. Real uncertain

time to consider shipping material. Really scary – especially when you look at increasing labor and equipment. We could take more, but that comes with big expenses.

How about WM – are you at max capacity?

WM

- We could take more, but we collect everything in dual stream in GJ. Containers are separate from fiber. Glass? Currently not. Glass is going to another company that pays \$20/ton. \$440 for sending a load down. Currently still doing it.

?

- For 25 years we were happy if they covered the cost of shipping – we were lucky. Still taking it.

What about shared infrastructure and hauling in load that's everyone's glass. Would that be helpful?

WM

- We do that now. We have rail spur at our facility and it's not economical. Doesn't pay for itself.

City of GJ

- We have enough area to hold onto stuff. We're able to wait and get full loads. That's not a dilemma. It's finding other markets. We talk about contamination. We almost had a whole truck load sent back of plastic because there was one thing in one bale they saw. They sent photos. It would have been cheaper for me to jump on airplane fly there and pull it out than to send it back. That's what we we're dealing with.

What about Gunnison?

- We can take increase from our own community. But everything comes to us sorted. Crested Butte has single stream because they don't send to our facility. The university, City of Gunnison, private business – all bring it separated. Crested Butte to WM.

WM

- Crested Butte is dual stream. Everything to us is dual.

Gunnison

- We get good quality product because of separation. Only take 1 & 2 plastic.

City of GJ

- Everyone built what they could to take care of their need. We have some private haulers bring material to CRI's drop off facility. Capacity wise trying to figure out how to pay to replace original baler for \$100,000. Manager says program should buy it with all that money. What money?
- What about grants?
- Yeah – we've done a lot with grants. Currently little grant out there, not big one.

Fair to say that infrastructure is there for current amount of recycling? Do rural areas have access to at least a drop-site?

Hauler

- No. Some do. Ridgeway. Nucla and Paradox have no access to recycling. Paradox bin at school? Maybe Bruin doing that.

Mesa

- Anyone have unattended drop-site? We man the drop sites and only open two days a week or every other week to avoid contamination. They're used and would be used more if not so afraid of contamination. Anyone else have unmanned drop sites?

Double J

- Yes – Delta County has one. Manned because at transfer station. Have to drive past guy and wave, but they don't monitor what goes in. They can pay \$10 to throw trash away, or drop as much as want in recycle bins for free, so get bags of waste, broken toys, etc. Just like when raise rate at landfill, people start dropping in desert. Same thing, if they don't have to pay and can hide in recycle bin, they'll throw trash in there.

Gunnison

- Open 24/7 and only have 8 hr/day staffing. We have occasional problems. Contamination very low. Did get contamination with roll-off at Wal-Mart. Everyone that came by from camping and such would contaminate. But centers at more discreet locations with less traffic, get less contamination.

WM

- We have same thing at City Market. We have drop boxes for newspaper and it's always clean. Location is important.

Montrose

- Facility by airport manned 5 days per week. Open on Sat. Landfill operators open and close it. That's the day out of county people come in. It looks pretty clean - they're pretty good about it.

Double J

- Most people who want access to recycling are pretty good about. Just a few bad apples make it hard to control costs.

Montrose

- Having it at landfill can be good or bad because it might be easy to dump garbage too. Unless have cameras. Also a sign saying \$10,000 fine if dump trash in here and never had problem.

City of GJ

- Public calls and says making all this money off recycling. They think we're making money.

Mesa

- One thing noticed is that depending on who talk to, might get different information. Need staff to know what's offered and where. When called around for study, depending on who I talked to, would get different information. Something we could all work on.

City of GJ

- Used to do that and would maintain info. on website. Used batteries, motor oil, etc. Still have some. Problem is people don't let us know when things change. Be helpful if we had one distribution list. Was landfill at one time.

Mesa

- Would be happy to do that. Could put on website. No rates, just what entities take.

Citizen

- Interested because total disconnect between info. that public has for what landfill does, recycling centers, where to take things. Fruita has dual-stream and participation is low.
- Why? Because there is no single source for information. No single message – what public needs to do to support system. Huge disconnect – nothing works without collective public info sources. Don't know where to get info.

All sorts of new programs where you can organize that info. Type in where you live, what you have, and it'll give you options for recycling. Subscription costs money. Wonder if that's the answer, or everyone getting on same page and taking same items is better for consistent messaging. Hard because infrastructure may be different.

Citizen

- In Mesa County – different communities doing different things. Even within one county.

What about incentivizing recycling and composting? Any thoughts?

Mesa Landfill

- PAYT. From hauler perspective why aren't you ding PAYT?

Hauler

- We do volume-based pricing. Less trash you have, the cheaper. But until you make trash so expensive, people aren't incentivized to recycle. Overseas, where they have no room, trash is expensive to landfill. Residents there have no trash – zero waste.

Mesa

- So goes back to increase tip fees.

Double J

- Such a negative reinforcement angle. We're going to penalize, rather than saying because you're doing the right thing... PAYT makes recycling a throw away service. It's free. Only trash costs money so trash ends up in recycle bin.
- Change people's priorities. Matter of what's important to them – they must want to do the right thing.
- Educating children is such a good idea. Kids come home and monitor parents. More a matter of education. Make them want to do it, rather than penalize for not. Then people don't want to because being forced.

Hauler

- All about how you market it. Don't market as a penalizing factor. Ours is volume based off 32-gallon sized container. Two at this price, three at this price. Then tell them we offer single stream recycling. If recycle, could go down to two or one can.

Hauler

- We're pushing to increase the differential between the smaller and larger can. Consumer cares about dollars. Many communities do this. 96-gallons is \$25, \$10 for 64-gallon. Additional can costs as much as first, rather than discounted. Don't want landfill rates so high that people go dump in desert. People who want to recycle are doing it because they want. This is the right thing to do is better approach. Don't care so much about cost.

Mesa

- Tap into what people care about. Is it environment, money, keeping landfill open?
- In webinar one of the things people said worked best was shaming.

Is feedback on cans effective?

Hauler

- Yes, we put the tag, they call into office and we tell them problem and what need to do to fix it. Even though it's single stream, the driver still looks at it. Fairly quickly determines whether acceptable. If not, we put it back and tag container. Only put what's not acceptable back.

Is WM doing the same?

Yes.

How about contamination?

- We have our share. City of Fruita – newsletter sent to city residents saying what's acceptable. Not adhered to. Past 10% acceptance rate for contamination. Now it's 0.5%. If they contaminate our load, we take a photo. They get charged for it. We have to meet contamination rate. That is an incentive – they clean it up.

Hauler

- We send education letters for every new customer that signs up – welcome letter. That does help.

Do you have idea on participation? Since your drop off versus curbside.

Gunnison

- City of Gunnison has curbside. One carrier picks up recyclables. One private company brings to us, the other not. Curbside is sorted at the curb. The university brings to us sorted. Everyone brings it sorted.

People who drop at facility don't have curbside?

- Many have opportunity for curbside, especially in winter, easier to bring in than curbside. Snow, dogs, etc.

Hauler

- We offer commercial single stream dumpsters and cardboard

Double J

- We offer commercial cardboard dumpsters – biggest recycling pickup. For libraries and schools, we do plastic, aluminum and paper. Offer to all customers, but not a lot of takers.

City of GJ

- Our dilemma with commercial – contract is for residential only for curbside. Allowed them (CRI) to supplement their income by doing commercial themselves. It started to overwhelm them. They weren't able to meet contract on residential. Still some commercial. Being phased the other way due to residential demand. Mesa county biggest need is in commercial side. Totally different than residential. Restaurants have contamination.

Double J

- So much harder because all the people.

Mesa

- Wonder if should break out commercial data to see the differences. Maybe there's an item that is problem – cardboard?

City of GJ

- Cardboard going to landfill – majority probably from commercial. Breaking boxes down is a lot of work. Easier to throw in dumpster. Tons of cardboard in residential. Drop site open to everyone – people come from Moab. Probably 85% of people using it do not have curbside. Mostly residential – manned and help customer. Educate while doing that.

Let's jump to organics. Seemed to me that mostly region is composting biosolids. Any food waste composting?

- Maybe CB Industries in Delta.

City of GJ

- Used to be farmers in Mesa County. Some microbreweries give their mash away.
- Grease goes to a pig farmer.

Looking at data – large amount of organics seen in waste audits seems to be going to landfill.

Mesa Landfill

- We budgeted to double size of our compost facility next year. No plan in place for food waste yet, but could potentially have space if someone wanted to do that. If someone would bring, we'd try composting it.

Hauler

- Pitkin County had food waste program that worked well.

What's Community College program? Might be worthwhile to see if they could expand.

- We piloted that at the schools and it came down to getting permits. (?)

There are regulatory changes that make it easier and pilot program is part of regs. May be worth revisiting.

Mesa County WWTP

- Except for sludge. Could only do at landfill or WWTP. Couldn't do any place else as pilot program. Need concrete pad, etc. Tried figuring out what we could do at WWTP.
- 10 years ago – big push with CSU extension and Mesa County. Lawn mower company \$100 discount on mulching mowers. Sessions on backyard composting – had backyard composters for \$50. No participation.
- Certain times of year, most people's cans are 50-60% full of green waste. Pilot would have been \$10/mo for green waste can. In brochure, told them how much they would save in disposal fees – not spending extra money overall (save \$4/mo). 30 out of 650 signed up.

Looks like Gunnison, out of 4 counties, has the least amount of yard waste.

Gunnison

- City of Gunnison – has a tree dump facility. Take yard waste and free to residents of Gunnison. Minimum charge for county residents. Grind it and use in biosolids composting. City's site is manned.

City of GJ

- Drop off sites all over. When Mesa County started compost facility. We learned that without a manned site, we got lots of contamination. We used to take Christmas trees for 6 years. Guy picked it up and had roll-offs in locations. That was before grinding at Mesa Landfill.

Mesa County

- Maybe we need green waste drop-off at our transfer stations. We have recycling – could add green waste too. Try to make known we have trash, recycling and green waste.

Springback should be able to come to next meeting. Is WM recycling mattresses? No

City of GJ

- Our biggest mattress problem is spring cleanup. If we could pull them out, that would be great.

Mesa County Landfill

- Think mattresses would be area where could be successful in getting policy changes. Get a mattress ban. Is that something other counties are interested in?
- Would they just end up in desert?
- We would still take them, but we would be a charge and they couldn't go into landfill. They'd be recycled.
- Mattress stores will take old mattresses.

Mesa County

- Rent a container from Springback and they'd come get them when full. Good to have us all on board. We could have at multiple locations – each landfill. Not free – maybe \$10 a mattress if all our landfills signed on. Then we charge extra to cover transportation and rental cost. That's reasonable. Box springs and mattress.

Gunnison

- That's cheaper than burying.
- Mention of shredding mattresses. Could shred with tires and recycle the steel.

C&D – any separation of C&D going on?

Gunnison

- We're looking at a rate differential for sorting it. We already separate concrete. Trying to get them to not bring it in all mixed together.

Waste Tires – anything on that?

Landfills

- We collect and ship them all to Geocycle.
- We ship ours to Salt Lake.
- Ours go to Salt Lake. Salt Lake is pretty reasonable.

Mesa County

- We shred ours. We could share. Could get a cheaper rate if we kept the shredder on Western Slope longer. Power Screen chunks are reasonable. We use for daily cover. Can also use for infrastructure. Used in Glenwood Springs.

Montrose

- Will WM take that as cover in Montrose?
- No – steel bead in the tires tend to cause problems with truck tires from our experience.

- Leach field uses too. Glenwood was working on using them in leach fields.

Anything you would like to be taking, but no infrastructure?

- No market for clamshells. Would like to ban them, but not sure how it's done.
- What about old paper containers.
- Plastic is cheaper.

Ordinances?

- Plastic Bag ban in Crested Butte.
- Plastic bags put you down for hours. Do see a lot of plastic bags. WM

Mesa County

- Ordinances are tough. Public has to come together and demand it.
- Recycle CO needs a Western Slope council. They met here and abandoned it because want it to be a Western Slope Council and only GJ there.
- We have several counties here.
- Trying to target glass. They're good at getting legislation. If we can get other counties on board, that's a good mechanism.

Gunnison

- The notice for that meeting came out only five days before the meeting. Difficult to make it.

City of GJ

- Ordinances - when you have all different communities your serving, it's a problem. If county does something, people get upset.

Mesa

- County commissioner said on television that he would not support recycling ordinance.

Don't use the word mandatory. Need to make it where it's their choice.

Citizen

- Need community support mechanism to get the message out. There are others to help.

Discussed that tasks will be determined during next meeting. Pretty low rates of recycling and compost participation. What do we want to do to help increase those rates? Organics, first steps?

