Resource Conservation

A division of Administrative Services

Boulder County Hazardous Materials Management Facility • 1901 63rd Street • Boulder, Colorado 80301
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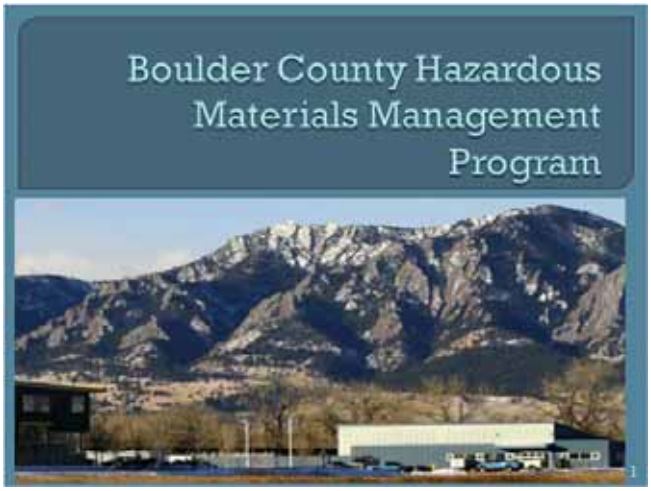
January 22, 2014

MEMORANDUM

To: Board of County Commissioners

From: Hilary Collins, Sustainability Policy Analyst
Shelly Fuller, Senior Hazardous Materials Specialist

Subject: Review and Update on the Boulder County Hazardous Materials Management Program



Introduction

This memo provides information on a successful and long-standing program that serves Boulder and Broomfield counties, and the Town of Erie. It discusses the program's intergovernmental collaboration and presents the key features of a new five-year intergovernmental agreement (IGA) that the Board of County Commissioners will be asked to sign on January 30, 2014. The memo also provides an overview of program services, discusses how collected wastes are managed, and presents highlights of the Hazardous Materials Management Facility (the HMMF).

Intergovernmental Collaboration

The Hazardous Materials Management (HMM) Program is the result of a long-term, successful collaboration between Boulder County, Boulder, Broomfield, Erie, Lafayette, Longmont, Louisville, and Superior. The first IGA for the program was signed in 1991. Subsequent multi-year IGAs have guided the program for the past 22 years.

On January 30, 2014 the Board of County Commissioners will be asked to sign a new five-year IGA for the period 2014 to 2018. The key features of the new IGA are:

- Clarifies that the HMM Committee acts by consensus and provides guidance to the program
- Introduces a new 5% community fund, and a new 10% business surcharge, to set aside funding for future equipment and facility needs.

- Simplifies budget projections and approvals
- Changes the program year, from December to November, to the calendar year, January to December
- Maintains the existing 20-year restrictive covenant

To date, Jamestown, Lyons, Nederland, and Ward have not been party to the IGAs referred to above. However, at this time, both Nederland and Lyons have expressed interest in joining the IGA and beginning to contribute to program expenses. If these communities do join, this will be through a companion IGA, so that the IGA to be signed on January 30, 2014 does not have to be revised.

Hazardous Materials Management Program Overview

Residential Service

Under the terms of the IGA, Boulder County staffs and operates a permanent collection facility in Boulder where residents can safely drop off household hazardous wastes for free. Household hazardous wastes include paints, stains and other home improvement products; a wide variety of cleaners; automotive products; hobby products; pool and spa chemicals; and lawn and garden products. The facility is open year-round, Wednesday through Saturday, from 8:30 am to 4:00 p.m. A database is used to track usage by address and community, and each community is billed quarterly for facility use by its residents. Over 13,700 household visits occurred in 2013. The average weight of waste dropped-off per visit is 83 pounds. In 2014 total program expenditures are projected to be $580,000, or around $43 per household visit.

Residential Events

The program works with Broomfield, Longmont, and Superior to hold one-day, annual or semi-annual, collection events for their residents. Boulder County provides staff and contractors. The events serve from 60 to 400 vehicles, and are fully-funded by the host community. In 2014, two or three additional collection events are planned for mountain communities funded by a USDA grant. 873 households were served by events in 2013, representing approximately six percent of overall residential participation.

Business Service

The business service began in 2011 and serves a previously unmet need of the business community. It offers competitive pricing for drop-off, or collection, of hazardous wastes to eligible businesses. Eligible businesses generate small amounts of hazardous wastes, and are defined by the State of Colorado as “conditionally-exempt small quantity generators” (CESQGs).

Businesses pay fees to cover the cost of waste management, additional county staff time if applicable, and three surcharges to offset: 1) operational overhead, 2) future equipment and facility needs, and 3) to pay back a portion of construction costs. The surcharges are calculated based on the waste management cost. The operations surcharge is 30% of the waste management cost. The equipment and facility surcharge, and the constructions surcharge, are 10% and 40% respectively. The program’s intergovernmental partners do not pay any surcharges when they use the business service.

There are four types of business customer:

1. Small businesses with small amount of low hazard wastes such as churches, non-profits, etc. These customers are served by appointment or walk-in, and often pay the minimum charge of $20 which includes surcharges.

2. Businesses with larger amounts, or higher hazard wastes. These businesses are required to use appointment service and provide paperwork ahead of time. The amounts paid per visit range from about $50 to $2,000. Fees cover waste management and include all surcharges.

3. Businesses such as school districts, private schools, with large amounts of different types of wastes. For these customers, Boulder County's contractor provides on-site segregation services and transports the waste to the HMMF. Fees cover waste management and include all surcharges.

4. Businesses that need larger quantities of waste packed and/or collected. For these customers, Boulder County's contractor provides on-site services and ships waste directly to disposal facilities. Fees cover waste management costs and only the program operating surcharge.

In 2013, 171 businesses were served, 45,990 pounds (23 tons) of waste were collected, and total revenues of $39,500 were received by the county. Types of businesses served include churches, schools and school districts, municipalities, retail and manufacturing, research and development, etc.

Disaster Recovery

Following the September 2013 flood, the HMM program helped with recovery in two ways. The HMMF accepted over 28,000 pounds (14 tons) of orphan hazardous waste collected in flood-affected areas by the US EPA. The facility also added additional collection days and served an additional 1,235 customers in the weeks immediately after the flood. The total cost of these efforts was over $73,000.

Product Reuse

Many products collected by the HMMF are in good condition and suitable for reuse. These products are placed on the facility's reuse shelves and offered to residents and businesses free of charge. This approach eliminates recycling and disposal costs for the program, and makes sense because products are used for their intended purpose. No high-hazard products, including those containing pesticides, herbicides, insecticides, or fungicides are given away. In 2013, over 5,800 customers visited the HMMF to pick up over 173,000 pounds (86.5 tons) of reusable products.

Outreach and Education

Boulder County also works with its partners to promote and educate residents and businesses about the program. Each community has generally done its own outreach, linking to the county's website, and using materials developed by the county including the HMM brochure, business cards, and green cleaning poster. In 2014 the program will begin a more comprehensive and collaborative educational outreach program. Its main focus will be to reduce the toxicity of products purchased in line with the goals of the Sustainability Plan, Zero Waste Element.

Waste Management

At the HMMF, county staff members handle over 80 different waste streams. The basic categories of waste handled are: acids, aerosols, asbestos roof tar, bases, batteries, compressed gas, flammable liquids and solids, fluorescent tubes and CFLs, halogenated solvents, latex and oil-based paints, mercury, oxidizers, PCB and non-PCB ballasts, poisons and pesticides, photo chemicals, and reactive chemicals.

The household and business wastes collected at HMMF are handled in a variety of ways. Some are given away for reuse. Many are recycled, including antifreeze, several types of batteries, cooking oil, CFLs, fluorescent tubes, motor oil, oil filters, and latex paint. The program also recycles large quantities of cardboard and empty metal containers. Recycling either generates revenue for the HMM program, or collection services are provided at no cost, or for a fee. In 2013 lead-acid battery and motor oil recycling generated over $13,000 in revenues for the program, and in total, over 140 tons of materials were recycled.

Wastes that cannot be recycled are collected by the program's hazardous waste contractor, Clean Harbors, and sent out-of-state for incineration (solvents, oil based paints), energy recovery (flammable liquids) and cylinder management. Regular trash (mostly empty containers) is sent for regular landfill disposal. Water-based cleaners and non-recyclable latex paint wastes are sent for solidification and landfill disposal.

In 2012 the total amount of waste handled by the HMMF and the community collection events topped one million pounds (500 tons) for the first time. In 2013 over 1.2 million pounds (611 tons) of waste were handled. The percentage breakdown for waste management in 2013 was as follows:

Reuse	14.2%
Recycling	23.3 %
Incineration	5.4%
Energy Recovery	7.9%
Landfill	49.2%

Hazardous Materials Management Facility (HMMF)

The HMMF opened in April 2011, following several years of design and development. The facility was needed to replace a small and inadequate facility that was operated at the Western Disposal Services Waste Transfer Station in Boulder for many years.

HMMF Highlights:

- **Size:** 6,438-square-foot building and 8,000-square-foot yard
- **Construction Cost:** $2.5 million, funded by recycling sales and use tax funds, community contributions, and business surcharges
- **Staffing:** Nine county employees (full-time, part-time, and hourly) plus one volunteer
- **Customer Service:** Offers convenient residential waste drop-off, and reusable product shopping, Wednesday through Saturday, 8:30 a.m. to 4:00 p.m. Businesses are generally served by appointment, mainly on Tuesdays
- **Main features:** Indoor receiving area; office/break room; public and staff restrooms; laundry; product reuse shelves; areas for segregation and packing; oil and antifreeze pumping system; separate flammable bulking and storage room; other storage areas, including outdoor storage utilizing buildings from previous facility.
- **Energy Efficiency and Safety:** Use of natural light; evaporative cooling and heat recovery systems; enhanced ventilation; safety showers; air monitoring and alarm system; air powered tools; supplied breathing air respirators; and a lab hood for testing unknowns. The use of a forklift for lifting and moving waste improves ergonomics for staff

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Boulder County Recycling Center • 1901 63rd Street • Boulder, Colorado 80301

DRAFT MEMORANDUM

Date: February 26, 2014
To: Board of County Commissioners
From: Resource Conservation Advisory Board
Re: Annual RCAB Report for 2013

The Boulder County Resource Conservation Advisory Board (RCAB) has been asked by the Board of County Commissioners to present an annual report on RCAB endeavors and successes. The bylaws recommend the RCAB undertake a number of tasks each year, including, but not limited to:

- Reducing the amount and toxicity of waste generated in the county;
- Researching, reviewing and recommending changes in policy related to waste reduction, reuse, recycling and composting;
- Providing input on the development and management of facilities and programs;
- Advising the Board of County Commissioners on matters affecting facilities and programs funded using revenues generated by the former Boulder County Recycling Sales Tax, including
    - operation and maintenance of the Boulder County Recycling Center (BCRC),
    - the construction, operation and maintenance of composting facilities and equipment,
    - the expansion of the household hazardous waste facility (HMMF);
- Reviewing and making recommendations on county-funded waste diversion programs and activities, as requested by the BOCC; and
- Communicating information between the communities members represent and the Advisory Board.

In 2013, the RCAB undertook many of these initiatives, with these few exceptions: Board members did not specifically provide input on the management of facilities and programs, including the BCRC and HMMF. Neither was there opportunity to comment on composting facilities and equipment, since this infrastructure is currently privately owned and operated.

The remaining initiatives are summarized below.