- EcoCycle 12-14% for Grand Junction or Mesa?
- Comment – people think food waste decomposes in the landfill, why do we care about that?

Landfills are expensive. Also, rule of thumb is that you don't want to haul food more than 60 miles.

Composter

- It has to be really clean. Metals. Use a magnet to remove metals.

EcoCycle statistics are that 90% of people want to recycle. So, what are we missing?

- I don't believe that. We offer it for free.
- It's convenience and whether or not it's a habit. Thrown things away forever, how do we retrain? Has to be convenient.

Mesa

- We need end markets too. Can take it all day long, but need place to take it. All our programs are subsidized by the landfill. HHW, recycling, compost – all supported by landfill. Hard to justify expanding compost.

Double J

- We recycle because our customers want it. It's subsidized by the hauling. It's not profitable.

Mesa

- We do public outreach with kids. They want to recycle and compost. To start collecting at MFUs would be great, but need somewhere for it to go.

City of GJ

- Commercial a big opportunity.
- Mostly cardboard. WM

WM

- Do whole school district for Mesa County. Cardboard is the biggest item.

Will send out a poll to determine next meeting date. After the holidays – maybe January.



Western Colorado Regional Waste Diversion Study

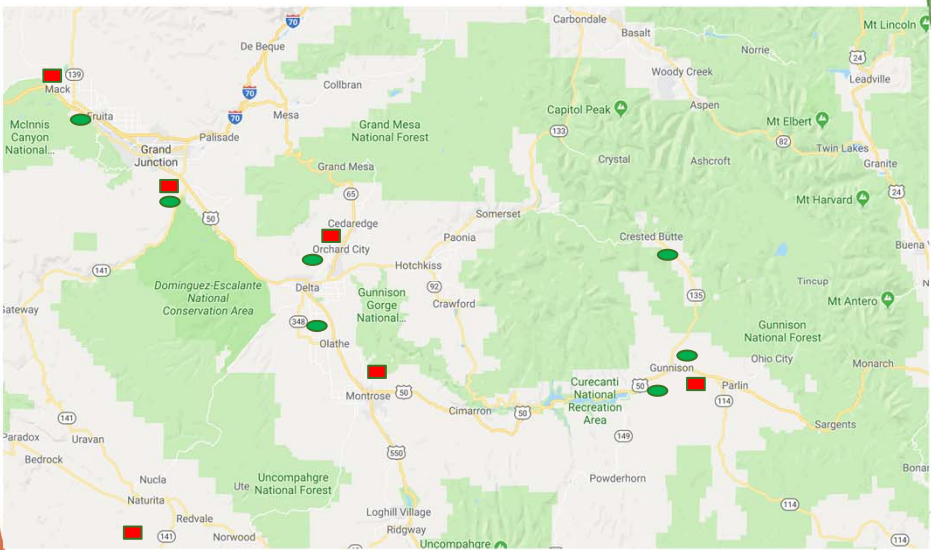
FINAL STAKEHOLDER MEETING

February 7, 2019, Grand Junction, Colorado





1

Landfills & Compost Facilities

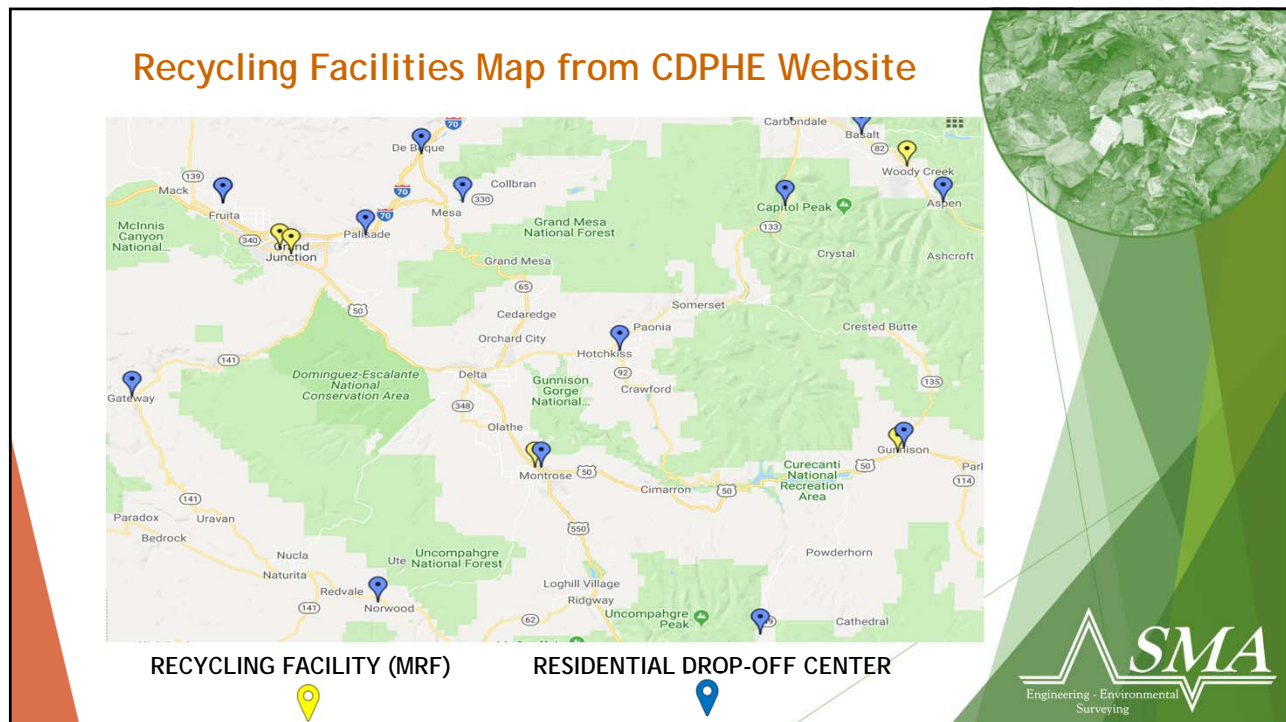


LANDFILLS (Red Square)

COMPOST FACILITIES (Green Circle)



2



3

Mesa County Recycling Facilities

City of Grand Junction (Curbside Recycling Indefinitely CRI)

- ▶ Grand Junction - free drop-off site
- ▶ Optional curbside pickup for Grand Junction residents
- ▶ Recyclables pre-sorted into 5 categories and baled onsite
- ▶ Sell direct to markets

Waste Management MRF

- ▶ Grand Junction - MRF (currently Free)
- ▶ Drop off at facility, or recyclables picked up by haulers (WM and other haulers)
- ▶ Sorted and baled onsite and sold direct to markets
- ▶ Serves Mesa, Delta, Montrose & North Gunnison (Crested Butte) counties
- ▶ Free newspaper collection bins at various City Market locations

4



Mesa County Haulers Collecting Recyclables

(Fee structures?)

- Curbside Recycling Idefinitely
- Waste Management
- Friendly Rod
- ▶ Monument Waste (SS to Alpine Den.)
- ▶ Rocky Mountain Sanitation (to CRI)
- Commercial Refuse Service
- City of Grand Junction (to CRI)

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Mesa County - Other Recycling

C&D

- ▶ Recla Metals
- ▶ Pacific Steel
- ▶ Western Metals Recycling
- ▶ Skyline Contracting, Inc. (concrete & asphalt from own jobs)
- ▶ United Companies (concrete, asphalt & clean soil accepted)

Electronics Collection

- ▶ WM MRF
- ▶ Mesa County Landfill




6

6

Delta County Recycling Facility

Double J Disposal

- ▶ Austin - Drop-off site
- ▶ Optional curbside pickup for locations in Delta & Montrose counties
- ▶ Tri-stream collection (tin/plastic/aluminum) - cardboard, paper & glass separate
- ▶ Also take electronics, white goods/metal
- ▶ Bale & sell direct to markets
- ▶ Delta County Transfer Station has free public drop site for county residents - processed by Double J

7



7

Delta County Haulers



- ▶ Double J Disposal - sell direct to markets
- ▶ Rice Recycling - to Montrose drop-off (then to WM/GJ)
- ▶ Waste Management - NO curbside recycling

8



8



Montrose County Recycling Facilities

City of Montrose (Operated by WM)

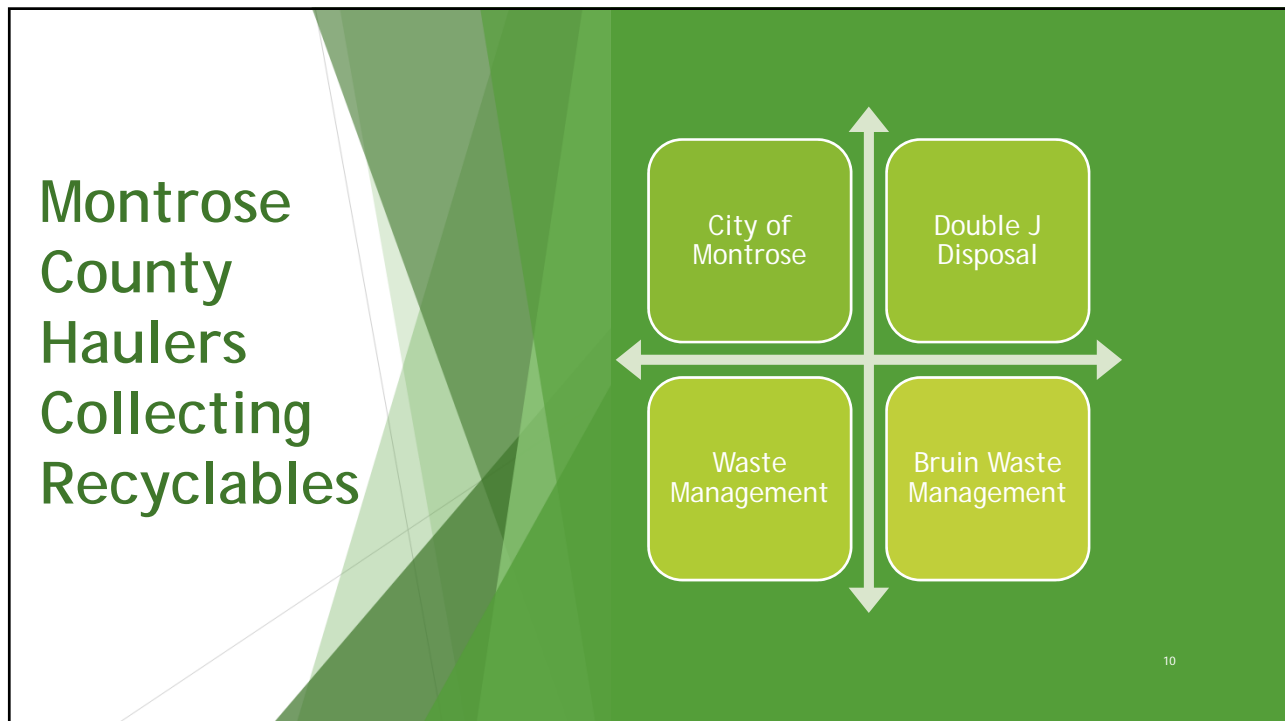
- ▶ City only curbside pickup of single stream (no glass)
- ▶ Cost included with city sanitation service
- ▶ Free public drop-site
- ▶ Loose haul to WM Grand Junction MRF
- ▶ Yard waste, light bulbs, electronics, tires (not WM - sent elsewhere)

Bruin Waste Management

- ▶ Naturita - curbside pickup of single stream
- ▶ Fee for service - residential & commercial
- ▶ MRF - sell direct to markets

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Montrose County - Other Recycling

C&D

- ▶ ?

Electronics Collection

- ▶ City of Montrose

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Gunnison County Recycling Facility

Gunnison County Recycling Center

- ▶ Gunnison - free 24/7 drop-off site (week day attendant)
- ▶ Bale and sell direct to markets, crushed glass to Momentum
- ▶ Note: plastics are 1 & 2 only
- ▶ Western State University collects own recyclables - loose hauls to county recycling center

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Gunnison County Haulers Collecting Recyclables



- ▶ Golden Eagle Trash Service
- ▶ Waste Management (in city only - sent to GJ MRF)
- ▶ City of Gunnison

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Gunnison County - Other Recycling

C&D

- ▶ Gunnison County Landfill
- ▶ Clean fill & concrete collected at landfill

Electronics Collection

- ▶ Gunnison County Recycling Center

Metals

- ▶ Dionisio Metal & Iron Inc.

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Compost Facilities In Region

- Mesa County Landfill
 - Grand Junction - Green waste & manure
- City of Fruita WWTP
 - Fruita - Biosolids
- CB Industries
 - Delta - Biosolids with saw dust
- Western State Colorado University
 - Gunnison - Food waste from dining hall
- 3XM
 - Olathe - Feedlot manure
- City of Gunnison WWTP
 - Gunnison - Biosolids with green waste
- Guerilla Composting
 - Crested Butte - Food waste and green waste

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Local Ordinances



- ▶ Gunnison County - City of Crested Butte / disposable plastic bag ban for retail and wholesale businesses (effective 09/01/18)
- ▶ Mesa County - None
- ▶ Delta County - None
- ▶ Montrose County - None



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Mesa County Gaps

- ▶ Organics
 - ▶ No option for food waste
 - ▶ No pick-up of yard waste (except City of GJ)
 - ▶ Biosolids no longer composted - WWTP
 - ▶ Compost program "not well known" (significant interest noted)
 - ▶ Compost markets identified ?
 - ▶ Small scale/backyard composting more prevalent
- ▶ Traditional Recycling
 - ▶ Multi-family units (MFU) recycling ?
 - ▶ LOW PARTICIPATION
 - ▶ ~20% of WM's Mesa County customers (residential & comm.) have recycling
 - ▶ Contamination an issue, but manageable
 - ▶ School District 51- Forty locations (opportunity?)
 - ▶ Many don't know recycling an option

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Mesa County Gaps Cont'd

- ▶ Structure
 - ▶ No ordinances to help boost rates of recycling
 - ▶ Seen as partisan issue
 - ▶ Education in schools, but not elsewhere - need to engage community
 - ▶ Low landfill fees - \$30/ton
 - ▶ No incentive to recycle - landfilling cheap and recycling optional
- ▶ Others
 - ▶ No options to recycle C&D (lumber, gypsum & shingles), mattresses & carpet
 - ▶ Event waste diversion - more planning, coordination & education needed (parks and stadiums)
 - ▶ Tires landfilled as daily cover

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Delta County Gaps

- ▶ Organics
 - ▶ No option to commercially compost food or yard waste
- ▶ Traditional Recycling
 - ▶ LOW PARTICIPATION - little interest
 - ▶ Education needed
 - ▶ No curbside options in rural areas
 - ▶ Very little curbside recycling
- ▶ Structure
 - ▶ No ordinances to help boost rates of recycling
 - ▶ Need to engage community
 - ▶ Low landfill fees (\$40/ton)
- ▶ Others
 - ▶ No options to recycle C&D
 - ▶ No mattress recycling
 - ▶ Used oil, waste lead acid batteries - where to recycle, transfer station?

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Montrose County Gaps

- ▶ Organics
 - ▶ No option to commercially compost food or yard waste
- ▶ Traditional Recycling
 - ▶ LOW PARTICIPATION
 - ▶ 8% recycled vs. landfilled (WM data)
 - ▶ Education needed
 - ▶ No curbside options in rural areas
 - ▶ MFU recycling?
- ▶ Structure
 - ▶ No ordinances to help boost rates of recycling
 - ▶ Need to engage community
 - ▶ Low landfill fees (\$49 - \$52/ ton)
- ▶ Others
 - ▶ No options to recycle C&D
 - ▶ No mattress recycling
 - ▶ Asphalt shingle recycling option needed


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Gunnison County Gaps

- ▶ Organics
 - ▶ No option to commercially compost food waste (only university)
- ▶ Traditional Recycling
 - ▶ Low recycling rate - 5-8% (GC, WM)
 - ▶ Plastics 3-7 not recycled at County Recycling Center (no markets currently)
 - ▶ No curbside options in rural areas ?
 - ▶ MFU recycling ?
- ▶ Structure
 - ▶ No ordinances to help boost rates of recycling
 - ▶ Low landfill fees (\$49 - \$67/ ton)
- ▶ Others
 - ▶ No mattress recycling



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SMA
Engineering - Environmental
Surveying

21

Gaps for Region

- ▶ Organics
 - ▶ No food waste options
- ▶ Traditional Recycling
 - ▶ Low recycling rates
 - ▶ LOW PARTICIPATION
 - ▶ Education needed
 - ▶ MFU recycling ?
 - ▶ Need to expand commercial (presumed biggest impact)
- ▶ Structure
 - ▶ No ordinances or bans
 - ▶ Low landfill fees (\$30 - \$67/ ton)
- ▶ Others
 - ▶ No mattress recycling
 - ▶ Few options for C&D



22

SMA
Engineering - Environmental
Surveying

22

Why? Because Materials Have Value



A 2015 Colorado study by Skumatz & D'Souza found that 27% of the disposal stream, or about 1.2 million tons/year was currently recyclable, not including "advanced" recyclables.



The buried value was between \$145 and \$170 million annually.



The value at 2015 prices was about \$120 per gross ton, and about \$60 per ton net. (Considering disposal fee of \$15-\$60 per ton in state, \$30 per ton average.)



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Colorado Municipal Solid Waste Diversion Goals

Diversion Goals	2016	2021	2026	2036
Front Range	NA	32%	39%	51%
Greater Colorado	NA	10%	13%	15%
Statewide	19%	28%	35%	45%

"Front Range" shall include the counties of:

Adams	Boulder	Denver	El Paso	Larimer	Weld
Arapahoe	Broomfield	Douglas	Jefferson	Pueblo	

"Greater Colorado" shall include the counties of:

Alamosa	Crowley	Grand	Las Animas	Otero	Saguache
Archuleta	Custer	Gunnison	Lincoln	Ouray	San Juan
Baca	Delta	Hinsdale	Logan	Park	San Miguel
Bent	Dolores	Huerfano	Mesa	Phillips	Sedgwick
Chaffee	Eagle	Jackson	Mineral	Pitkin	Summit
Cheyenne	Elbert	Kiowa	Moffat	Prowers	Teller
Clear Creek	Fremont	Kit Carson	Montezuma	Rio Blanco	Washington
Conejos	Garfield	La Plata	Montrose	Rio Grande	Yuma
Costilla	Gilpin	Lake	Morgan	Routt	

Colorado's Waste Diversion Goals



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State Recommendations - Choose 4

Table 6-7: Level 3 Prescriptive Menu Strategies – Minimum State Recommendations for Publication (Near-Term and/or if State or Regional Authorities are not Achieved) ¹

<ol style="list-style-type: none"> 1. Enhanced education program by communities or counties or designated actors, annually. 2. Recycling depots/drop-offs with regular, convenient hours, in each town of at least 4,000 population. 3. Curbside recycling offered, single family homes (at least bi-weekly, with minimum requirements for program elements). 4. Curbside recycling, fee embedded in solid waste bill (not separate or options), single family households (at least bi-weekly with minimum requirements for program elements). 5. PAYT rate structure required for single family households (with minimum program elements). 6. Multifamily recycling of at least four materials in buildings with 5+ units, with education provided (minimum program elements), in communities greater than 10,000 population. 	<ol style="list-style-type: none"> 7. Yard waste (or yard and food) collection program (single family), at least weekly, or drop-off site open weekends and at least one weekday. 8. Program available for monthly or more frequent on-route collection of yard waste (or food and yard waste) from single family customers, with an education component. 9. Commercial recycling program available for all businesses with 10+ employees or 1,000 square footage, or with 10 CY or greater service per week. 10. Collection and composting program for all businesses generating large quantities or targeted business types (designated by CDPHE Memo, updated). 11. Commercial recycling required for businesses generating large amounts of recyclables. 12. C&D recovery program requiring separate bins at generation or post-separation.
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1. Communities in Front Range recommended to implement eight strategies; communities in Mountains recommended to implement five strategies, and the Eastern/Southeastern and Western Slope regions implement four strategies. Number of recommendations increases over time. Communities exempted if they demonstrate they have reached the numeric diversion goals



Advanced Recommendations

Table 6-8: Level 4 Recommendations

<p>Year 1</p> <ul style="list-style-type: none"> • Transfer stations/drop-offs must take recyclables at no fee • Food scrap generators of 104 TPY must divert material to any certified facility within 20 miles <p>Year 2</p> <ul style="list-style-type: none"> • PAYT statewide (volume or weight) • Recyclables banned from landfill • Transfer stations/drop-offs must accept leaf and yard debris • Haulers must offer residential recycling at no extra charge (embedded) • Public buildings must provide recycling containers adjacent to solid waste containers (except restrooms) • Food scrap generators of 52 TPY must divert material to any certified facility within 20 miles 	<p>Year 3</p> <ul style="list-style-type: none"> • Leaf, yard and clean wood waste banned from landfill • Haulers must offer leaf and yard debris collection • Food scrap generator threshold at 26 TPY <p>Year 4</p> <ul style="list-style-type: none"> • Transfer stations and drop-offs must accept food scraps • Haulers must offer food scrap collection • Food scrap generator threshold to 18 TPY <p>Year 5</p> <ul style="list-style-type: none"> • Food scraps banned from landfill
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Actionable Tasks for Region

- ▶ Spring Back Mattress Recycling - Christopher Conway
- ▶ Recycle Colorado - Regional Task Force
- ▶ Zero Waste Events - Zero Waste Initiative
- ▶ Twine Recycling - Laura Tyler
- ▶ Recycling Jingle - public outreach (Jingle Jim 2/26/19 meeting)
- ▶ Commercial - inclusive (landfill, haulers, recyclers, etc.)
- ▶ Mesa County - consider opening HHW to out-of-county
- ▶ Compost Training - CO SWANA Conference



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Comments and Questions

Winn Cowman, Souder, Miller & Associates
winn.cowman@soudermiller.com
970-846-6130



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Mesa County RREO Final Stakeholder Meeting

2-7-2019 – Grand Junction, CO

Presenter/ Facilitator:

Winn Cowman SMA winn.cowman@soudermilller.com

Attendees:

Jennifer Richardson	Mesa County	Jennifer.richardson@mesacounty.us
Sean McCormick	Gunnison County	mccormickconsulting2@gmail.com
Darren Starr	City of Grand Junction	darrens@gjcity.org
Lisa Mullen	Rocky Mountain Sanitation	
Kathy Kimbell	Citizen	kkimbe25@gmail.com
Brandi Carr	Waste Management	Bcarr@wm.com
Lydia Reynolds	Town of Palisade	lreynolds@townofpalisade.org
Mary Hertert	Citizen/Volunteer	colorcreek49@gmail.com
Jonathan Hontz	Curbside Recycling Indefinitely	info@gjcri.com
Merissa Snyder	Curbside Recycling Indefinitely	info@gjcri.com
Ron Haining	Adobe Buttes Landfill	rhaining@deltacounty.com
Rachel Leonard	Double J Disposal and Recycling	Rachel.doublej@gmail.com
Dale Gambrel	Pacific Steel & Recycling	dale_gambrel@pacific-steel.com
Scott Beilfuss	Several non-profits	gjscottb@gmail.com
?	Volunteer	?
Jim Austin	Montrose County Environmental Health	jaustin@montrosecounty.net
Keith Laube	Montrose County Public Works	klaube@montrosecounty.net
Matt Jones	Commercial Refuse Service	matt@commercialrefuse.com
Pete Baier	Mesa County Public Works	peter.baier@mesacounty.us

First part of presentation is reviewing data collected to ensure accuracy. Please speak up and identify data that should be corrected.

Palisade is expanding their compost program.