<u>Reducing the amount and toxicity of waste generated in the county</u>

RCAB made no toxicity recommendations in 2014. Board members contributed to a study of waste diversion and determined a 35% rate through recycling, composting and construction and demolition reuse / recycling. This figure indicates no overall progress towards zero waste since the Zero Waste Action Plan was completed in 2010.

Researching / reviewing and recommending Zero Waste policy changes

The board received updates on a variety of Zero Waste programs in 2013, including:

- Quarterly education program planning was proposed (January /June) and a subcommittee meeting held in February – only electronics education was completed in 2013
- Electronics ban education update (January)
- 2012 Zero Waste Funding Reports (January) – reports have subsequently been removed from the Resource Conservation website
- Operations update (February / April) – Consensus: additional tons must be sourced and processed.
- Mid-Level Compost Use Update (March)
- Western Disposal "Diversion Challenge" (March)
- Windchime Productions education program (March)
- C & D flyer review (April) – RCAB made formatting recommendations.
- Eco-Cycle "I Choose to Reuse" program summary (April)
- HMMF Update (May)
- Spring Cleanup Update (May) – RCAB discussed the cost of these events but made no recommendations.
- RCAB discussed diversion measures (June) – members asked to hear from the State on their measurement criteria.
- Permaculture principles (July) – RCAB discussed private commitments and made no recommendations.
- 2012 Diversion reporting updates (July) – these reports were completed later in the year but, due to the September floods, were not fully reported until 2014.
- Construction and Demolition (C & D) – Community & county policy updates (July and November) – RCAB discussed enforcement and made two recommendations:
    - That a Request for Proposals be developed for Boulder County Land Use to allow for Construction and Demolition plans for BuildSmart projects (to enhance education, enforcement and evaluation)
    - That an Intergovernmental Agreement (IGA) be explored to created complementary education and enforcement provisions in all Boulder County jurisdictions
- Polypropylene recycling opportunities (November)

DRAFT

Reviewing and making recommendations on programs and activities, as requested by the BOCC

Though the BOCC did not ask for any specific review nor recommendations in 2013, members set their agendas with the assumption the BOCC would like RCAB to review and comment on Zero Waste Action Plan (Plan) recommendations. The construction and demolition recommendations mentioned above support C & D recommendations in the Plan. The quarterly education meeting goals are intended to similarly support Plan recommendations: These meetings might be supplanted in 2014 by staff actions.

RCAB also makes an annual recommendation to the BOCC on expenditures of $50,000 worth of Zero Waste Program grants, budgeted by the Resource Conservation Division. Recommendations for the 2013 funding cycle were provided in late 2012 and discussed at the January 2013 meeting. A member subcommittee evaluated 2014 applications in December for presentation to the BOCC in 2014.

Communicating information between the communities members represent and the Advisory Board.

RCAB members shared updates from their various communities at each meeting. In an effort to guarantee a two-way flow of information, a “take-home for councils” message was initiated in 2013. RCAB currently does not measure whether take-home messages are shared with stakeholders.

DRAFT

RCAB – Zero Waste Update February 2014

Action Item for Councils: In anticipation of Boulder County's sustainability funding proposal, it's time to think about what you would want to see in sustainability / zero waste in your communities. Work with Hilary and Lisa to schedule a presentation for your board or advisory board and plan to bring recommendations back to RCAB.

Sadly, there are no updates on the **Construction RFP or IGA** this month. The Paint Bill in the state legislature, however, is moving forward. It was due to be heard by the state senate appropriations committee Feb. 21. Feel free to ask for the latest news during the RCAB meeting or go to CAFR.org and check the "Legislative Updates" link.

The **USDN Commercial tool** that Boulder County helped support is finished and posted to http://www.denvergov.org/environmentalhealth/EnvironmentalHealth/EnvironmentalQuality/CommercialWasteReduction/tabid/445104/Default.aspx Sometime soon, set aside 45 minutes or so to click on "commercial pick," answer the questions that pertain to your community and review ideas that are tailored to your situation. You'll find the tool will recommend approaches that similar communities have found successful. Some RCAB communities have begun to look at reporting or collection recommendations as well as suggestions about cardboard bans, etc.

Keep America Beautiful has initiated a **"Map Your Bin" project** for public recycling bins: http://americarecyclesday.org/mapthisbin Boulder County is likely to ask for volunteer help to map recycling containers on our property. Are any other RCAB members interested in this project? Can we cooperatively work with volunteers on this effort?

INTERGOVERNMENTAL AGREEMENT
ESTABLISHING BOULDER COUNTY AS THE SUCCESSOR ENTITY
TO THE BOULDER COUNTY RECYCLING AND COMPOSTING AUTHORITY

THIS AGREEMENT made and entered into this _____ day of _____, 2001, by and between the Board of Commissioners of BOULDER COUNTY, State of Colorado, a body corporate and politic, the CITIES OF BOULDER, BROOMFIELD, ERIE, LAFAYETTE, LONGMONT AND LOUISVILLE, and the TOWNS OF LYONS, JAMESTOWN, NEDERLAND and SUPERIOR, each a municipal corporation (the parties may be referred to hereinafter individually as "party" or jointly as "parties"), and each a member of the Boulder County Recycling and Composting Authority ("BCRCA"), established by Intergovernmental Agreement dated April 20, 1995, pursuant to Sec. 29-1-203, C.R.S.

WITNESSETH:

WHEREAS, the parties are authorized to enter into this agreement pursuant to Sec. 29-1-201, et. seq., C.R.S.; and

WHEREAS, BCRCA was established by Intergovernmental Agreement dated April 20, 1995 (hereafter "1995 Agreement"), for the purposes set forth in that Agreement, which purposes have been pursued diligently since that time; and

WHEREAS, the 1995 Agreement provides at Section IV that it shall terminate automatically on December 31, 2001, or that it may be terminated prior to then by agreement of the parties; that a successor public entity may carry on the activities of BCRCA and assume its obligations; and that in the event of a successor public entity, BCRCA assets and funds, including any interest earned on deposits, remaining upon termination of BCRCA and after payment of all obligations shall be transferred to the successor public entity; and

WHEREAS, the parties are entering this Intergovernmental Agreement in order to formally terminate the 1995 Agreement and establish Boulder County as BCRCA's successor public entity.

NOW, THEREFORE, in consideration of the mutual covenants and commitments made herein, the parties agree as follows:

1. BCRCA shall be terminated upon signature of all the parties hereto, and Boulder County shall become the successor public entity contemplated in Section IV of the 1995 Agreement.

2. All the revenues generated by the Recycling Tax, and all assets purchased with revenues from the Recycling Tax, must be used for the purposes outlined in the Boulder County ballot issue passed in November, 1994, and in Boulder County Resolution No. 94-162 which referred that issue to the ballot. Authorized uses of the Recycling Tax Fund include but are not limited to:

- A reserve fund in the amount of $5.2 million ($5,200,000) to cover equipment replacement and building refurbishment, unforeseen circumstances in materials markets, or for such emergency situations as may arise.
- Completing construction of the Recycling Processing Center
- Operation and maintenance of the Recycling Processing Center and equipment
- Construction, operation and maintenance of composting facilities and equipment, and expansion of the household hazardous waste facility and such other facilities and/or operations as are deemed by the Board of County Commissioners to be fiscally prudent and to further the goals of the 1995 Agreement. Such decisions shall be made after input and recommendations from the BCRCA Advisory Committee have been made.
- Employment of necessary staff

3. An Advisory Committee will be formed following execution of this Agreement to provide input and recommendations to Boulder County on matters affecting the facilities. The Committee will include one appointed representative from each of the cities and towns in the county and from the unincorporated county, plus one from the City and County of Broomfield. Boulder County will appoint five additional at-large members to reflect the population distribution throughout the county. Each appointing entity will determine whether its member will be a staff member, citizen or elected official.

4. By this Agreement, Boulder County agrees to own and maintain the Recycling Processing Center ("RPC"). Should Boulder County desire to sell the RPC, such decision shall first be affirmed by a majority affirmative vote of the town boards or councils who are parties to this Agreement, In tallying the vote on the issue of sale of the RPC, each city council, town board or city/county shall cast a weighted vote based on the population of their jurisdiction, and the Board of County Commissioners of Boulder County will cast the vote for the unincorporated population. In the event of the sale of the RPC, the value of the assets sold shall be divided between the jurisdictions which are party to this Agreement in proportion to each of their contributions to the sales and use tax funds collected during

the term of the 1995 Agreement. These distributed funds may only be used for the purposes described in paragraph 2, above, except in the City and County of Broomfield which may use such funds for recycling efforts within its jurisdiction.

IN WITNESS THEREOF, each party signifies its approval of this intergovernmental agreement by signature below.

Town of Superior, Colorado

_____

Attest

_____

Sustainability Office

Street Address: 1325 Pearl Street 13th Boulder, Colorado 80302
PO Box 471, Boulder, CO 80306 • Tel: 303-441-4565

MEMO

Date: February 26, 2014
To: Resource Conservation Advisory Board (RCAB)
From: Hilary Collins, Sustainability Policy Analyst
Lisa Friend, Sustainability Planner
Re: Results of RCAB Survey

Summary of RCAB survey results:

As part of a recent transition in staffing for the RCAB, the Board of County Commissioners requested that RCAB members be polled regarding their thoughts about the advisory board. County staff created a survey that was answered by all 17 of the active RCAB members. (Erie has no member; Superior and Lafayette are undergoing changes in representation.)

Response percentages – and number of respondents – are summarized, below, for your information and to spark discussion. Questions 1 and 10 were excluded, as they documented the number of communities responding and "other thoughts," which were generally either email contacts or "thank you." All responses garnering 10 or more votes are highlighted in yellow:

Question 2: What do you think about the composition of RCAB? . . . Please check any answers that you agree with, and tell us more in the text box provided.

The current mix works well, no changes needed.	**12.50% 2**
Western Disposal Services should be given a designated seat	**31.25% 5**
Several new seats should be created for recycling/hauling representatives	**50% 8**
More seats are needed for business, and/or other interests such as federal agencies, hospitals, etc.	**25% 4**
The board would benefit from more elected officials being involved	**43.75% 7**

Question 3: How do you feel about the frequency, timing, duration, and location of RCAB meetings?

Frequency: too often	11.76% 2
Frequency: not often enough	0% 0
Frequency: just right	82.35% 14
Time of Day: too early	5.88% 1
Time of Day: too late	23.53% 4
Time of Day: just right	64.71% 11
Length: meetings too long	11.76% 2
Length: meetings too short	5.88% 1
Length: meetings just right	70.59% 12
Location: meetings at the recycle center preferred	47.06% 8
Location: meetings in downtown Boulder preferred	5.88% 1

Question 4: Please share your views on meeting attendance and participation in subcommittees (no one said they "struggled" to attend meetings or that they had no time for subcommittees).

RCAB members should attend monthly meetings regularly in person, or by phone.	82.35% 14
I strive to attend every meeting.	58.82% 10
I occasionally miss a meeting, but otherwise my attendance is good.	70.59% 12
Poor meeting attendance is an issue that needs to be addressed.	29.41% 5
Meeting attendance is not an issue at this time.	11.76% 2
I have served, or would like to serve, on a RCAB subcommittee	41.18% 7
Subcommittees work well and should be used when needed.	58.82% 10

Question 5: What do you think about the process used to select Chair and Vice Chair?

Choice of chair by random drawing is working	33.33% 5
Choice of chair by random drawing is not working	26.67% 4
Formal nomination and election of chair preferred	60% 9
Formal nomination and election of chair not preferred	6.67% 1

Question 6: What changes would you like to see in how RCAB conducts business?

Preplanned agendas with updates on zero waste and RCD, standing and special topics, and community reports is working well	47.06% 8
We are trying to cover too much with the preplanned agendas	11.76% 2
I would prefer to see more in-depth review and discussion on key topics	41.18% 7
The current structure is sound, but I would like more time devoted to special topics.	41.18% 7
Many of the reports could be provided in writing before the meeting to save time	70.59% 12
All presentations and information should be provided ahead of time whenever possible	64.71% 11
We should focus on topics that move zero waste forward and recommend action to the County	70.59% 12
We should focus on the infrastructure needed to advance zero waste	52.94% 9
We should focus on county-wide education and outreach to promote zero waste	52.94% 9
Meetings should be more action-orientated	58.82% 10
I really benefit from the community reports and hearing what other communities are doing	64.71% 11

Question 7: Because these responses were presented only in written form, staff created a spreadsheet to chart the input. Equal weight was given to each suggestion, rather than a first-choice vs. third-choice priority weighting. Some respondents made more than three recommendations, and some (such as C & D infrastructure) were marked in two locations:

Topic	Responses
Construction / Demolition	9
Commercial Diversion	5
Compost	5
Education	5
Zero Waste	4
Recycling Center Operation	3
Incentives / Assistance	3

Other	
Recycling Diversion	2
Assist Community Priorities	2
Jamestown Priorities	2
Policy Tools / Ordinances	2
Infrastructure	2
"Actions Taken" / Recommendations	2

One Vote Each:
Methane Capture Facility, Bio-Char Investigation, Markets, Multifamily Diversion, Municipal Collaboration

Question 8: Please provide information about the RCAB web page . . .

I frequently reference the RCAB page for meeting minutes, agendas and membership information	11.76% 2
I occasionally reference the RCAB web page	23.53% 4
I rarely or never reference the RCAB web page	64.71% 11
Additional information on the web page would be helpful	23.53% 4
Additional information on the web page would not be helpful	0% 0

Question 9: The annual survey of communities provides vital data about progress towards zero waste. However, we struggle to get timely responses and accurate information. Please share your thoughts on how RCAB can help improve annual survey results.

The current system works well, we just need to get communities to respond	66.67% 10
We should dedicate meeting time to have communities report in their diversion numbers	26.67% 4
The survey is too long; we need a more streamlined survey focused just on key information	26.67% 4
I need help generating the information needed to respond to the survey	26.67% 4

Leadership and Membership Questions

The Board of County Commissioners specifically requested that RCAB members be surveyed for their views about leadership and membership changes.

Historically, leadership has been selected by random drawing. Respondents were split on whether this model is "working." In future, more than half the members responding expressed a desire to see formal nomination and election of chair and vice chair. Formal nomination and election would require a change to RCAB bylaws, which could be proposed for the March meeting, when elections and bylaws are addressed each year.

As noted above, membership responses were mixed. Only two members are satisfied with the current make-up of Board representation, which includes five at-large members, one from each municipality in Boulder County and representatives from the county, Broomfield, CU, Eco-Cycle and the Center for Resource Conservation.

Most respondents said they would like to see more diversity on the board, with greater representation from the business community and elected officials. Half recommended "several new seats" for "recycling / hauling representatives." Arguments for and against a designated seat for Western Disposal, which had been proposed, ranged from the very supportive to the highly cautious. For example:

- "I believe that Western should have a designated seat on the board because the company collects and processes most of the materials generated in Boulder County. . . . "
- " . . . as the primary service provider for both Lafayette and Louisville, as a major hauler for the city of Boulder, and having the only compost operation (of which I'm aware) in this county, I believe there is good reason to have a dedicated seat for Western Disposal . . ."
- "For-profit organizations should not be given a seat since their input will always be tainted by financial conflict. As much as we all might like Western Disposal, their mission is making money first and above all, and the place for their voice is AFTER the community-benefit voices have decided what they want . . ." and
- "There should absolutely not be any more 'interested parties' on the board."

Staff suggests that RCAB discuss these challenges at the February meeting and either recommend a March bylaws revision that would designate a seat for Western Disposal (bringing total membership to 21 or more with a resulting quorum of 11 or higher) or, instead, decline to make a change in membership. In the latter case, RCAB could recommend the BOCC keep the balance of recycling / hauling representatives in mind when choosing at-large members in the future.

Recommended Changes

Finally, respondents would like to see RCAB address more action items and pay greater attention to the operation of the recycling facility and other zero waste infrastructure. The various comments on this topic are transcribed below:

- Require community and organization updates deadlines then publish reports to RC website for public access
- Preplanned agendas. Not sure I was excited about the whole list in the pre-planned option listed above. I am concerned with the focus on Zero Waste. MY understanding is that this committee was partly or wholly established to address the operation of the FACILITY and the associated funds. I'm nervous that the re-location of the committee outside of the facility will kill the little input on that that we had.[1]
- In my two years on RCAB, we don't seem to have accomplished much of anything. We need to be more action oriented, make recommendations to the commissioners, have a set of goals for the year and try to stick to that plan. To often, I feel that we are expected to be a rubber stamp; I really don't like that. I think that many meetings are not productive at all, which is too bad because I'm committed to see us get to zero waste. Also, the staff needs to do a much better job of getting us materials in advance. Lots of frustration with the recent funding round recommendation materials.
- More action; less create another study; use what is on the shelves; decide if the county is going to invest in infrastructure, and what kind. If C&D is taking priority over a food scrap facility, fine, but make that clear, and let's not waste time (or vice-versa). I think the BCC need to hold cities/towns feet to the fire on achievements, not what they say as politicians.
- Volunteer boards can only do so many projects, so i think our real value is to share information about what communities and ZW partners are doing, and collaborating where possible.
- Honestly discussing feasibility of a county-run composting facility and working on getting ALL communities to have this service at curbside and affordable.
- Community Reports are important. RECOMMEND ACTION. Ohhh, I like that a lot. That's what I want to do. Not just talk about it. Not just study it. Break out and brainstorm and RECOMMEND ACTION.
- Can we have strict time limits on community reports- say 3 minutes a person? Zero waste infrastructure is great but I am not sure how much influence, if any, RCAB has on this. I think RCAB should try to focus on topics over which we have some authority or sway. Perhaps these are programs, ordinances, education, etc.? I am not sure. RCAB represents a great resource for the County. Action oriented agendas, stronger leadership at meetings to keep the group on topic, and keeping agenda items geared toward items over which we actually have some influence could help. Right now it sometimes seems like we are just sharing updates on what is going on without a plan for what we want to accomplish as a board.
- I also think the board should review their work for the previous year to determine if they met their objectives. Without a specific goal you tend to wander. We should access our actions and identify actions for the upcoming year. I also have suggested for years to have a subcommittee formed to address more consistent guidelines and evaluations for the grant process. It needs to be formalized to prevent any liability on our behalf and ensure there is no conflict of interest or a need to just spend funds allocated for the program. We need to be good stewards of the funds and accountable to the community.
- I agree with too many of these questions.
- This is a real mixed bag for me. I really appreciate the chance to preview items on the agenda with attached materials. But when I'm the one who has to provide the report, I'm usually doing it at the last minute! I'm reluctant to commit to an emphasis on either in-depth or timely special topics. With the many communities involved with our board, and the activities/issues happening with each of them, I think we'll usually be reacting to what's just coming up, while the solutions to problems require more time. The recent flood damage and all its related problems are a good example. It started as a quick reaction with rough temporary solutions, and will require in-depth long-term solutions later. Our board only has 18-to-24 'working' hours per year. Anything we do in-depth will take much much longer than people working on the same task as their regular work-day activities.

[1] One question on the survey suggested meeting downtown, rather than at the Recycling Center. No one favored this option for "re-location."

actions taken	Foster diversion activities in cities and communties in the county thru grants, letters of support, attendance at meetings, and white papers or resolutions	County Methane Capture facility	policy tools (pre-written ordinances, etc.) for use by communities in the County (bag fees, etc.) I would NOT want to see this group try to get involved in state level legislation.
addressing business C& D	Getting recycling into the Jamestown Post Office	countywide education	Programs or education or marketing implemented county-wide.
better use of finished compost	Greater university role for interns and applied research, workplace recycling, education outreach, etc.	countywide efforts to move forward on zero waste	Progress on C&D facility
Bio Char investigation	have fun	diversion survey reporting	Provide recommendations to county commissioners on actions the County can take to support zero waste
C and D	Having the County PAY for recycling on a better scale (they are UNDER PAYING HAULERS).	Education about resource conservation.	Supporting the county's efforts to move toward zero waste
C and D	Helping Jamestown divert where possible with the rebuild process.	encouraging data-generating ordinances for all entities county-wide	town/cities zero waste goals
Commercial / Institutional improvements	IGA's among cities for collaboration on key topics	expanded C-&-D waste diversion	unifying C&D recycling ordinances
Commercial recycling	Incentives	Facility - with REAL input into its operation and performance statistics relative to other facilities around the region and nation.	work on increasing commercial waste diversion. That can include multi-family/landlord-owned residential properties, and HOAs, to increase residentail waste diversion. But I'd like to find some solutions to what seems to be indifference or resistance by businesses.
Community Education	Increase Commercial recycling	finding more/better markets for the materials collected at our MRF	Zero Waste program implementation
Community Supported Composting/ORGANICS BAN	Increasing recycling diversion	Compost--markets and facilities	more C&D diversion
Compost receiving/processing infrustructure	Learn more about what other communities in the county want to achieve and discuss ways that RCAB or it's members can assist.	Consistent outreach and education messages	Multi-family residential recycling/waste diversion
Composting	Monthly reports of the progress of the recycling center, costs, any issues or new technologies to reduce costs.	county infrastructure	non-city C& D

Sustainability Office

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Boulder County Resource Conservation Advisory Board Meeting
February 26, 2014

Present: Jack DeBell – CU, Lisa Friend – Boulder County, Shirley Garcia – Broomfield, Jane Curtis Gazit – Nederland (phone), Bridget Johnson – Jamestown, Shari Malloy – At Large, Dan Matsch – Lyons, Lisa Morzel – At Large, Mark Persichetti – Louisville, Tim Plass – Boulder, Holly Running-Rabbit – Ward, Lisa Skumatz – At Large, Sarah Van Pelt – At-Large

Active Members Not Present: Juri Freeman – At Large, Charles Kamenides – Longmont

County Staff: Jeff Callahan – Boulder County Resource Conservation Division (RCD), Hilary Collins – Sustainability Office, Mark Wesson –RCD

Guests: Leigh Cushing – Boulder County Public Health, Kara Mertz – City of Boulder, Bill Hayes – Boulder County Public Health, Michelle Barnes – Center for Resource Conservation, Jared D'arcey – Center for Resource Conservation

Minutes:

1. **Call to Order/Introductions**. A quorum being present, Holly Running-Rabbit called the meeting to order and introductions were made.

2. **Approval of Minutes**. Lisa Friend made a motion to approve the July, 2013 minutes. Sarah Van Pelt seconded. Lisa Friend moved to approve the January, 2014 minutes. Tim Plass seconded. Both sets of minutes were unanimously approved.