Comments:

Mesa County

- Add two drop-off location in GJ to map on slide #3
- CRI & WM GJ accept recyclables from haulers for free
- WM MRF is dual stream
- RMS is going to WM Grand Junction currently – cardboard from commercial only
- CRS – multi stream to CRI – source separated
- All in GJ are fee for service – fees are not embedded
- United Companies – may not be accepting C&D anymore
- Pacific Steel also takes electronics

Delta County

- Tri stream – tin, plastic aluminum/fiber/glass
- Opt-in to recycle – fee for service

Montrose County

- Check on electronics
- Recycling is part of city service fee in Montrose City– not optional
- Electronics are collected at Montrose Landfill

Gunnison County

- Transfer Station in Crested Butte – WM collects recyclables in CB and Mt. Crested Butte
- City of Gunnison – recycling is embedded in fee – not optional/ multiple containers and source separated
- Crested Butte – recycling fee is embedded – not optional
- Gunnison County Landfill – C&D collected, clean wood, concrete, and clean fill – separated at landfill and sold to market
- City of Gunnison – electronics collection
- Town of CB WWTP – composting biosolids
- Status of bag ban unknown

Gaps Analysis Discussion – What’s Missing

Identified during our last meeting/ Please add or disagree with this

Mesa County - Organics

- Mesa not picking up yard waste for composting – being picked up but going into landfill because of contamination issues – not separated
- Mesa leaves picked up are going to compost facility

- Nursery pick up from hauler is taken to Mesa Landfill compost
- There was significant marketing of compost facility – despite survey responses saying facility not known
- CSU extension offered backyard compost class that probably started backyard initiatives
- All county compost is sold – last year sold about 12,000 cy of compost. If had space could do more. Got larger turners – will be able to take twice as much material. Did a study and found that 17-18% of waste coming to landfill was green compostable waste, which is why started Mesa compost facility – to save landfill space.
- Consensus in community because prior there were many compost facilities. All other facilities agreed to stop doing own compost piles and all waste would go to landfill facility. Hear that folks are wanting to go back to having their own facilities – not sure why, if it's cost, or what?
- Mesa Compost is free to drop off, but compost is sold.
- Mesa compost facility doesn't sustain itself. Capital is paid for though landfill. Always our plan to recover operations though. Sometimes we do cover operations, sometimes not. Fee is \$26/cy.
- Should start hearing more adds for compost.
- Markets for Mesa compost not a problem. Biosolids compost – couldn't sell.
- Fruita uses their own composted biosolids. Residents don't buy it.
- 8-10 years ago that biosolids compost wouldn't sell. Tough sell to the public. CDOT/ big Ag jobs are more likely to buy biosolids compost.
- Currently Grand Junction biosolids are going to the landfill
- Did pilot program at WWTP and tried using for Ag purposes but was a tough sell

Comment that auto salvage is happening

Mesa County – Traditional Recyclables

- MFU – CRI does some on a case by case basis. They're commercial due to state statute – 8 units or more is commercial. Volume coming from MFU is great and contamination an issue. Some residents ruin for others. Containers in alleys and transients contaminate. Tried working with HOAs and couldn't clean material. Have 3 or 4 individual residents that sign up on own.
- Diversion rate is 17% for City of GJ. County is either 9% or 14%.
- 25% of City of Grand Junction residential customers sign up for curbside recycling.
- 200 customers per day at drop-off facility – come from everywhere.
- Tons of commercial customers use drop-off.
- Not sure where EcoCycle number came from.
- CRI no problem with contamination.
- School district – WM has contract and best recycle customers – every school, every building has recycling
- Sign up for any service – first question is do you want recycling?
- In annex areas of GJ recycling option not as well known
- People who move to GJ expect it because it's prominent elsewhere
- Mandatory was a dirty word. Public hearing – city council decided no way will we ever have mandatory recycling. Don't want anyone telling me what to do.
- Should be incentivized – not a disincentive
- PAYT – creates wishful recycling and more contamination. Becomes not profitable.

- Equipment a problem for varying container size. The mechanism that picks it up is the issue
- Reason for fee for recycling – never want public to think it pays for itself or free. People still think we’re making money. If I charge for it – if paying, set out rate improves.
- Process to sign up for recycling in City of Grand Junction – the form is a pain to fill out. Have to get hard copy, fill out, sign and return.
- No it’s digital – can be sent electronically.
- Form is an issue – need to have a sit down to discuss how to make it on-line easy form
- Gap in market is the biggest problem. Trucking costs. Put money into starting a market for recyclables locally. If I need funds to make it work, I have trouble selling it to commissioners.
- Biggest gap is need markets.
- HHW is also recycling. Huge amount recycled there.
- A lot going on with marketing in Colorado.
- Yes – but probably in the Front Range.
- Could be developed anywhere in the state – funding available to anyone.

Mesa County - Structure

- Landfill fee just went from \$30 to \$31 and that was a huge deal to make happen

Mesa County – Other Recycling

- Mesa not picking up yard waste for composting – being picked up but going into landfill because of contamination issues – not separated
- Mesa leaves picked up are going to compost facility

Delta County – Traditional Recycling

- So rural, it’s hard to get a route. Have interest, but all over county, doesn’t make sense.
- They don’t want to pay for it. Think recycling should be free. County pays \$40,000 a year for recycling. Paid by county.
- All in town

Delta County – Structure

- Question – do landfills work together on fees?
- No – Mesa County can only take Mesa County waste. We’ve approached policy makers and they vote it down. Hope to keep moving 3-4% a year to get to where need to be. More about running a business and regulatory environment keeps getting more onerous. Will be moving up rates slowly and face pushback every time.
- Recycling will never be the reason to raise rates – policy makers will not likely want to raise rates to increase recycling. Don’t see that currently.
- State may act to raise rates. Hope was that these studies would help regionalization and regional rates may be discussed.

Delta County – Other

- Used oil, batteries, and tires recycled at the landfill

Montrose County – Organics

- Yard waste is mulched

Montrose County – Traditional

- Recycling participation rate is 30% & 8% (MRF vs. landfill)
- All MFU are commercial

Montrose County – Structure

- Question - What meant by landfill fees are low?
- Avg, of \$75-\$80
- Fees are all over the place depending on the cost to operate landfills

Gunnison County –

- No curbside options in rural areas
- Not a lot of MFUs in Gunnison
- Compacted cheaper than loose
- Concrete and clean wood are recycled
- Contractors not motivated to separate wood waste
- Concrete and yard waste easier to get to separate

Region Gaps

- No changes

Discussed waste diversion goals and value of recyclables.

Region running around 5-8% diversion. Goal to be at 10% by 2021.

Handed out CDPHE's ISWMMP – Table 6-7 Level 3 Prescriptive Menu Strategies – goal to pick four. These are suggestions. Also Level 4 recommendations for reference.

Actionable Tasks –

- Spring Back – need to set a date to meet. Briefly described his operation. Will send survey to 4 county representatives. Cost will be specific to each county.
- Comment that if it costs \$60 for mattress and box spring, it's going to end up in the desert.
- Recycle Colorado – Regional Chapter – need a group from Western CO. Trying to give rest of state an opportunity to have a voice. Want more than Mesa County and need industry representatives. Tried a year ago – lots of Mesa County interested, but nothing outside. Obstacles we face here are different – this an opportunity to make things better for us. Interest from Delta (Double J), Montrose County, maybe Marlene in Gunnison.
- Zero Waste Events – opportunity for someone to help make events less wasteful. Landfill working with Mesa County fair to offer \$100 vendor fee reduction of they're willing to not use styrofoam. Events are an opportunity for education.
- Colorado Events organization – call for presenters. Good opportunity for someone to speak on what it takes to have a zero-waste event.

- Recycle Labels – Recycle CO webinar. Recycle Across America labels. People are confused about what is recyclable and not. Dialed in what label should look like to get cleanest material in containers. Suggest our region invest in labels so we have a standardized label. Can put your logo on there. Celebrity campaigns – can use a local celebrity. Blue container for recycle. Green for compost. Black for trash. Standardized. Worth looking into. Recycle CO is supporting this.
- Twine Recycling – Front Range – create pellets used for stuffed animals. Work with 4H groups and coops. Have meeting arranged and will send email to other counties. At meeting will find out what her ask is.
- Jingle Jim – Mesa County meeting with Jingle Jim to create a recycling jingle. Public outreach opportunity. Willing to make it generic and all other counties can use it. Radio – television. We all agree people on western slope don't like being told what to do. If we can get people on board with, we do it because it's the right thing to do.
- Would be great if we could all do commercial together and show a unified front to promote recycling by waste management industries.
- Labeling a great idea, but would be hard for organizations that have put a lot into branding, such as WM.
- If you have a million-dollars of purple containers, not going to want to change to black.
- May need to start slow, using rate of attrition.
- Could also use decals.
- Labels can be customized to each program.
- Mesa County looking to open HHW to out of county waste. Since that waste doesn't stay in Mesa County, think we may be able to take out of county waste. How much do other counties think they may send? Need information about amounts. Maybe we could combine shipments
- Free to residents. Electronics a small fee.
- Maybe once a year – Delta County could have an event and bring it to Mesa County. Not individuals.
- Looking at Table 6-7 – goal to adopt four. #4 What about curbside recycling fee embedded in solid waste bill.
- Gunnison County already doing that, and their recycling rate is the same as the rest of ours.
- Fruita is dual stream – they have 13% rate and it's built into contract. For some reason when you bill a customer for recycling, the rate goes up.
- What's the great thing about embedding fee? When I do that, my department has to be prepared to pick up what's out. How do I plan for that? Don't know how many people will participate. When you have people sign up, you know exactly what you're dealing with.
- Are there others that would work?
- #1 is easy to do. Mesa County is doing #8.
- People have to bring green waste out there though. Accessibility is a big issue – taking green waste to landfill is a big disincentive.
- People had to pay \$8 to pick up green waste, but it didn't result in savings off garbage costs.
- They could reduce their cost by going to a smaller container.
- I believe landfill should charge haulers more if they don't offer recycling.

- Education – has worked on the western slope. 15 years ago – we’re full of desert – why do we want to recycle anything. At some point customers are going to demand it and push city councils. We’re in a grey area now.
- What is #12? Encourage people to separate at the construction site.
- That does happen at some construction sites.
- Has landfill ever done anything with C&D? Mesa County did attempt to divert and contamination was a problem. Recycled asphalt was in demand at one point. Biggest issue here is tires. Tires could be put in asphalt. How do we drive the market? Should be market driven.
- Can we clarify, so there’s no requirements at all for commercial recycling?
- Commercial and residential are two different animals.
- Glass is very expensive to recycle. People want to stay away from commercial.
- But let’s pick one item, like cardboard. It takes a lot of space.
- But it’s lightweight – that container is fluff. It drives up customer costs. Need to train employees and have turnover. Recycling hard for commercial.
- We’re about out of time – sounds like there’s a lot to discuss - can we continue to meet going forward?
- Montrose - some value in meeting once or twice a year. West slope should work together to find a processor that we can all use together. Would be good to keep it on the western slope.
- Delta and Gunnison?
- Gunnison - great beginning to network and we should continue to meet. Continue the conversations.
- Delta – beneficial as markets emerge to see what’s working in other counties.
- Mesa will initiate meetings.
- Delta – guy from South Africa stopped by and wants plastic to melt and create diesel fuel. Gases produce electricity. Very interesting, contact me and I’ll send his information. Looking for plastic only.
- Report will be out at the end of March.
- Mesa County going to reach out to other counties regarding Spring Back, Twine recycling, and Recycle CO group.
- Let us know if there’s anything else anyone decides to do so we can include it in the report.

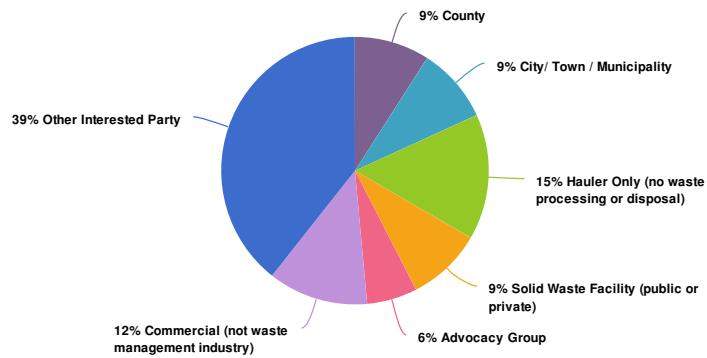
APPENDIX D
SURVEY RESULTS

Report for Mesa County Regional Waste Diversion Study

Response Counts

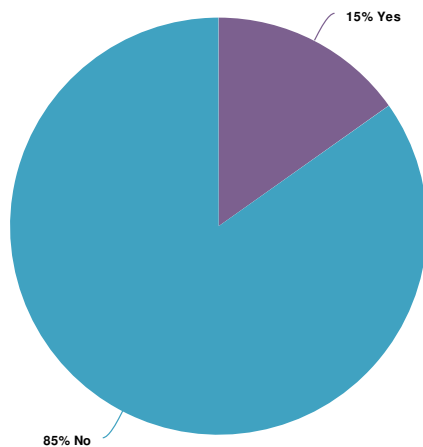
Completion Rate:	100%	<div style="width: 100%; height: 10px; background-color: #4a4a8a;"></div>	
	Complete	<div style="width: 100%; height: 10px; background-color: #4a4a8a;"></div>	33
			Totals: 33

1. Please select the type of agency or entity that best describes yours:



Value	Percent	Responses
County	9.1%	3
City/ Town / Municipality	9.1%	3
Hauler Only (no waste processing or disposal)	15.2%	5
Solid Waste Facility (public or private)	9.1%	3
Advocacy Group	6.1%	2
Commercial (not waste management industry)	12.1%	4
Other Interested Party	39.4%	13
		Totals: 33