3. **Zero Waste Update**.
   i. Potential Sustainability Funding. Hilary reported that the Board of County Commissioners is considering putting a sustainability tax before the voters in November. Susie Strife from the Commissioners' Office will provide further information at next month's meeting. The Commissioners are considering structuring the tax to provide some of the funding for local priorities, proportionate to population. RCAB members were encouraged to develop a "wish list" for Zero Waste (ZW) needs. A ZW survey has been sent out to RCAB member communities to gauge what ZW programs have been effective, what residential and commercial programs/services are needed, how ZW is being promoted, and to get thoughts on county-wide messaging. Results of this survey and follow up discussions planned by staff will form part of the Susie's presentation at the next RCAB meeting. If a tax is pursued, the tax ballot language would need to be developed by July.

   ii. RCAB Survey Report:
   Hilary reported on a survey specific to RCAB members and referred to the summary memorandum provided to RCAB members ahead of time.

a. Composition of RCAB: Most respondents would like to see more representation from the business community.

(Guest Speaker: due to time constraints, the survey discussion was postponed to allow for speaker presentation)

4. Standing Topic. Report on Success of Commercial Education Programs/Partners for a Clean Environment. Presented by Bill Hayes, Business Sustainability Advising Program, Boulder County Public Health (BCPH):

Bill had been invited to by RCAB to provide an update on commercial waste reduction programs. Referring to a handout circulated at the meeting, Bill reported that BCPH contracts with the City of Boulder to provide zero waste advising to 100 businesses. In 2013 they exceeded their goal and met with 111 businesses. The advisers observe current recycling and composting at the business, provide resource materials (signage), offer employee training and waste assessments if needed, and assist the 20% of businesses that go on to implement waste diversion projects. The program has done a lot of outreach to the business sector regarding composting, especially restaurants.

For the last 3 years, a US Department of Energy (DOE) grant has been used to develop the EnergySmart program, and business advising has focused more on energy improvements than on ZW measures. Now that the DOE grant cycle has ended, BCPH's PACE (Partners for a Clean Environment) program is being re-launched with a return to outreach focused more widely on energy efficiency, water conservation, and zero waste.

Through a Boulder County ZW Funding grant, BCPH also provided advising to 30 county businesses, and 30 Lafayette businesses, 7 of which became PACE certified.

It is very difficult to get an accurate picture of tons diverted, but using a newly developed data base (Salesforce platform), PACE staff will try to get more accurate reports this year. Challenges of collecting accurate data include the use of bins by multiple businesses in a complex owned by one landlord. The City of Boulder has a reimbursement rebate of up to $250 to help start a new service, funded by the trash tax. They are hoping to streamline this by providing the company with options for what they need, and BCPH will put in the order for the businesses directly.

The program is also working on a feasibility study with property owners. The strategy has been to go with large property managers and ask them what their barriers are to providing composting/recycling services. It was found that the barriers are: money, time, and contamination. PACE is hoping to help with the contamination and time issues. The city of Boulder might have some funding to help with the money barrier.

It is difficult to see cost savings with zero waste, unlike energy efficiency. Adding a service or compostable materials can add costs, so PACE staff are working with haulers and trying to develop other ways that would allow businesses that add services such as composting to break even, rather than end up paying more. Maybe 1-5 % of businesses will see a cost reduction. About half of the 111 businesses contacted were restaurants. Biggest concerns/perceived barriers with composting are animals and contamination.

Sarah Van Pelt clarified that very few businesses outside the City of Boulder have subscribed to new diversion services because they do not have the subsidies that the trash tax provides.

Over the past almost 20 years, there have been about 400 PACE certified businesses, currently there are about 200 active. The criteria have changed over the years and zero waste certification has only been around for about 3 years. PACE staff will be contacting all previously certified businesses to let them know there are new certification requirements.

3. **Zero Waste Update**

   i. RCAB Survey Report

      a. Composition of RCAB continued: RCAB currently has a 20-seat board with 12 communities represented, 3 non-profits (CU Recycling, Eco-Cycle, and ReSource) and 5 at-large representatives. There are 17 active members (Erie has no member appointed, and Superior and Lafayette are between appointments. More citizen representation is preferred, but waste professionals often apply for, and are appointed to at-large seats. The Board agreed to table further discussion on membership until next meeting to allow time to get through the rest of the survey questions and agenda for current meeting. **ACTION: County staff will draft a memo to present options for discussion.**

      b. Frequency, timing, duration and location of meetings: No changes are needed. The education room at the Recycling Center is preferred.

      c. Meeting attendance and subcommittees: Meeting attendance is not an issue. Subcommittees work well and should continue. They should provide the RCAB with complete information that members can vote on.

      d. Selection of Chair and Vice-Chair: There is strong support for switching to a more formal method for selecting these positions (vote). It was agreed that this discussion would also be revisited at the next meeting.

      e. Changes needed in how RCAB conducts business: Board members want hand-outs and points of discussion provided ahead of time. There is strong support for focusing on topics that move Zero Waste forward and recommend actions to the county. Members want meetings to be more action oriented, and they benefit from the community reports. It was agreed that staff will post materials for discussion on the RCAB website, prior to each monthly meeting. Jeff Callahan will be asked to give quarterly presentations on recycling facility operational metrics (snapshots of previous year, current year, and projections) and to compare these against what other facilities are doing as a reference. RCAB should define its priorities so there are goals to work toward and have a solid financial plan for how to accomplish this. It was noted that the sustainability tax discussion may help clarify this.

      f. Key topics RCAB should work on: Construction and Demolition materials (C&D), compost, commercial diversion, and education rank the highest in terms of future action.

      g. How RCAB can help improve annual survey results: The current system works well, but RCAB needs to establish a better approach to ensure that annual diversion surveys are properly filled out by members.

5. **Special Topic: Annual Report from RCAB to the Board of County Commissioners**

   Staff referred to the memorandum provided to RCAB members ahead of time. The County Commissioners requested an annual RCAB report at the same time that they asked their Sustainability office to staff the group. Up to now, the County's Administrative Services Department, Resource Conservation Division (RCD) has staffed the RCAB, but prompted by Hilary's move to Sustainability, and since the Sustainability office is more focused on policy, this duty has moved over to the Sustainability office. RCD staff will provide quarterly reports on the Recycling Center.

   RCAB members are requesting more accountability as far as facility expenditures, current recycling markets, and how this information affects local stakeholders. Important documents and topics with specifications that require voting or decisions to be made at the upcoming meeting should be posted on RCAB website prior to each meeting. It was agreed that RCAB will table further discussion on the annual report until the April meeting.

6. **Community Reports**
    i. Jack DeBell announced that on Monday, March 3rd from 9:00 a.m. to 12:00 noon there will be a Compost Forum organized by BASF and CU Recycling. It will be held at the Recycling Center. Jack anticipates a broad-based discussion on what is needed for greater organics diversion.
    ii. County issued a Request for Proposals (RFP) in 2013 for organics collection at the Nederland and Allenspark transfer stations. This RFP will be issued again in the near future. RCAB would like to discuss this.
    iii. Jack also encouraged people to attend a CU women's basketball game where CU Recycling will be handing out Sure-close compost containers funded by the Boulder County RCD.
    iv. Sarah Van Pelt announced her retirement and announced that she is stepping down from RCAB.

7. **Any Other Business**
    i. Report on the Hazardous Materials Management Program. This report was provided to RCAB before the meeting for information only.
    ii. It had been proposed that ArtParts be asked to present to RCAB in March. RCAB decided not to ask for this presentation. Members were encouraged to review the company's website for more information.

8. **Next Month's Agenda**
    i. Tentative topics for March are:
        a. Special Topic: Sustainability funding and zero waste survey results.
        b. Resource Conservation Update: Facility update with operations charts, comparisons with other facilities and narrative.
        c. Standing Topic: RCAB Election procedures

    ii. Tentative topics for April are:
        a. Bylaws Review and Discussion
        b. RCAB annual report

The meeting adjourned at 6:25 p.m.

Sustainability Office

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MEMORANDUM

March 19, 2014

To: Boulder County Resource Conservation Advisory Board (RCAB)
From: Hilary Collins, Sustainability Policy Analyst

Subject: **RCAB SURVEY FOLLOW UP**

The purpose of this memo is to clarify the findings of the recent RCAB survey, and to present discussion points and options on membership composition for consideration at the March RCAB meeting.

RCAB Survey Findings

At the request of the Board of County Commissioners (BOCC), RCAB members were recently asked for their thoughts on:

- Board composition and whether additional seats should be added for one or more waste haulers
- Selection of Chair and Vice Chair positions
- How RCAB business is conducted
- Meeting logistics (frequency, timing, duration and location)
- Meeting attendance
- Use of subcommittees
- The key topics that RCAB should focus on
- Making the annual community diversion survey more effective

County staff reported on the results of the RCAB survey at the February 2014 meeting. In summary, the findings were:

- There are differing opinions on the creation of additional RCAB seats for one or more waste haulers. More citizen representation is also desirable. Further discussion is needed
- RCAB favors switching to a more formal method for selecting Chair and Vice Chair positions and agreed to discuss bylaw changes at its April meeting
- RCAB wants to change how it conducts business and staff agreed to provide greater opportunity for consultation on facility operations (particularly the recycling center), and business will have an emphasis on making meaningful recommendations to the BOCC. Staff will provide meeting documents ahead of meetings, and post these materials on the RCAB website
- No changes are needed in meeting logistics, attendance, and community reporting
- The use of subcommittees, for in-depth analysis or specific work tasks, should continue with complete reporting back to the full board, so that votes can be taken
- The top ranked topics for future focus are: construction and demolition (C & D), compost, commercial diversion, and education

- The format of the annual community survey works well but a better mechanism is needed to ensure that all communities complete it in a complete and timely manner

Note: The April discussion of bylaw changes also presents an opportunity for the RCAB to revisit its stated advisory purpose, policy development role, and review responsibilities, which may be an appropriate follow on to the discussion of how RCAB business is conducted.

Membership Composition

RCAB currently has a 20 seat board with 12 communities represented, 3 designated non-profit seats (for CU Recycling, Eco-Cycle, and Resource) and 5 at-large representatives. Board members include elected officials, citizens, community staff, and interested parties. Currently, several at-large and community seats are held by recyclers/haulers.

When asked about the composition of the board, there was a broad range of opinions expressed by RCAB members, as summarized below:

- Only two board members (12%) responded that they were satisfied with the current make-up of Board and thought that no changes were needed
- Only five board members (29%) thought Western Disposal Services should be given a designated seat
- There was support for adding new seats for recycling/hauling representatives, with 9 respondents (52%) favoring this approach
- Five respondents (29%) thought that more seats are needed for business, and/or other interests such as federal agencies, hospitals, etc.
- Seven respondents thought the board would benefit from more elected officials being involved

The diversity of feeling on this topic was also represented in the survey comments, presented in somewhat shortened and randomized form at the end of this memo.

Options for Consideration

Below is a list of possible options that RCAB may want to consider as it discusses whether or not to recommend changes in membership to the BOCC:

Option 1: No changes in RCAB composition, and no recommendation to BOCC

Option 2: No changes in RCAB composition, but recommend that the BOCC keep the balance of recycling/hauling and citizen representatives in mind when choosing at-large members in the future.

Option 3: Recommend a new seat be created for Western Disposal Services

Option 4 Recommend a number of additional seats for unspecified hauling community representatives

Option 5: Recommend a number of additional seats for unspecified business representatives including haulers, federal agencies, hospitals, etc.