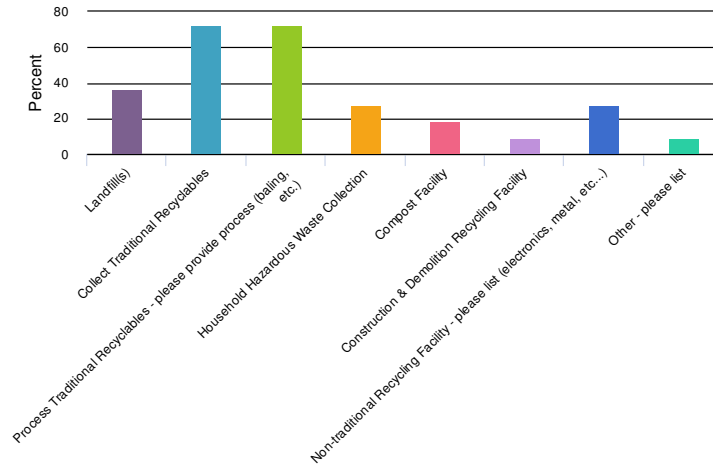
2. Are you strictly a hauler? (no landfill, compost or recycling facility)



Value	Percent	Responses
Yes	15.2%	5
No	84.8%	28

Totals: 33

3. Please select all that apply to your solid waste facility:



Value	Percent	Responses
Landfill(s)	36.4%	4
Collect Traditional Recyclables	72.7%	8
Process Traditional Recyclables - please provide process (baling, etc.)	72.7%	8
Household Hazardous Waste Collection	27.3%	3
Compost Facility	18.2%	2
Construction & Demolition Recycling Facility	9.1%	1
Non-traditional Recycling Facility - please list (electronics, metal, etc...)	27.3%	3
Other - please list	9.1%	1

4. What is the name of the landfill?

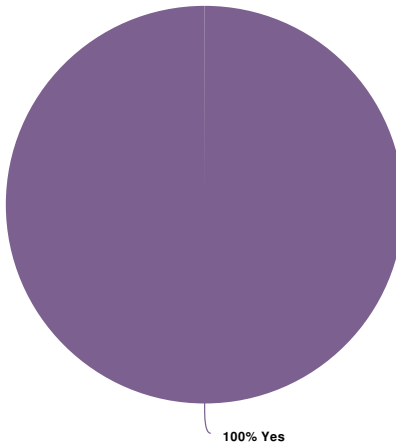
ResponseID	Response
18	Gunnison County Landfill
23	Mesa County Landfill
27	Mesa County Landfill
29	Montrose Landfill

5. Where is the landfill located?

6. Who owns the landfill?

ResponseID	Response
18	County
23	Mesa County
27	Mesa County
29	Montrose County

7. Is this an active landfill?



Value	Percent	Responses
Yes	100.0%	4
		Totals: 4

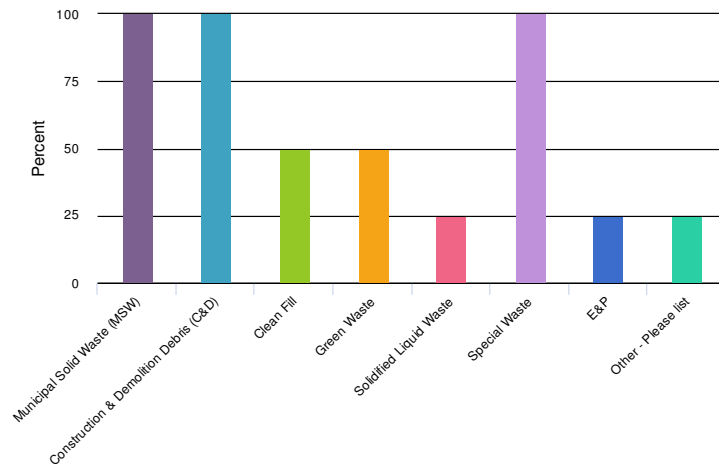
8. What are the days and hours of operation:

ResponseID	Response
18	Monday - Saturday 8:00 -4:00
23	7-4:45
27	M-F 7-4:45; Sat 8-4:15
29	M-F 7 am - 5 pm; Sat 8 am - 4 pm

9. Please list the landfill operator:

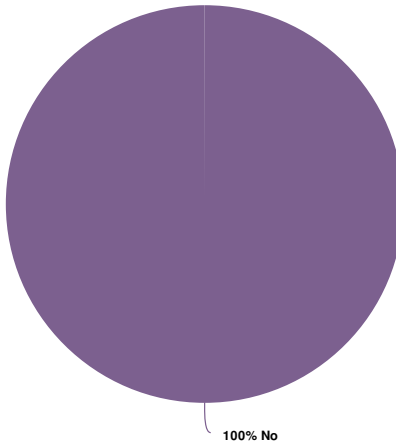
ResponseID	Response
18	Larry Gallegos
23	Mesa County
27	Mesa County
29	Waste Managment

10. Please check all wastes currently accepted for disposal in this landfill:



Value	Percent	Responses
Municipal Solid Waste (MSW)	100.0%	4
Construction & Demolition Debris (C&D)	100.0%	4
Clean Fill	50.0%	2
Green Waste	50.0%	2
Solidified Liquid Waste	25.0%	1
Special Waste	100.0%	4
E&P	25.0%	1
Other - Please list	25.0%	1

11. Is the landfill currently subject to a Colorado Department of Public Health & Environment (CDPHE) issued Compliance Advisory or Compliance Order?



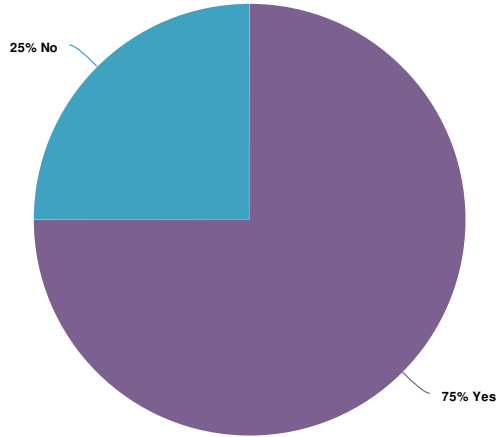
Value	Percent	Responses
No	100.0%	4

Totals: 4

12. What is the estimated population served by this landfill?

ResponseID	Response
18	10,000 - 15,000
23	100,000
27	150,000
29	42,000

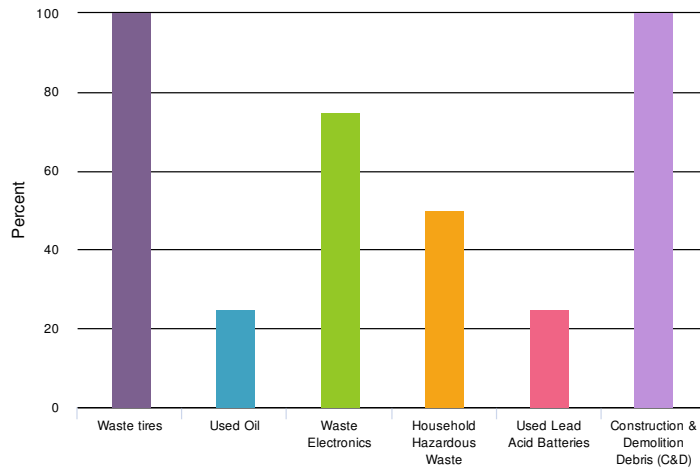
13. Can you provide a current 12-month report of volumes of all materials handled at the facility?



Value	Percent	Responses
Yes	75.0%	3
No	25.0%	1

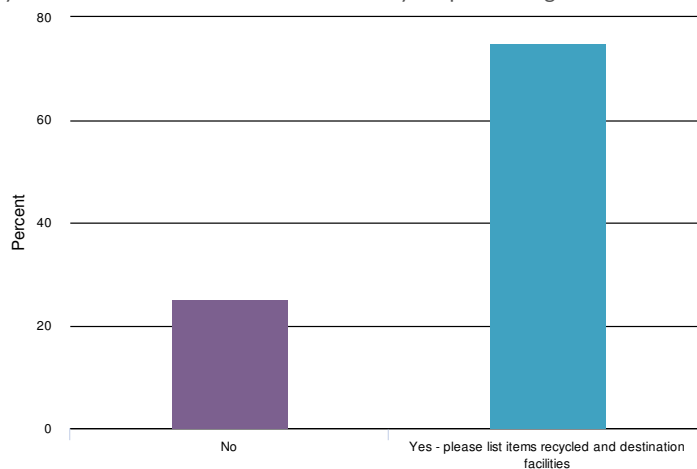
Totals: 4

14. Does the landfill collect any of the following items?



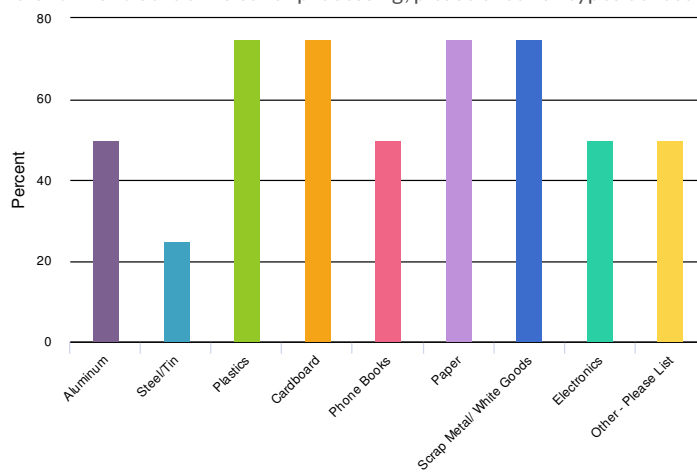
Value	Percent	Responses
Waste tires	100.0%	4
Used Oil	25.0%	1
Waste Electronics	75.0%	3
Household Hazardous Waste	50.0%	2
Used Lead Acid Batteries	25.0%	1
Construction & Demolition Debris (C&D)	100.0%	4










15. Does the landfill collect any recyclables that are sent to an outside facility for processing?



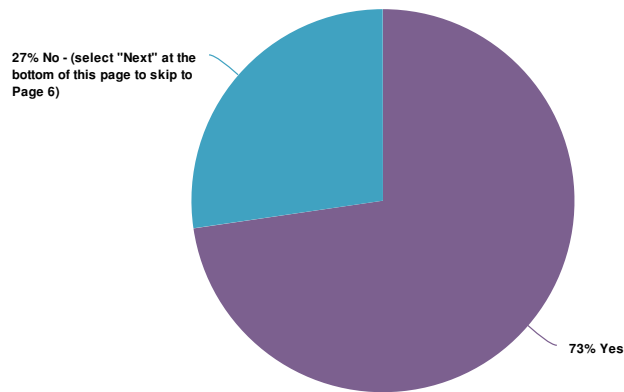
Value	Percent	Responses
No	25.0%	1
Yes - please list items recycled and destination facilities	75.0%	3



16. If recyclables are collected at the landfill and sent off-site for processing, please check all types collected:



Value		Percent	Responses
Aluminum		50.0%	2
Steel/Tin		25.0%	1
Plastics		75.0%	3
Cardboard		75.0%	3
Phone Books		50.0%	2
Paper		75.0%	3
Scrap Metal/ White Goods		75.0%	3
Electronics		50.0%	2
Other - Please List		50.0%	2

17. Does your Agency own or operate a recycling facility?



Value		Percent	Responses
Yes		72.7%	8
No - (select "Next" at the bottom of this page to skip to Page 6)		27.3%	3

Totals: 11

18. What is the name of the recycling facility?

ResponseID	Response
5	Waste Management Grand Junction MRF
7	Waste Management
10	Monument Waste Services
18	Gunnison County Recycle Center
23	CRI
32	Double J Recycle Center
35	Curbside Recycling Indefinitely, Inc.
36	CRI

19. Where is the recycling facility located?

ResponseID	Response
5	1227 Winters Ave , Grand Junction CO
7	Grand Junction
10	2410 Blue Heron Road
18	Basin Park Dr. next to the county Public Works Shop.
23	333 West Ave
32	21358 Austin Rd. Austin, CO 81410
35	Grand Junction, CO
36	333 West Ave

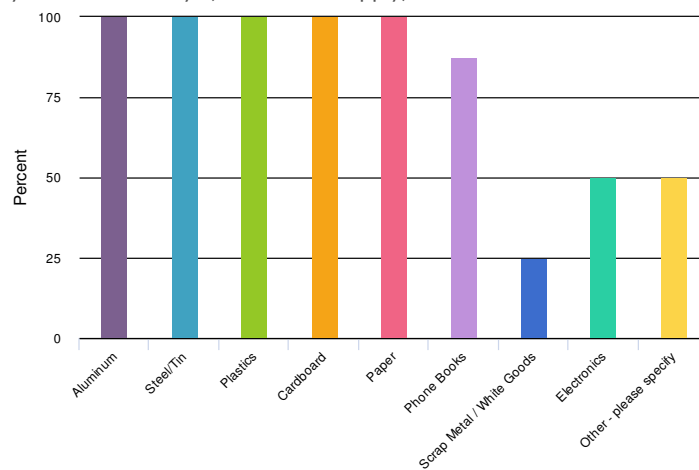
20. What are the recycling facility's operating hours and days?