Option 6: Recommend to the BOCC that at-large positions be limited to citizen representatives and that interested parties are excluded from these positions

Option 7: Recommend to the BOCC that they encourage more participation on the RCAB by elected officials

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Summary Comments on Membership

"I think adding other members would make the board too large."

"I think preference should be given to elected officials for town/city seats. I also think we need hauler and business representation."

"I would support having seats on the board created for the private haulers."

"Western should have a designated seat on the board because the company collects and processes most of the materials generated in Boulder County. Western has industry knowledge that can help the board vet options for increasing diversion."

"What is the process for selecting the at-large and the non-profit members? This should be formalized as well."

"I would like to see more community involvement from residents for their input and interests. The board should not have to worry about conflict of interest when decisions are made."

"RCAB needs a mix of perspectives and positions; large and smaller haulers; some elected officials; county staff, community members. It is only through a range of thought (and space for diverging ideas to be heard) that this board will thrive."

Western's investment in facilities, equipment and industry trends that has enabled much of the diversion that occurs today. Western sees itself as a critical partner with the jurisdictions rather than just a service provider."

Only "community-benefit" organizations should have seats on the RCAB, such as government and non-profit organizations.

"For-profit organizations should not be given a seat since their input will always be tainted by financial conflict.
As much as we all might like Western Disposal, their mission is making money first and above all, and the place for their voice is AFTER the community-benefit voices have decided what they want for the community ... after that process is when the for-profit voices get a chance to respond."

"There should absolutely not be any more "interested parties" on the board. They are sufficiently represented by Eco-Cycle, Resource and Western and two of the At Large members being additional people with financial vested interests.. This makes "interested parties" comprising 30%. That's plenty."

"If any more specific-constituent seats are added, I think they could be drawn from the five available at-large seats we currently have, rather than increasing our overall membership. The County Commissioners have the flexibility to offer those at-large seats to business/hauler/govt-agency people. If they want to formalize representation for any such groups, I see the at-large seats as the existing pool for such representatives right now."

"Though I think there are too many seats already, it would be nice to see the business community represented more completely: not necessarily more haulers."

"First, as likely the largest hauler in the county, as the primary service provider for both Lafayette and Louisville, as a major hauler for the city of Boulder, and having the only compost operation (of which I'm aware) in this county, I believe there is good reason to have a dedicated seat for Western Disposal on RCAB."

"I wouldn't mind seeing some kind of business-representative seat on RCAB, but that may be more difficult to accomplish."

"Is there a county-wide business-promotion organization that could provide a county-wide view for RCAB? I think it'd be helpful to have a 'business' representative who could go from RCAB back to their own organization to promote our wishes for increased waste-diversion by businesses."

“Maybe recruit for other agencies etc. Make a couple of at-largers these. I wonder how Transportation and Land Use and POS, etc. know what we are up to and we know what they are up to for making smart informed decisions.”

RCAB – Zero Waste Update March 2014

Action Item for Councils: In anticipation of Boulder County's sustainability funding proposal, please continue to think about what you would want to see in sustainability / zero waste in your communities. Work with Hilary and Lisa to schedule a presentation for your board or advisory board and plan to bring recommendations back to RCAB.

The **Construction RFP** is drafted. A copy is attached.

The **Paint Bill** in the state legislature has moved to the House and is due for a first reading in committee on April 3.

No one seems very interested in the Keep America Beautiful **"Map Your Bin" project**.

Lisa Friend is working with Boulder County Parks on an initiative to see **more compost used** to re-vegetate roadside rights of way. Documenting county compost use is on Lisa's agenda this year.

A. **Respondents should be able to perform these tasks**:

Education

- As the designated Zero Waste consultant for Boulder County's BuildSmart program, serve as a resource to residents and building contractors for questions, concerns and feedback on the Zero Waste elements of Boulder County's BuildSmart process and requirements.
- The Boulder County BuildSmart program will provide phone and electronic contact information for the consultant's Zero Waste services.
- The consultant shall make phone and on-site consulting services available to customers in unincorporated Boulder County from 8 a.m. to 4 p.m. Monday through Friday, with exceptions for major holidays.
    - Respond to inquiries within 48 hours to identify whether the inquire requires phone or on-site consulting services.
    - Educate each customer on the BuildSmart Zero Waste requirements, including, but not limited to:
        - minimum code compliance requirements
        - required documentation procedures
        - suggested practices for code performance
    - Establish a phone checklist that determines the caller's needs and services before committing to an on-site consultation. People required to comply with the deconstruction mandate have first priority for on-site service (see section below).
- At least once during the contract term, the consultant shall assist the County with any needed updates to printed construction and demolition reuse and recycling resource materials. All material created for this program will be approved and feature the Boulder County logo. Boulder County will be responsible for printing materials.
- Create a presence of this service and outline the process on the contractor(s) web site(s). Use the Boulder County logo to represent partnership on the sites where this information is housed. Approval by Boulder County staff is required before going live.
- Additional education such as educational workshops that target contractors, architects and other design professionals. If possible, such education should be designed in collaboration with other organizations (Colorado Green Building Guild, etc.) to leverage financial and staff resources.

On-Site Services

- Schedule necessary site visits to those customers that qualify for the consulting services set forth in this Agreement.
- Deliver a maximum of 50 site assessments.

- Assess each project for reuse, then construction and demolition (C&D) recycling capabilities.
- Make recommendations for diversion to each customer in a written diversion estimate and / or Deconstruction Plan.
- Review the Deconstruction Plan and waste diversion assessment with the customer.
- Field questions from the customer on the waste diversion section for compliance for the BuildSmart program.
- Authorize the materials being submitted for the building/deconstruction permit.
- Provide Boulder County approved resource materials of recycling opportunities, deconstruction contractors, and value appraiser lists (note: appraisers are not endorsed and/or affiliated with the city) to customer. All material created for this program will be approved and feature the Boulder County logo.

Comment [FR1]: I think the idea of getting a third party to verify the deconstruction documentation is a very attractive idea, but there are some details to this that would have to be sorted out.

Evaluation

- Track all incoming deconstruction/ construction waste calls and emails per month and identify how many are required to comply with the requirements.
- Log all site visits, addresses, contact persons, and project descriptions.
- Provide the County with electronic copies of all Deconstruction Plans developed for Boulder County building permit applicants triggering the deconstruction mandate.
- Cross-reference completed building permits with plan recommendations to determine effectiveness of diversion activities:
  - Create a log of completed building projects that documents tonnage diverted
  - Where appropriate, compare final diversion with original diversion estimates
  - In cases of extreme divergence, create an anecdotal record of lessons learned
- Record and forward to the County all feedback for constant improvement on the program.
- Late third-quarter 2014, develop a survey requesting qualitative feedback on Boulder County's BuildSmart Zero Waste program mandates, consultant's services and process, and suggestions for improving program implementation. Once the survey is approved by Boulder County staff, then the contractor(s) will distribute it to all program participants.
- Tally survey results and provide them to Boulder County.

B. Contractor staff will complete tasks under the following timeline:

- The tasks outlined above will be completed on an as-needed basis throughout the term of the contract.
- Upon determining that a customer is in need of the contractor's services, the entire service process should be completed within 1 week.

C. **In addition to the above evaluative components, Contractor staff will provide:**

- An annual report, with oversight by the BuildSmart project manager that will include:
  - a recap of the year's work,
  - site visit information,
  - feedback from contractors,
  - copies of all materials used and distributed in the process,
  - evaluation of the program for 2014, and
  - recommendations for future services.

Boulder County

Sustainability Office

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MEMORANDUM

Date: March 25, 2014
To: Boulder County Resource Conservation Advisory Board (RCAB)
From: Hilary Collins, Sustainability Policy Analyst

Re: **Report on Zero Waste Survey Results and Input on Sustainability Funding Needs**

As RCAB members are aware, the Board of Boulder County Commissioners is exploring ways to provide ongoing funding for a range of county-wide sustainability initiatives. While no formal decision has been made, a sustainability tax is being considered for the 2014 ballot. At this time, the County is actively seeking input on applicable needs, priorities, and possible funding sources.

As part of this effort, in February 2014, Boulder County staff surveyed RCAB member communities in order to:

- Find out what zero waste services have been most effective
- Explore residential and commercial zero waste needs (wish lists) and barriers
- Gauge the current extent and future potential of zero waste planning and the use of ordinances to support waste diversion
- Find out how zero waste is currently promoted on a community level, whether there is interest in communities working together on education and outreach, and what types of county-wide messaging are needed
- Ask if RCAB plays a useful role in helping communities achieve zero waste and whether RCAB could achieve more if it were changed in some way

Many thanks to all who participated in giving feedback; the response to the survey was excellent, with responses received from 10 of the 11 communities surveyed. To follow up on the survey, county staff met with individual community staff and/or their RCAB representatives to discuss the results of the survey and to provide information on a variety of zero waste infrastructure and programmatic possibilities for potential funding by the tax measure. In addition, staff met with most of the remaining at-large and non-profit RCAB members for similar discussions.

The purpose of this memorandum is to report the findings of the RCAB zero waste survey and subsequent discussions and to summarize initial key points of input received from RCAB members on the potential zero waste infrastructure and programs being considered for funding.

Survey Results

1. What zero waste services have been most effective to date?

This question elicited a wide variety of responses including:

- PAYT programs/curbside collections for recycling, or recycling and composting
- Multifamily recycling
- Drop-off collection centers
- Yard-waste drop-off centers

- Free waste drop-off days with sorting for reuse and recycling
- Special event collections for hard-to-recycle materials, HHW, e-waste, pharmaceuticals, and paper shredding
- Zero waste receptacles at public facilities and events
- Requiring zero waste practices of tenants of public spaces
- Zero waste education

2. What residential and commercial zero waste services are needed in your community?

Table I provides a breakdown of community needs by service type.

Table I

ZW Service Type	Need identified	Communities identifying this need
Residential	Curbside recycling	Erie, Lyons, Nederland
Residential	Curbside composting	Broomfield, Erie, Lafayette, Longmont, Lyons, Nederland, Superior
Commercial	MFU recycling	Boulder, Broomfield, Lafayette, Longmont, Louisville, Lyons, Nederland, Superior
Commercial	MFU composting	Boulder, Broomfield, Lafayette, Longmont, Louisville, Lyons, Nederland, Superior
Commercial	Commercial recycling	Boulder, Erie, Lafayette, Lyons, Louisville, Nederland, Superior, Ward
Commercial	Commercial Composting	Boulder, Erie, Lyons, Louisville, Nederland, Superior
Drop-off	Recycling	Lafayette, Superior, Nederland
Drop-off	Composting	Lyons, Nederland, Superior
Drop-off	Textiles	Longmont, Louisville
Drop-off	Scrap Metal	Broomfield, Lyons, Superior, Ward
Drop-off	CHaRM materials	Longmont, Louisville, Lyons, Superior, Nederland, Ward
Drop-off	Reusable building materials	Longmont, Louisville, Nederland, Superior, Ward
Drop-off	C&D materials	Longmont, Louisville, Nederland, Superior, Ward
Drop-off	HHW	Longmont, Superior, Nederland
Drop-off	Pharmaceuticals	Louisville, Nederland
Drop-off	Confidential paper and media	Boulder, Louisville, Nederland, Superior
Periodic Collection	Recycling	Erie, Lyons, Nederland
Periodic Collection	Composting	Nederland, Superior
Special Event	HHW	Longmont, Lyons, Nederland, Ward,
Special Event	Confidential paper and media	Lyons, Superior, Nederland
Special Event	Electronics	Longmont, Louisville, Lyons, Nederland Superior, Ward
Special Event	Pharmaceuticals	Longmont, Lyons, Louisville, Nederland

3. What types of zero waste planning has your community done or endorsed?

Table II summarizes where planning is in place, in progress, or where no action is planned.