ResponseID	Response
5	M-F 7-4
7	7-4, M-F
10	8-5, Monday thru Friday
18	24 Hr. 7 Days / week drop off center
23	7-4 Monday through Friday
32	Tuesday - Friday 9AM - 4PM
35	Mon-Fri 7 a.m. - 4 p.m. Saturday 9 a.m. - 3 p.m.
36	8:00-4:00 m-f 9:00-1:00 s

21. Who is the owner of the recycling facility?

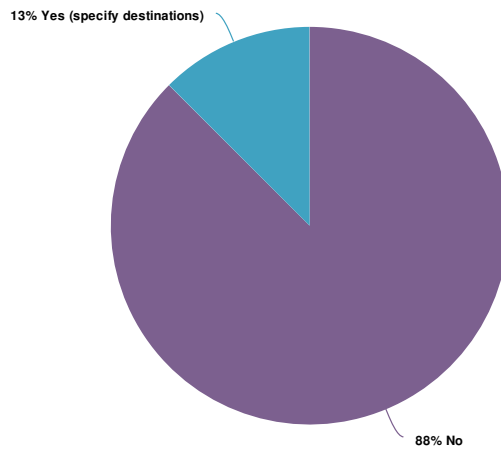
22. Who operates the recycling facility?



23. What types of materials are recycled at the facility? (check all that apply)



Value		Percent	Responses
Aluminum		100.0%	8
Steel/Tin		100.0%	8
Plastics		100.0%	8
Cardboard		100.0%	8
Paper		100.0%	8
Phone Books		87.5%	7
Scrap Metal / White Goods		25.0%	2
Electronics		50.0%	4
Other - please specify		50.0%	4

24. Is this just a collection facility (no baling or processing)?



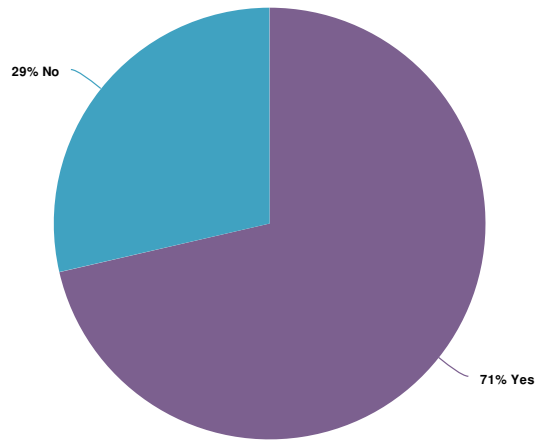
Value		Percent	Responses
No		87.5%	7
Yes (specify destinations)		12.5%	1

Totals: 8

25. What methods are used to prepare each material for shipping?

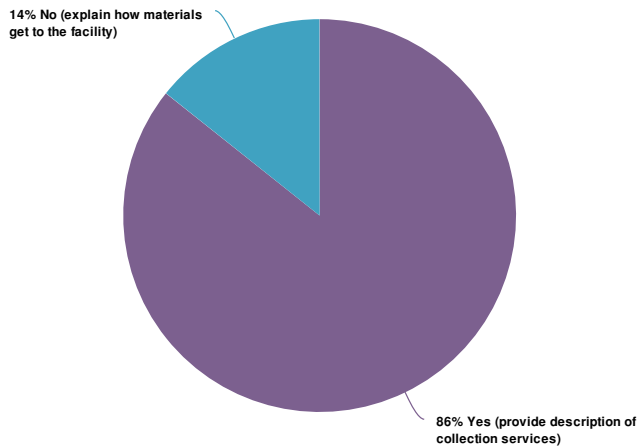
	Aluminum	Steel/ Tin	Plastics	Cardboard	Paper	Phone Books	Scrap Metal / White Goods	Electronics	Motor Oil	Antifreeze	Lead Acid Batteries	Waste Tires	HHW	Other	Tc Ch
Baled Checks Row Check %	6 15.8%	6 15.8%	6 15.8%	6 15.8%	6 15.8%	5 13.2%	1 2.6%	1 2.6%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 2.6%	38
Loose Checks Row Check %	1 11.1%	1 11.1%	1 11.1%	1 11.1%	1 11.1%	1 11.1%	1 11.1%	1 11.1%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 11.1%	9
Wrapped Pallets Checks Row Check %	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 100.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1
Total Checks Checks % of Total Checks	7 14.6%	7 14.6%	7 14.6%	7 14.6%	7 14.6%	6 12.5%	2 4.2%	3 6.3%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	2 4.2%	48 10

26. Can you provide a current 12-month report of the tonnages or cubic yards handled by this facility?



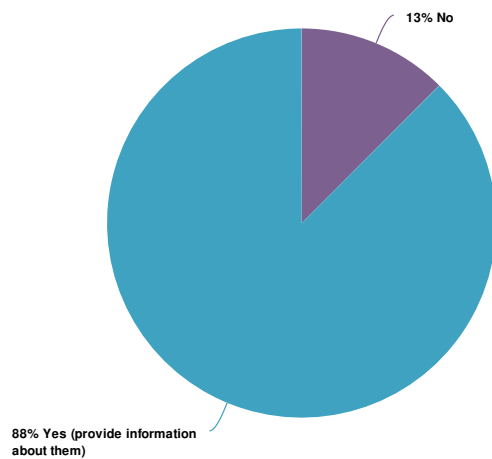
Value	Percent	Responses
Yes	71.4%	5
No	28.6%	2
Totals: 7		

27. Does your facility provide collection services for the recyclables?



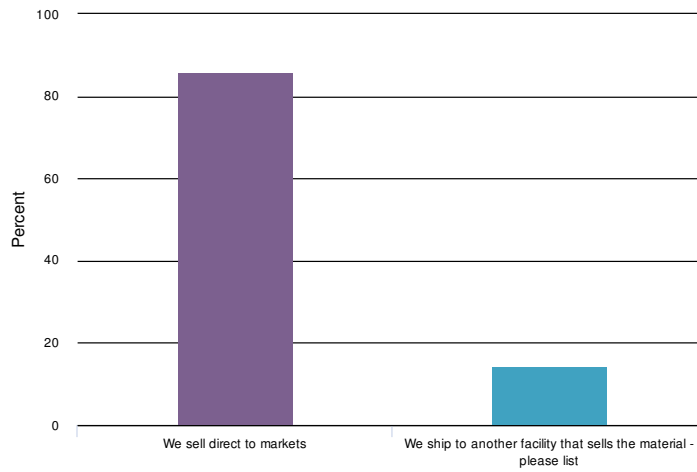
Value	Percent	Responses
Yes (provide description of collection services)	85.7%	6
No (explain how materials get to the facility)	14.3%	1
		Totals: 7

28. Do you know of other entities collecting recyclables in your area?



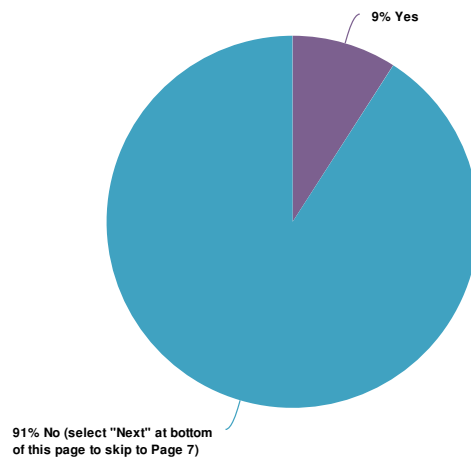
Value	Percent	Responses
No	12.5%	1
Yes (provide information about them)	87.5%	7
		Totals: 8

29. Please select all that apply to your facility.



Value	Percent	Responses
We sell direct to markets	85.7%	6
We ship to another facility that sells the material - please list	14.3%	1

30. Does your entity own or operate a compost facility?



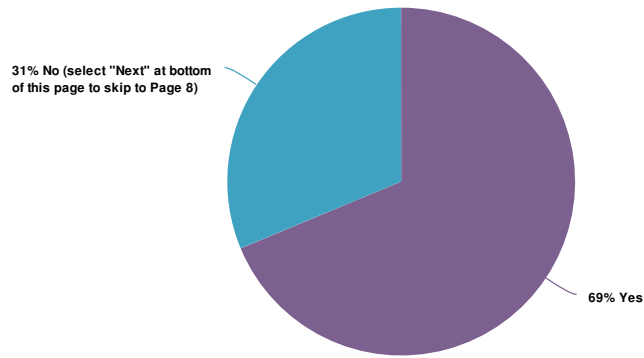
Value	Percent	Responses
Yes	9.1%	1
No (select "Next" at bottom of this page to skip to Page 7)	90.9%	10

Totals: 11

31. What types of materials are composted at your facility and where did they originate?

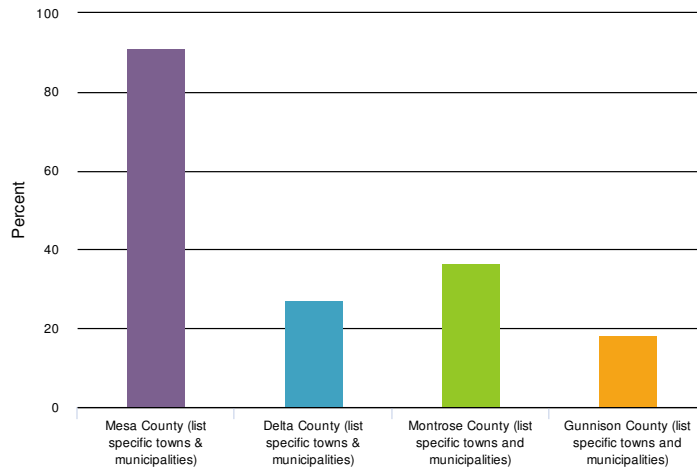
ResponseID	Response
27	green waste from residential lawn care, tree limbs, leaves, cull fruit from orchards, manure

32. Does your agency haul solid waste and/or recyclables?



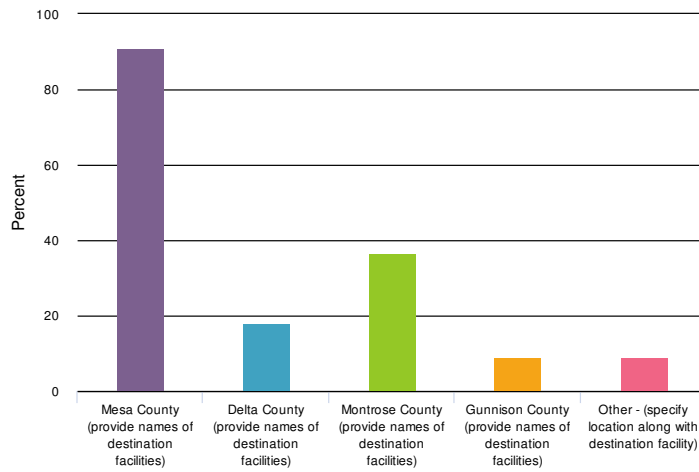
Value	Percent	Responses
Yes	68.8%	11
No (select "Next" at bottom of this page to skip to Page 8)	31.3%	5
		Totals: 16

33. Where do you collect your waste and/or recyclables?



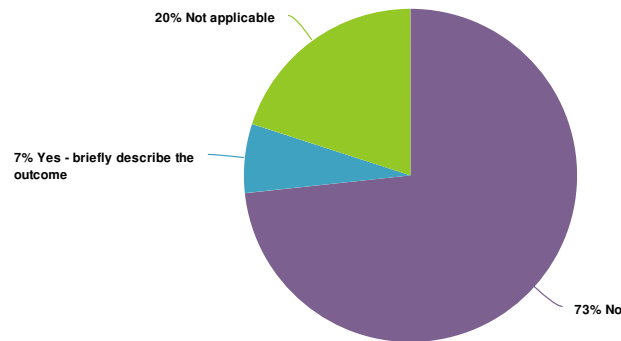
Value	Percent	Responses
Mesa County (list specific towns & municipalities)	90.9%	10
Delta County (list specific towns & municipalities)	27.3%	3
Montrose County (list specific towns and municipalities)	36.4%	4
Gunnison County (list specific towns and municipalities)	18.2%	2

34. Where do you haul your waste and/or recyclables?



Value	Percent	Responses
Mesa County (provide names of destination facilities)	90.9%	10
Delta County (provide names of destination facilities)	18.2%	2
Montrose County (provide names of destination facilities)	36.4%	4
Gunnison County (provide names of destination facilities)	9.1%	1
Other - (specify location along with destination facility)	9.1%	1

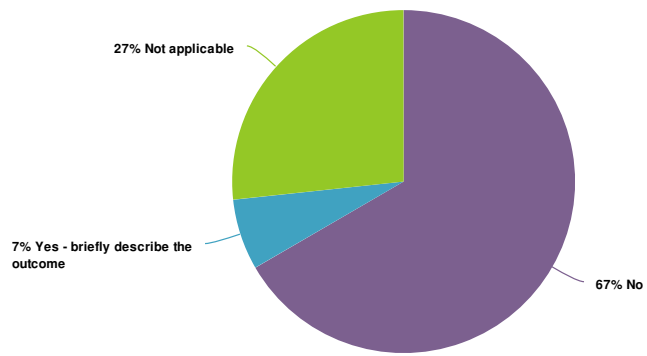
35. Have you or your agency participated in any regionalization efforts for solid waste, diversion, or recycling?



Value	Percent	Responses
No	73.3%	11
Yes - briefly describe the outcome	6.7%	1
Not applicable	20.0%	3

Totals: 15

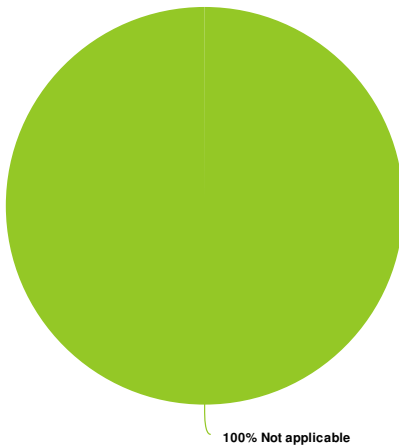
36. Have you or your agency participated in any regionalization efforts not related to solid waste, diversion, or recycling?



Value	Percent	Responses
No	66.7%	10
Yes - briefly describe the outcome	6.7%	1
Not applicable	26.7%	4

Totals: 15

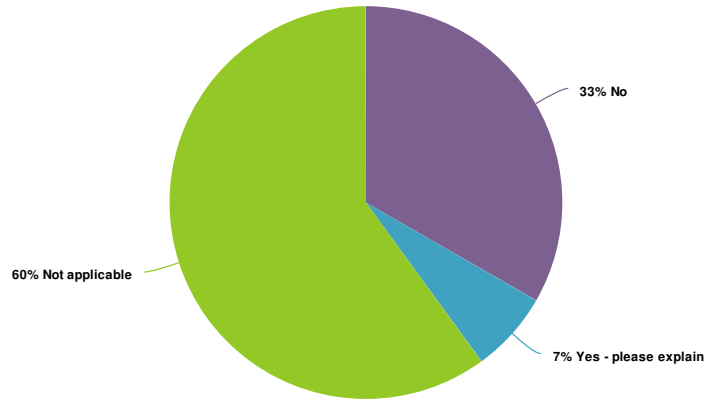
37. If you or your agency has participated in regionalization efforts, did you think it was worthwhile?



Value	Percent	Responses
Not applicable	100.0%	15

Totals: 15

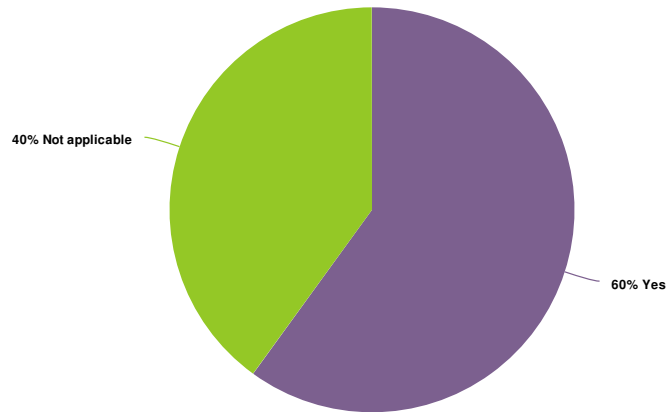
38. Does your agency currently have any specific plans for regionalization?



Value	Percent	Responses
No	33.3%	5
Yes - please explain	6.7%	1
Not applicable	60.0%	9

Totals: 15

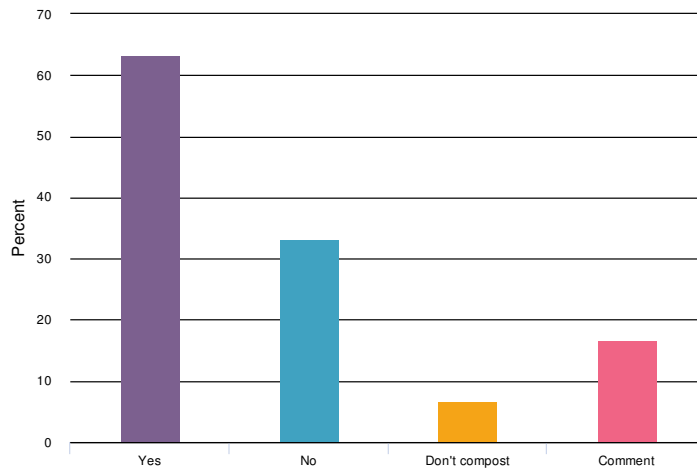
39. Would your agency be willing to consider recommendations for regionalization?



Value	Percent	Responses
Yes	60.0%	9
Not applicable	40.0%	6

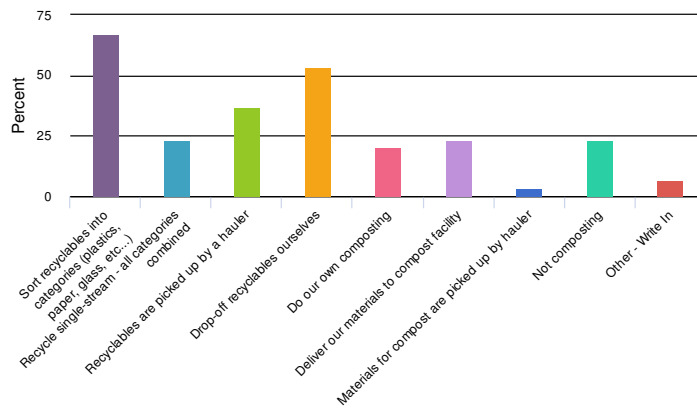
Totals: 15

40. Do you feel that your options for recycling and composting are convenient enough?



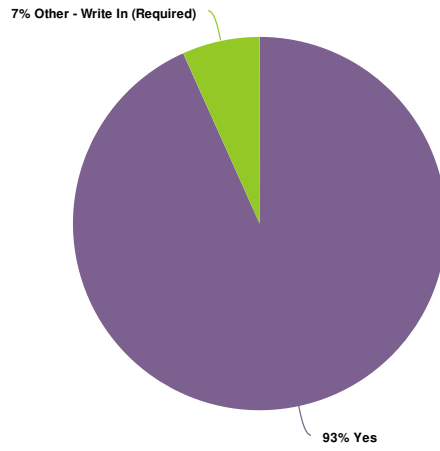
Value	Percent	Responses
Yes	63.3%	19
No	33.3%	10
Don't compost	6.7%	2
Comment	16.7%	5

41. Please select all options below that describe how you recycle and/or compost.



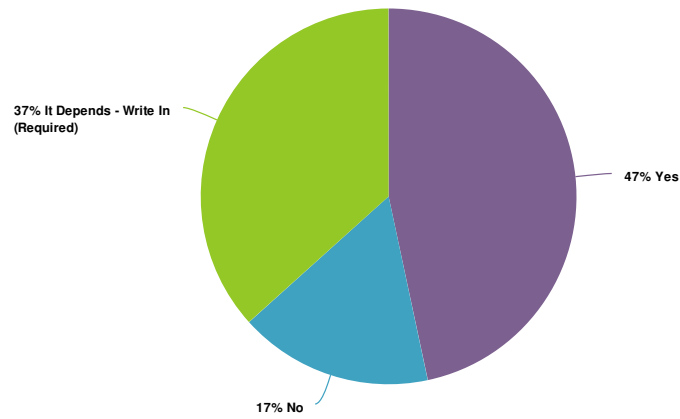
Value	Percent	Responses
Sort recyclables into categories (plastics, paper, glass, etc...)	66.7%	20
Recycle single-stream - all categories combined	23.3%	7
Recyclables are picked up by a hauler	36.7%	11
Drop-off recyclables ourselves	53.3%	16
Do our own composting	20.0%	6
Deliver our materials to compost facility	23.3%	7
Materials for compost are picked up by hauler	3.3%	1
Not composting	23.3%	7
Other - Write In	6.7%	2

42. Would you like to see more materials recycled, composted, and diverted from landfills?



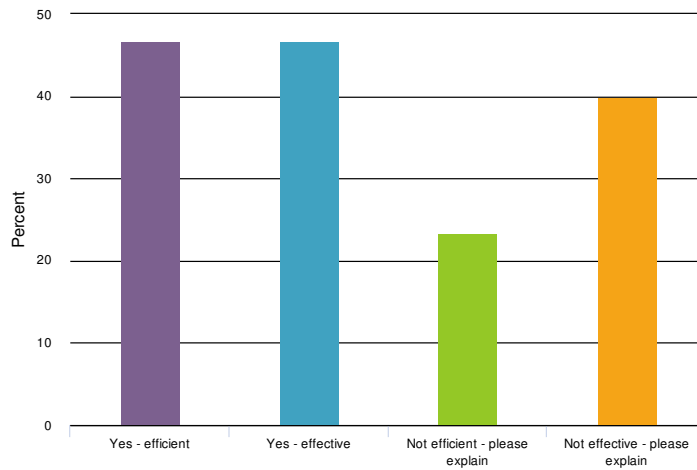
Value	Percent	Responses
Yes	93.3%	28
Other - Write In (Required)	6.7%	2
Totals: 30		

43. Would you be willing to pay more for waste diversion, recycling, and/or composting?



Value	Percent	Responses
Yes	46.7%	14
No	16.7%	5
It Depends - Write In (Required)	36.7%	11
Totals: 30		

44. Do you think that your recycling and compost options are efficient and effective? (Check all that apply)



Value	Percent	Responses
Yes - efficient	46.7%	14
Yes - effective	46.7%	14
Not efficient - please explain	23.3%	7
Not effective - please explain	40.0%	12

45. Are there any local perceptions regarding recycling, composting, or waste diversion that the study should consider?

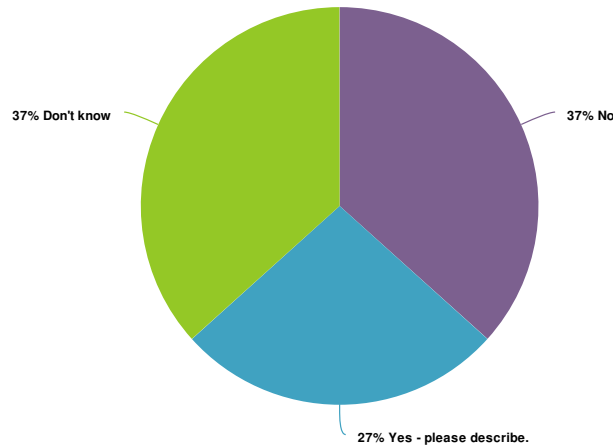
ResponseID Response

1	More restaurants and food production facilities could be doing a much better job of recycling and composting, but with the already complex business of handling waste it seems like most businesses are looking for the easiest possible solutions for waste disposal. A lot of business owners and managers find the idea of composting and recycling too complicated.
2	Yes. Habits die hard. Too easy to throw into the garbage and have it magically 'vanish'. Municipalities have always pushed "throw and bury" because it makes money. That perception and attitude needs to change.
3	Costs too much already, not enough free local options. Negative news articles which indicate limited or no options for plastics recycling.
4	Asphalt debris and shingles should be considered as well as concrete. The concrete would need to be free of rebar to be considered a recyclable material.
5	/
6	People believe the commodities are valuable and recycling should be free.
7	that everything goes in the bin!
8	I believe more businesses need educated on their impact on the local landfill
10	Recycling is being impacted heavily by the China initiatives and recycling in rural areas could be at risk with increasing collection and processing fees.
11	Why does everybody think it should be free?
12	none
13	Biosolids were composted at one time and it would be good to look into this again.
14	The community needs more education on recycling
16	People who don't recycle aren't educated about it and in Mesa County it's made into a partisan issue. Saving money by keeping stuff out of the landfill, helping our environment for industries we support, and creating compost for a desert environment might make sense to them.
17	Most want the service for free
18	I don't know.
20	There seems to be a perception that the benefits are not worth the "inconvenience" from a lack of understanding of the impacts of failing to make even a minimal effort.
21	Programs and ordinances that force compliance. It should not be permissible for laziness and lack of responsibility to be afforded an ease of ability by allowing the landfilling of recyclable materials.