Table II

Plan or Action	Plan in place	Plan in progress	No action planned
Zero Waste Plan	Boulder	Erie, Louisville, Nederland	Broomfield, Lafayette, Longmont, Superior, Ward
Sustainability Plan	Boulder, Broomfield, Superior	Erie, Louisville, Nederland	Lafayette, Longmont, Ward
Have endorsed BOCO ZW Plan	Boulder, Lafayette, Nederland	Lyons	Broomfield, Longmont, Louisville, Superior, Ward
Have endorsed BOCO Sustainability Plan	Boulder	Lyons	Broomfield, Lafayette, Longmont, Louisville, Superior, Ward
Other			

Note: Boulder is updating their ZW master plan in 2014. Louisville is reviewing plans and creating an action list. Lyons consulted Boulder County's plans and incorporated points into their comprehensive plan. Has Boulder actually endorsed Boulder County's plans?

4. What local ordinances does your community have in place to support zero waste? What would you like to expand or add?

Table III summarizes which communities currently have local ordinances supporting zero waste, and which want to expand or add such ordinances.

Table III

Type of ordinance	Currently have	Want to expand	Want to add
Pay-As-You-Throw (PAYT) pricing for trash	Boulder, Lafayette, Longmont, Louisville, Nederland (at transfer station), Superior		Lyons
Require deconstruction waste diversion and tracking	Boulder, Superior	Boulder,	Louisville, Lyons, Nederland
Require commercial space for recycling and/or composting containers	Broomfield, Erie, Superior	Erie	Lyons, Superior
Require commercial recycling			Boulder, Louisville, Nederland, Superior
Require commercial composting			Boulder, Louisville, Nederland, Superior
Other	Boulder has a disposable bag fee (plastic bag bans are illegal in Colorado). Nederland requires that tenants of municipal buildings recycle and compost.		Longmont, Nederland and Superior want to add a plastic bag ban or fee. Louisville is undecided about a plastic bag ban and not sure what commercial space requirements involve. Lyons wants to license waste haulers. Nederland is looking at requiring residential recycling and wants to add a zero waste event ordinance.

Note: A comment was made that in Superior, while there is no extra charge for recycling, residential collection doesn't meet the definition of PAYT. Also, Louisville residents pay extra for composting services.

5. What are the barriers to effective implementation of zero waste in your community, or countywide?

In terms of the barriers to zero waste suggested in the survey, the "votes" received were as follows:

- Lack of funding 8 votes
- Lack of staff time 7 votes
- Competes with other needs 7 votes
- Lack of political will 5 votes
- Is a low priority 3 votes
- Inconsistent /confusing messaging 1 vote

6. How does your community promote zero waste?

As expected, most communities reported using their websites to promote zero waste to residents and businesses. As shown below, several other methods are also used:

- Website (Boulder, Broomfield, Erie, Louisville, Lyons and Superior)
- Newsletter emails (Broomfield, Lyons, Superior and Ward)
- Training Classes (Broomfield, Longmont, Lyons, and Superior)
- Printed newsletters (Broomfield, Longmont, Superior)
- Community meetings (Boulder, Longmont, and Lyons)
- Brochures (Boulder, Longmont, and Ward)
- Facebook (Boulder and Erie)
- Twitter (Boulder and Erie)
- Factsheets (Louisville, Ward)
- Tabling at events (Longmont and Superior)
- Presentations (Longmont, Lyons)
- Newspaper advertisements (Longmont)
- Door-to-door canvassing (Longmont)
- Electronic or posted notice boards (Ward)
- Community newsletters (Lyons)

Boulder noted that they also contract with Eco-Cycle for education and outreach. Louisville commented that they do not have any city-directed outreach at this time. Western Disposal Services provides bi-lingual factsheets to their Louisville customers, and the City of Louisville directs waste-related questions to this hauler.

7. If our communities could work together to educate residents and businesses, what key countywide zero-waste messages are needed?

The list below shows which suggested county-wide messages were identified as needed, and by which community representative.

- Why it's important to reduce waste through reducing, reusing, recycling and composting (Boulder, Broomfield, Louisville, Lyons, Superior and Ward)

- How zero waste can help to reduce CO2 emissions and combat climate change (Boulder, Louisville, Lyons, Superior and Ward)
- How to recycle and compost at home or at work (Lafayette, Longmont, Louisville, Lyons, Superior and Ward)
- How to set up a work place zero waste program (Longmont, Ward)
- How to be successful at backyard composting (Boulder, Longmont, Lyons)
- How to reduce the use of toxic products at home or at work (Boulder, Lyons)
- How to reduce waste and recycle during a new build or remodeling project (Boulder, Lyons)
- What is a deconstruction plan and why do I need one (Boulder, Lyons and Superior)

Boulder noted that "how to" messages may not be as easy to design, as the guidelines may be different from one community to other. The city agreed that would be great to have a county-wide look at zero waste guidelines that could be tailored to each community. Lyons said it would be great to institute and homogenize deconstruction plans across the county.

8. Does the RCAB play a useful role in helping communities achieve zero waste and could it achieve more if it were changed in some way?

Comments received in response to this question were as follows:

- Boulder – the Board has put together a comprehensive zero waste plan. A phased implementation plan along with countywide coordination (i.e. construction waste) in some areas would be helpful.
- Longmont – RCAB plays a useful role by bringing together the participating communities on a regular schedule to discuss successes and challenges in waste diversion programs and practices in each municipality.
- Lyons – It's very important to know what is going on in the broader community including successes and barriers. Sharing across communities is the #1 benefit.
- Superior – RCAB provides good information. The bigger challenge is changing at the policy making level within our own community. We do what we can in spite of the climate.
- Ward – Our community is so small, although we deserve attention, payoffs aren't as big. RCAB provides a platform for networking to help solve our local issues.

Report on follow-up discussions and initial input on the potential zero waste infrastructure and programs being considered for funding

In the discussions, staff addressed the following points:

a. Zero waste is one of several sustainability initiative areas being considered for possible funding including:
   - Energy efficiency and renewable energy programs
   - Water conservation programs and services
   - Transportation Programs & Infrastructure
   - Local Food & Agriculture Programs & Infrastructure
   - Community Sustainability Grants

b. The following suggested zero waste infrastructure and services are being considered:

Recycling Center infrastructure improvements, including an expansion of the recycling center tipping floor, additional baler and addition of plastics sorting technology
Infrastructure incentives to support commercial recycling (corrals, bins, signage)
East county infrastructure such as a compost facility and or a CHaRM/Resource facility
Zero Waste infrastructure for mountain communities
Zero Waste advising for commercial businesses and residents
New market development incentives for recycled products
Incentives for new construction and demolition (C&D) materials drop off
Countywide support for streamlined Zero Waste education and outreach

c. Western Disposal Services (WDS) has proposed a private-sector option by which they would expand their existing compost facility in east Boulder to accept all compostable materials generated in Boulder County. The County is talking to Western in partnership with the city of Boulder to insure Western's proposed facility would meet the needs of all Boulder County residents and compost collectors. WDS is also planning to build a new transfer station adjacent to their composting facility and expects to expand their construction and demolition activities in coming years.

In summary, the following general <u>and initial</u> input was received:

1. **New funding is needed** - There is a general consensus that new funding is needed to support zero waste and that continued progress will be hampered without new funding.

2. **We should invest in existing facilities** - There was general and strong support for investing in existing infrastructure to benefit the recyclables diversion system county-wide, particularly the recycling center, so that this facility can remain effective and competitive. It was suggested that the Recycling Center should develop a long-term facility plan that takes into account other future needs for this facility. The Resource/Eco-Cycle facility at 6400 Arapahoe, Boulder, was mentioned as an existing facility that needs support and expansion.

3. **East county infrastructure is needed** - East county communities see the need for additional local facilities and services, particularly a composting facility if needed, and a more convenient CHaRM/Resource facility. They also see needs for drop-off composting and opportunities to divert construction and demolition (C&D) materials. They also want special collections for some materials. A question was raised as to whether local allocations could be large enough to cover east county and mountain needs.

4. **Mountain infrastructure is needed** - Mountain communities want to expand drop-off services. They favor the improvements in drop-off services including the expansion of the county's Allenspark drop-off center, and relocation of the county's drop-off center in Lyons. Ward and Jamestown, which have benefitted in the past from monthly recycling collection opportunities provided by Eco-Cycle, would like to see this type of service re-started in some way.

5. **Commercial recycling (by businesses, homeowners associations [HOAs] and multi-facility units) is the next frontier in terms of traditional recyclables diversion** - It was agreed that significant amounts of recyclable material remain unrecovered in the commercial sector. Programs are underway, or planned, to increase the amount of commercial single stream materials. In particular, the City of Boulder is considering mandating participation in commercial recycling service.

6. **Programs and services that support increased diversion, particularly with regard to the commercial sector, and construction and demolition diversion, are favored.**

7. **Residential curbside collection of compost is needed in many areas including Longmont, Lafayette and for HOAs in the east county.** The City of Boulder is considering requiring restaurants and grocery stores to compost. The City of Lafayette is hoping to start offering residential compost services in the fall of 2014. Some RCAB members felt that composting facilities should be publicly-owned. If not publicly-owned, they would like to see a public/private partnership create a facility (or facilities) accessible to all haulers. It was noted that the Western Disposal Services composting facility is only at 50% capacity and could be expanded. An analysis of future compost facility needs should be undertaken. Some people advocated for having local composting facilities in order to reduce transportation costs and thus improve composting economics. It was noted that there may be an opportunity for synergy between composting and providing soil amendments for better local crop production.

8. **There may be opportunities to collect and/or process different types of construction and demolition (C&D) materials at different facilities** – Some felt that C&D materials could be divided into aggregates (asphalt, concrete, shingles) that need more space to handle and process (and which can be noisy) and the "softer" C&D materials that could be handled at a CHaRM-type facility. It was noted that enforcement of building requirements is very important to the success of C&D material diversion.

9. **There is support for collaborative approaches to regulation and licensing** – Many people felt that planning, ordinances, and education could be good candidates to pursue through an intergovernmental agreement (IGA). The county could help by circulating ordinances already in place to all RCAB members. There also seemed to be support for a county-wide hauler licensing approach.

10. **There is support for collaborative approaches to programs and outreach** - Some community representatives reported that they didn't have the staff time to deliver their own zero waste programs or outreach, but they would likely participate if county programs, such as PACE, were expanded and offered. There is general support for coordination of outreach messaging, particularly "why" messages rather than "how." Several people advocated partnering with non-profits on this.

Energy Efficiency and Renewable Energy Programs
Residential & Commercial EnergySmart
Low-interest loans and other incentives for solar
Low-income home weatherization, which subsidizes EnergySmart for low-income households throughout the county
Zero Waste Infrastructure & Services
Recycling Center infrastructure improvements, including an expansion of the recycling center tipping floor, additional baler, and addition of plastics sorting technology
Infrastructure incentives to support commercial recycling (corrals, bins, signage)
East county infrastructure such as a compost facility and or a CHaRM/Resource facility
Zero Waste infrastructure for mountain communities
Zero Waste advising for commercial businesses and residents
New market development incentives for recycled products
Incentives for new construction and demolition (C&D) materials drop off
Countywide support for streamlined Zero Waste education and outreach
Water Conservation Programs & Services
Water conservation advising for businesses and residents
Water conservation education
Helping open space farmers reduce water use through more efficient irrigation practices
Transportation Programs & Infrastructure
Local and regional transit pass support
First- and final-mile programs, bus stop improvements, bike parking infrastructure and bus service upgrades
Local Food & Agriculture Programs & Infrastructure
Educational agriculture facility
Farmers market infrastructure
Commercial kitchen at the fairgrounds
Support to farmers to produce more organic and local food
Community Sustainability Grants
Cities and towns in Boulder County would be eligible to apply and receive funding to support their own local environmental priorities, ranging across planning, personnel, infrastructure and programs
Other suggested services
Wildfire and flood mitigation
Resiliency planning and sustainability planning
Your thoughts and suggestions?

Boulder County Resource Conservation Advisory Board – April 23, 2014

Bylaws Discussion

Article IV - Membership

Section 1. Membership

Existing with proposed changes: The membership of this Board shall be limited to ~~20~~ **22** members and shall be as representative as possible of the county as a whole. Particular consideration shall be given to geographic representation. The cities and towns within the county (Boulder, Erie, Jamestown, Lafayette, Longmont, Louisville, Lyons, Nederland, Superior, and Ward), the City and County of Broomfield, and Boulder County will each appoint one representative. The Center for ReSource Conservation, CU Recycling, ~~and~~ Eco-Cycle**, Western Disposal Services, and one additional hauler** will each appoint one representative. In addition, the Board of County Commissioners will appoint five at-large members.

Article V - Officers

Section 1. Election of Officers

Existing: The officers of the Resource Conservation Advisory Board shall consist of a chairperson and a vice-chairperson and shall be elected at the first regular meeting following the annual appointment of the new members by the Board of County Commissioners. Officers will serve by rotation on a one-year basis, with the vice-chairperson automatically moving up to chairperson, and a new vice-chair being selected by a random drawing until all board members have served. The director of Administrative Services, or a staff member designated by the Director, shall serve as secretary to the Resource Conservation Advisory Board.

Article V - Officers

Section 1. Election of Officers - Sentence 1

Existing: The officers of the RCAB shall consist of a chairperson and a vice-chairperson and shall be elected at the first regular meeting following the annual appointment of the new members by the Board of County Commissioners.

Option 1. The officers of the RCAB shall consist of a chairperson and a vice-chairperson and shall be elected ~~shall be elected at the first regular meeting following the annual appointment of the new members by the Board of County Commissioners.~~ **from the appointed members at the May business meeting each year, or the first regular business meeting thereafter with a quorum.**

Article V - Officers

Section 1. Election of Officers – Sentence 2

Existing: Officers will serve by rotation on a one-year basis, with the vice-chairperson automatically moving up to chairperson, and a new vice-chair being selected by a random drawing until all board members have served.

Option 1. Officers will serve ~~by rotation~~ on a one-year basis, with the vice-chairperson automatically moving up to chairperson, and a ~~new~~ vice-chair being selected by ~~a random drawing~~ **nomination and majority vote** ~~until all board members have served~~.

Option 2. Officers will serve ~~by rotation~~ on a one-year basis~~, with the vice-chairperson automatically moving up to chairperson, and a new~~ **with a** chair and vice-chair being selected by ~~a random drawing~~ **nomination and majority vote** ~~until all board members have served.~~

Article V - Officers

Section 1. Election of Officers – Sentence 3

Existing: The director of Administrative Services, or a staff member designated by the Director, shall serve as secretary to the Resource Conservation Advisory Board.

Proposed: ~~The director of Administrative Services, or a~~ **A** staff member designated by the ~~Director,~~ **Board of County Commissioners or their designee** shall serve as secretary to the Resource Conservation Advisory Board.

Article V - Officers

Section 1. Election of Officers – New Sentence 4

Existing: None

Option 1 (with automatic move up): If the chair resigns before the end of their term, then the vice-chair will assume the chairperson position, and a new vice-chair will be elected at the next regular business meeting. If the vice-chair resigns, then a new vice-chair will be elected at the next regular business meeting.

Option 2 (without automatic move up): If the chair and/or vice-chair resigns before the end of their term(s), then a new chair and/or vice-chair will be elected at the next regular business meeting.

Article II - Purpose and Policy

Section 1. Purpose

Existing: The purpose of the Advisory Board shall be to assist the Board of County Commissioners in reducing the amount and toxicity of waste generated in the county; to research, review and recommend changes in policy related to waste reduction, reuse, recycling and composting; to provide input on the development and management of facilities and programs; and as a result of these efforts to help Boulder County and its communities to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution.

Article III - Duties and Responsibilities

Section 1. Policy Development - ***existing and proposed***

Existing: The Advisory Board shall recommend revisions to the solid waste element of the Boulder County Comprehensive Plan and the County's land use regulations which pertain to solid waste, recycling, composting and other waste diversion activities.

Proposed: The Advisory Board shall recommend revisions to the ~~solid waste element of the~~ Boulder County Comprehensive Plan, **the Boulder County Zero Waste Action Plan, the Boulder County Environmental Sustainability Plan**, and the County's land use regulations which pertain to solid waste, recycling, composting and other waste diversion activities.

Article III - Duties and Responsibilities

Section 2. Review Responsibility – ***Existing***

The Advisory Board shall advise the Board of County Commissioners on matters affecting facilities and programs funded using revenues generated by the former Boulder County Recycling Sales Tax. Such matters shall include, but shall not be limited to, the operation and maintenance of the Boulder County Recycling Center; the construction, operation and maintenance of composting facilities and equipment; and the expansion of the household hazardous waste facility. At the request of the Board of County Commissioners, the Advisory Board will also review and make recommendations on county-funded waste diversion programs and activities.

Article III - Duties and Responsibilities

Section 2. Review Responsibility

Proposed changes after first sentence:

Such matters shall include, but shall not be limited to, the operation**,** ~~and~~ maintenance **and expansion** of the Boulder County Recycling Center; the construction, operation and maintenance of composting **and other waste diversion** facilities and equipment; and the expansion of the **Hazardous Materials Management Facility** ~~household hazardous waste facility~~. ~~At the request of the Board of County Commissioners, the~~ **The** Advisory Board will also review and make recommendations on county-funded waste diversion programs and activities.

Boulder County

Sustainability Office

Street Address: 1325 Pearl Street 13th Boulder, Colorado 80304
PO Box 471, Boulder, CO 80306 • Tel: 303-441-4565

Boulder County Resource Conservation Advisory Board Meeting
Minutes: April 23, 2014

Present: Jack DeBell – CU Recycling, Juri Freeman – At Large, Lisa Friend – Boulder County, Jane Curtis Gazit – Nederland, Bridget Johnson – Jamestown, Charles Kamenides – Longmont, Shari Malloy – At Large, Dan Matsch – Lyons, Mark Persichetti – Louisville, Holly Running-Rabbit – Ward, Lisa Skumatz – At Large.

Active Members Not Present: Frank Bruno – At large, Tom Dowling – Lafayette, Shirley Garcia – Broomfield, Suzanne Jones – Eco-Cycle, Lisa Morzel – At Large, Tim Plass – Boulder.

County Staff: Hilary Collins – Sustainability Office, Mark Wesson – RCD/Sustainability Office.

Guests: Alexander Armani-Munn – Nederland, Mark Doherty, County Attorney's Office, Randy Moorman – Eco-Cycle, Kathy Okon – Boulder County, Dan Stellar – Center for Resource Conservation.

Minutes:

1. **Call to Order/Introductions.** A quorum being present, Mark Persichetti, Chair, called the meeting to order and introductions were made.

Note: The order of the agenda was changed

2. **Approval of Minutes.** Lisa Friend made a motion proposing two changes to the February minutes: a clarification of the February minutes approval and inclusion of Holly Running-Rabbit as the second on item #6, the bylaws motion. Lisa Skumatz seconded. The motion was unanimously approved. .

3. **Standing Topic: Review of bylaws amendments, and Election of Vice-Chair as tabled from last month.** Hilary reviewed a PowerPoint slide presentation provided in advance. Amendments (see revised bylaws attached) were discussed and voted upon as follows:
    - Membership (Slide 2) Lisa S motioned and Holly seconded. Unanimously approved.
    - Election of Officers – timing (Slide 4) Lisa S. motioned and Bridget seconded. Unanimously approved.
    - Election of Officers – how selected (Slide 5) Dan M motioned and Lisa S seconded. Unanimously approved.
    - Election of Officers – who designates staff (Slide 6) Lisa S motioned and Bridget seconded. Unanimously approved.
    - Election of Officers – how resignations are handled (Slide 7) Lisa S motioned and Lisa F seconded. Unanimously approved
    - Purpose (Slide 8) Jack motioned and Holly seconded. The vote was 8 in favor, no opposed.
    - Policy development (Slide 9) Lisa S motioned and Jack seconded. Unanimously approved.

Resource Conservation Advisory Board
Chair and Vice-Chair Elections

Options for Nominations and Voting

Once a quorum has been attained at the designated election meeting, it is suggested that the board members nominate chair and vice chair candidates, and members then vote for each position in turn.

Below are three options the board can consider for the approach to nominate and vote for officer candidates.

Option 1 - Verbal nominations and show of hands

- Board members verbally nominate themselves or other board members for chair and ask for a second.
- A second verbally supports the nomination.
- The nominee indicates his or her acceptance or rejection of the nomination (those that decline are not considered).
- The board votes by show of hands for chair (the winner is the board member who gets the most votes).
- Board members use the same procedure to nominate and vote for vice-chair.

Option 2 – Write-in nominations and voting by ballot

- Board members individually complete written nominations for chair and vice chair.

Nominees are asked whether they accept the nominations.

- The names of those who agree to stand – and the position(s) for which they are candidates – are written on the white board or otherwise displayed.

- Each RCAB member present writes the name of their preferred candidates for chair and vice chair on a slip of paper. These slips constitute the "votes."
- Votes are collected and counted by county staff or another person(s) of the board's choosing.
- In case of a draw for any position, the process is repeated until a slate has been elected.

Option 3 – Verbal nominations and voting by ballot

- Board members verbally nominate themselves or other board members for chair and ask for a second.

- A second verbally supports the nomination.
- The nominee indicates his or her acceptance or rejection of the nomination (those that decline are not considered).
- The names of those that agree to stand are written on the white board or otherwise displayed.
- Each RCAB member present writes the name of their preferred candidate for chair on a slip of paper.
- Votes are collected and counted by county staff or another person(s) of the board's choosing.
- In case of a draw, the process is repeated until a chair has been elected.
- Board members use the same procedure to nominate and vote for vice-chair.

Boulder County

Sustainability Office

Street Address: 1325 Pearl Street 13th Boulder, Colorado 80304
PO Box 471, Boulder, CO 80306 • Tel: 303-441-4565

BOARD MEMO

Date: May 28, 2014
To: Board of County Commissioners
From: Resource Conservation Advisory Board
Re: Annual RCAB Report for 2013

The Boulder County Resource Conservation Advisory Board (RCAB) has been asked by the Board of County Commissioners to present an annual report on RCAB endeavors and successes. The bylaws recommend the RCAB undertake a number of tasks each year, including, but not limited to:

- Reducing the amount and toxicity of waste generated in the county;
- Researching, reviewing and recommending changes in policy related to waste reduction, reuse, recycling and composting;
- Providing input on the development and management of facilities and programs;
- Advising the Board of County Commissioners on matters affecting facilities and programs funded using revenues generated by the former Boulder County Recycling Sales Tax, including
    - operation and maintenance of the Boulder County Recycling Center (BCRC),
    - the construction, operation and maintenance of composting facilities and equipment,
    - the expansion of the household hazardous waste facility (HMMF);
- Reviewing and making recommendations on county-funded waste diversion programs and activities, as requested by the BOCC; and
- Communicating information between the communities members represent and the Advisory Board.