ResponseID Response

22	There needs to be a large awareness and educational campaign to get the attention of all areas of the valley. There was an over abundance of recycling material that could have been taken to any of the centers. Unfortunately people are either lazy or uneducated and have no idea that our world is being consumed by garbage.
23	Lack of Education on recycling. I get asked at Suplizio Field and Stocker Stadium about recycling containers. The few years that the containers were out we had just as much trash as recyclables going into the recycle bins. The composting seems to be working really well, maybe some additional drop locations would make it easier for more folks to participate in this program.
24	?? I don't know.
25	Consider the yard waste the is being thrown out with regular trash. Many on my block that I have causally talked with are unaware of the available recycling options.
26	How do we engage other businesses in the community so our impact would be greater
27	Concern that landfill bans will lead to more illegal dumping in the desert
28	We are a small isolated mountain town with limited resources and limited ability to recycle "hard to recycle" materials. How can we tap into a larger market with more options?
29	Unknown.
31	The study should consider the cost and size of residential garbage collection. There is no incentive to recycle or compost if you can just throw everything into a large very cheap garbage can. And certainly there is no incentive to recycle or compost if you charge more for that on top of the cheap garbage collection charge. Why would people be motivated to recycle or compost if it costs more that their current garbage collection fee?
32	Many Delta County residents still burn their waste in spite of the fact that it is illegal. The local landfill is not even close to filling up, and its location makes it appear that it will go on indefinitely. Many of the long time residents see recycling as a 'new-age' 'tree-hugging' fad & either ignore the effort or resist it. We also fight the perception that recycling should be "free", as many of the newer residents have come from areas where there is no visible cost on their bill for recycling service or have utilized free drop-off locations. Others know that the recycling material is sold, and think they should be paid for bringing in the material.
33	Not sure!
36	All of them

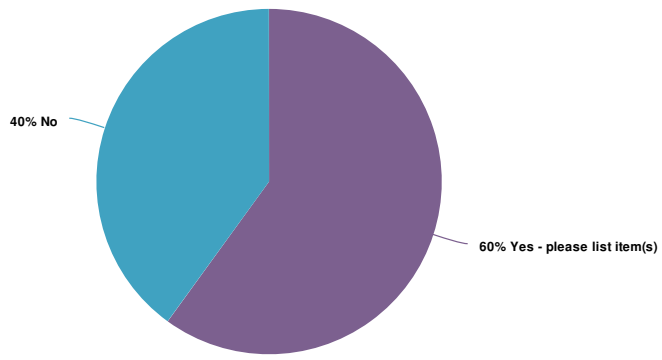
46. Are there any policies or ordinances that apply to waste management or recycling in your region?



Value	Percent	Responses
No	36.7%	11
Yes - please describe.	26.7%	8
Don't know	36.7%	11

Totals: 30

47. Do you have any materials that you would like to recycle, but currently cannot?



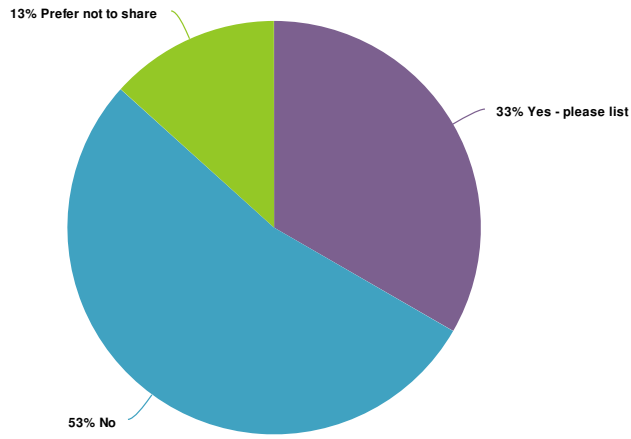
Value	Percent	Responses
Yes - please list item(s)	60.0%	18
No	40.0%	12
Totals:		30

48. What do you feel your (or your agency's) role is in recycling and waste diversion?

ResponseID Response

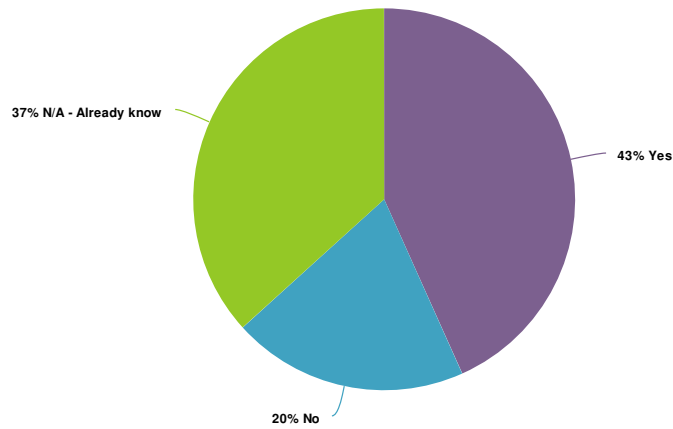
1	We are trying our best to make really conscious choices about purchasing first so that we have less waste to begin with. After that, we feel it's our responsibility to contribute as little waste to the landfills as possible. We want to be a model for other businesses in the community and, eventually, work with as close to a zero waste program as we can.
2	I'm from the community - we need to all envision a community that brings in ideas for change and collectively lead in that direction. Municipality and county need to be active leaders in this.
3	Maintain current residential recycling but help increase employers recycling options through state/federal grants.
4	United Companies recycles asphalt materials and concrete materials. In many instances excavated materials can be brought to our facility for disposal.
5	Our role is to educate the public on the proper way to recycle while helping them understand the necessity behind it.
6	.
7	to effectively process and market recyclable material
8	Reynolds Polymer is part of the environmental leadership program, and we do all we can to reduce our carbon foot print
10	We believe our Transload Facility for Single-Stream Recycling will help boost participation by making recycle setout for the customer easier
11	We are a hauler of both waste & recycling. Anywhere we can be greener and save resources is a win for everybody.
12	To provide staff with a means to recycle and to collect the recycling and put in container for pick up by contracted hauler.
13	We need to keep recycle to save room in the landfill, we are willing to work with the Mesa County Landfill to keep the Biosolids out of the face of the landfill.
14	We are a metal recycler, we purchase recyclables from commercial accounts and the general public.
16	I am a member of many progressive organizations and we would like to see recycling and composting as part of a future circular economy here. Also I work at a senior retirement community and we recently plugged in recycling and it's being very well received.
17	Regional composting facility
18	Gunnison County has taken the lead in recycling in the Gunnison Valley and has done a good job to promote recycling in the community.
20	We are working on improving outreach among employees, and to make it as easy as possible.
21	Providing for ability for recycling. Enacting policies, guidelines, information and legislation that elicits compliance.
22	To encourage and minimize the amount of valuable commodities ending up in the landfill. Would love to see a OCC ban such as Colorado Springs and/or mandatory recycling.
23	We recycle what we can after large events at Suplizio Field, Stocker Stadium and Canyon View Park.
24	We recycle what we can off our job sites - asphalt, concrete - and always take scrap metal to the metal recyclers. We would take more trees, etc. to compost, but it's tough in a dump truck load of material to make sure there's no roots at all in the load. Compost is very strict on what it takes. The landfill could take a look at what their shredder can actually take; roots do not seem to me to be something that can't be recycled.
25	As a citizen, I feel it is everyone's responsibility to recycle as much as possible.
26	To help the landfill be utilized for fewer things and cut costs by the number of pick-ups for trash and tonnage.
27	Diversion
28	We provide recycling, composting, and waste diversion options for our on-campus residents, students, faculty, and staff. This includes convenient recycling bins, recycling hauling to the county recycling station, dining hall composting, and Waste Management dumpsters.
29	Education and public information.
31	There should be more emphasis on recycling and yard waste composting as a way to reduce what goes to the current landfill. The cost for a new land fill will cost per person at least triple what it costs now. New regulations since the existing landfill was built will require far more effort in monitoring and encapsulation than the current landfill.
32	We are the first fully functioning recycle center in the area. We do our best to offer a centrally located drop-off facility at a low cost to our county residents. We have put on educational programs & offer tours to local schools as well as outreach programs to local groups.
33	We are a large generator of refuse which could be recycled but we need a coordinated effort with vendors to collect our recyclables.
36	To provide that option

49. Do you know how much you are recycling or composting annually?



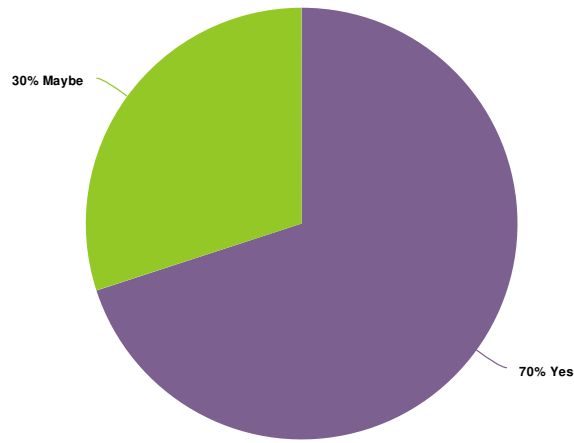
Value	Percent	Responses
Yes - please list	33.3%	10
No	53.3%	16
Prefer not to share	13.3%	4
Totals: 30		

50. Would you like to know how much you are recycling, composting, or diverting from landfills annually?



Value	Percent	Responses
Yes	43.3%	13
No	20.0%	6
N/A - Already know	36.7%	11
Totals: 30		

51. Are you, or your agency, willing to consider implementing the recommendations that result from this study? (Your response does not obligate you to anything.)



Value	Percent	Responses
Yes	70.0%	21
Maybe	30.0%	9
		Totals: 30

52. Please use this space to explain your interest in the waste diversion study if it's not already covered by responses to previous questions.

ResponseID Response

2	This is an issue I care deeply about and look forward to having the conversation move to higher levels of legislation and community action
3	Material sorting at landfill if needed
4	At United we feel there is a lot of material, asphalt, concrete and landscape waste, that could be a potential source for recyclable materials.
5	I believe this study will be most valuable as an educational tool to hopefully increase diversion rates. I hope to see the current offerings expand to include materials that are not currently considered recyclable in our region.
13	I am responding for the Wastewater division only
16	Finding out the most viable options for 100% recycling here and helping communicate and promote recycling on the governmental, institutional, business and residential levels...
17	We would like to know how much compostable material is available in the region.
20	We recycle a lot of materials, but it's been a challenge to get employees to understand that the efforts to segregate both work-related waste and break-room area wastes are worthwhile.
21	My focus is from the perspective of a residential waste generator. My concern is the lack of regulation(s) that either discourage the production or use of packaging or other consumer obtained materials that are not recyclable, or that compel compliance with recycling those materials that are. I see waste containers on the residential side every pickup day that are filled with easily identified and recyclable materials. How about a program where each pickup day, an inspector picks a residence at random, does a trash can materials deposited assessment and if no recyclable material is found, then that residence gets one month's pickup fee waived. If there ARE recyclable materials then they are notified that they were picked in the lottery but unfortunately were not entitled to the waiver since they were found to be landfilling recyclables.
22	I was fortunate enough to participate in this event although it was a bit disheartening to witness all the recyclable material being sent to the landfill. Public awareness is vital along with education. I look forward to the findings of this study and hopefully action being taken with legislative measures.
23	I would like to see if we can increase the education in our community about recycling. We have lots of events that could benefit from a more proactive approach to recycling. This starts from the vendor who is selling the products, the consumer making sure they recycle properly, and then us disposing or recycling of what is collected.
24	I was asked to participate.
25	I just feel that we all need to participate, whether a single citizen, small company or large corporation, we all play a part.
28	My main interest is finding larger markets for small isolated mountain towns to be able to recycle those "hard to recycle" items/materials because we just don't have the resources or infrastructure.
31	I think item 12 mostly covers it. I prefer to be proactive with recycling and composting and feel that the word is not getting out to people because the cost to throw everything away is too little at the moment.
33	We have over twenty thousand students, three thousand employees at forty locations. The volume of plastic drinking bottles is extensive with no place for them to go. We have plenty of items we could recycle but we need a vendor to collect from our sites.