In 2013, the RCAB undertook many of these initiatives, with these few exceptions: Board members did not specifically provide input on the management of facilities and programs, including the BCRC and HMMF. Neither was there opportunity to comment on composting facilities and equipment, since this infrastructure is currently privately owned and operated.

The remaining initiatives are summarized below.

<u>Reducing the amount and toxicity of waste generated in the county</u>

RCAB made no toxicity recommendations in 2014. Board members contributed to a study of waste diversion and determined a 35% rate through recycling, composting and construction and demolition reuse / recycling. This figure indicates no overall progress towards zero waste since the Zero Waste Action Plan was completed in 2010.

Researching / reviewing and recommending Zero Waste policy changes
The board received updates on a variety of Zero Waste issues in 2013, including:

Facility, policy and program updates:

- Electronics ban education; 2012 Zero Waste Funding; Recycling Center operations; Mid-Level Compost Use Update; HMMF; Spring Cleanup program; Construction and Demolition policy; and community 2012 diversion reporting.

New programs:

- Western Disposal "Diversion Challenge"; Windchime Productions education program; Eco-Cycle "I Choose to Reuse" program; Permaculture principles and new polypropylene recycling opportunities.
- Quarterly education program planning was proposed (January /June) and a subcommittee meeting held in February – only electronics education was completed in 2013
- C & D flyer review (April) – RCAB made formatting recommendations.
- RCAB discussed diversion measures (June) – members asked to hear from the State on their measurement criteria.
- RCAB discussed C & D enforcement (November) and made two recommendations:
    - That a Request for Proposals be developed for Boulder County Land Use to allow for Construction and Demolition plans for BuildSmart projects (to enhance education, enforcement and evaluation)
    - That an Intergovernmental Agreement (IGA) be explored to created complementary education and enforcement provisions in all Boulder County jurisdictions

Reviewing and making recommendations on programs and activities, as requested by the BOCC

Though the BOCC did not ask for any specific review nor recommendations in 2013, members set their agendas with the assumption the BOCC would like RCAB to review and comment on Zero Waste Action Plan (Plan) recommendations. The construction and demolition recommendations mentioned above support C & D recommendations in the Plan. The quarterly education meeting goals are intended to similarly support Plan recommendations: These meetings might be supplanted in 2014 by staff actions.

RCAB also makes an annual recommendation to the BOCC on expenditures of $50,000 worth of Zero Waste Program grants, budgeted by the Resource Conservation Division. Recommendations for the 2013 funding cycle were provided in late 2012 and discussed at the January 2013 meeting. A member subcommittee evaluated 2014 applications in December for presentation to the BOCC in 2014.

Communicating information between the communities members represent and the Advisory Board.

RCAB members shared updates from their various communities at each meeting. In an effort to guarantee a two-way flow of information, a "take-home for councils" message was initiated in 2013. RCAB currently does not measure whether take-home messages are shared with stakeholders.

FINAL BYLAWS September 18, 2002

~~Amended: December 2008~~
Proposed amendments: April 2014

BYLAWS OF THE RESOURCE CONSERVATION ADVISORY BOARD

Article I
Name

Section 1. Name

The name of this committee shall be the Boulder County Resource Conservation Advisory Board.

Article II
Purpose and Policy

Section 1. Purpose

The purpose of the Advisory Board shall be to assist the Board of County Commissioners in reducing the amount and toxicity of waste generated in the county; to research, review and recommend changes in policy related to waste reduction, reuse, recycling and composting; to provide input on the development and management of facilities and programs; and as a result of these efforts to help Boulder County, ~~and~~ its communities, and partners to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution.

Article III
Duties and Responsibilities

Section 1. Policy Development

The Advisory Board shall recommend revisions to the solid waste element of the Boulder County Comprehensive Plan, the Boulder County Zero Waste Action Plan, the Boulder County Environmental Sustainability Plan, and the County's land use regulations which pertain to solid waste, recycling, composting and other waste diversion activities.

Section 2. Review Responsibility

The Advisory Board shall advise the Board of County Commissioners on matters affecting facilities and programs related to responsible materials management. ~~funded using revenues generated by the former Boulder County Recycling Sales Tax~~. Such matters shall include, but shall not be limited to, the operation ~~and~~ maintenance and expansion of the Boulder County Recycling Center; the construction, operation and maintenance of composting and other waste diversion facilities and equipment; and the expansion of the ~~household hazardous waste facility~~Hazardous Materials Management Facility.

~~At the request of the Board of County Commissioners, T~~the Advisory Board will also review and make recommendations on county-funded waste diversion programs and activities.

Section 3. Communication

Advisory Board members shall be responsible for communicating information between the communities they represent and the Advisory Board.

Article IV
Membership

Section 1. Membership

The membership of this Board shall be limited to ~~20~~ 22 members and shall be as representative as possible of the county as a whole. Particular consideration shall be given to geographic representation. The cities and towns within the county (Boulder, Erie, Jamestown, Lafayette, Longmont, Louisville, Lyons, Nederland, Superior, and Ward), the City and County of Broomfield, and Boulder County will each appoint one representative. The Center for ReSource Conservation, CU Recycling, ~~and~~ Eco-Cycle, and Western Disposal Services will each appoint one representative. One representative from an additional hauler will be appointed by the Board of County Commissioners based on applications received. In addition, the Board of County Commissioners will appoint five at-large members.

Section 2. Terms

The term of office for the members of the Advisory Board shall be either two or four years as determined by the appointing jurisdiction.

Section 3. Attendance

In the event that a member is unable to attend a meeting or meetings of the Board, no substitute member shall be appointed to act in the absent member's place. However, in the event that the Chair or the Secretary to the Board has knowledge that a member will be temporarily unable to act for three or more consecutive meetings, owing to absence from the County, illness, interest in any matter before the Board, or any other cause, the Chair or the Secretary may request that the jurisdiction that appointed the board member in question be asked to appoint a replacement member to take the absent member's place during the temporary disability period.

Section 4. Vacancy

In the event of a vacancy, the jurisdiction that appointed the vacating member will be asked to appoint a new representative within 30 days, or as soon as practicable.

Article V
Officers

Section 1. Election of Officers

The officers of the Resource Conservation Advisory Board shall consist of a chairperson and a vice-chairperson and shall be elected ~~at the first regular meeting following the annual appointment of the new~~

~~members by the Board of County Commissioners~~from the appointed members at the May business meeting each year, or the first regular business meeting thereafter with a quorum. Officers will serve ~~by rotation~~ on a one-year basis~~, with the vice-chairperson automatically moving up to chairperson, and a new vice-chair being selected by a random drawing until all board members have served~~ with a chair and vice-chair being selected by nomination and majority vote. ~~The director of Administrative Services, or a staff member designated by the Director,~~ A staff member designated by the Board of County Commissoners or their designee shall serve as secretary to the Resource Conservation Advisory Board.

If the chair resigns before the end of their term, then the vice-chair will assume the chairperson position and a new vice-chair will be elected at the next regular business meeting. If the vice-chair resigns, then a new vice-chair will be elected at the next regular business meeting.

Section 2. Duties

The chairperson, or in the absence of the chairperson, the vice-chairperson, shall conduct all meetings of the Board; maintain contact with staff of Administrative Services, Resource Conservation Division, and when appropriate, the Board of County Commissioners; and perform other duties designated by the Resource Conservation Advisory Board.

Article VI
Meetings

Section 1. Meetings

The Resource Conservation Advisory Board shall meet at least once every two months, at a time acceptable to the majority of the members. Special meetings may be called by the chairperson, or by the Director of Administrative Services, with one week's notice. All meetings of the Resource Conservation Advisory Board shall be open to the public.

Section 2. Quorum

A simple majority of the total membership of the Board shall constitute a quorum.

Section 3. Voting

All official actions of the Advisory Board shall be taken by vote, with the majority of those members present and voting needed to approve a vote, except as otherwise expressly provided in these bylaws. All other issues shall be decided by consensus, meaning the absence of strong objection of one or more members.

Section 4. Public Meetings and Notice

All meetings at which three or more members are present, and at which any public business is discussed or any formal action taken, shall be open to the public at all times, in accordance with the Colorado Open Meetings Law, Part 4 of Article 6 of the Title 24, C.R.S., as amended. Chance meeting or social

gatherings at which the discussion of public business is not the central purpose shall not be required to be noticed or held in public, as provided by the Open Meetings Law. Meeting agendas and, when appropriate, accompanying press releases, shall be posted at the Boulder County Courthouse and at the Boulder County Recycling Center. Agendas shall be provided in advance to the County's Public Information Office.

Section 5. Record of Proceedings

The Advisory Board shall record its proceedings and written minutes providing a summary of decisions and actions taken shall be kept. Recordings and written minutes will be open to inspection by the public during regular County office hours.

Section 6. Conflict of interest

Any member with a conflict of interest as defined by state law shall disclose his or her interest and shall abstain from discussion and voting on that item, and the meeting recording and minutes shall note such action.

Article VII
Subcommittees

Section 1. Creation

Subcommittees, standing or special, shall be appointed by the chairperson as the Board shall from time to time deem necessary to carry on the work of the Board.

Article VIII
Parliamentary Authority

Section 1. Parliamentary Authority

Robert's Rules of Order shall govern the conduct of the Board's meetings to the extent practicable.

Article IX
Amendments

Section 1. Amendments

These bylaws can be amended at any regular meeting of the Board by a majority vote of the members present, provided that the amendment has been submitted in writing at the previous regular meeting. Amendments not initiated as the result of action by the Board of County Commissioners shall be approved by the Board of County Commissioners.

FINAL BYLAWS

September 18, 2002

~~Amended: December 2008~~
Proposed amendments: April 2014

APPROVED BY BOARD OF COUNTY COMMISSIONERS

_____
Ben Pearlman, Chair

_____
Date

- Review responsibility (Slides 10 and 11) Lisa S motioned and Bridget seconded. Unanimously approved.

4. To conclude the bylaws discussion, revised slides were reviewed with all changes indicated in red, and the changes were approved in their entirety by consensus. It was agreed that this approval of final amendment language would meet the requirement in the bylaws (Article IX Section 1) that all amendments be submitted in writing at one meeting and approved at the next.

   The election of the Vice-Chair was tabled again until the May meeting.

5. **Resource Conservation Division Update: Compost Education Program.** Mark W reviewed a PowerPoint slide presentation provided in advance. He noted that 1,000 to 2,000 people have attended RCD's backyard composting workshops in the past 10+ years. It was suggested that some of these people be contacted to find out if they are composting so as to gauge the success rate of this education. It was noted that some homeowners associations (HOAs) try to ban this activity.

6. **Special Topic: Annual Report from RCAB to BOCC:** This item was tabled until the May meeting.

7. **Special Topic: Community Annual Reports:** Lisa S handed out the RCAB Community Reporting Forms that each community is asked to complete for 2013, and reviewed the questions for clarity. Jack noted that institutions aren't able to answer some of the questions and requested changes to the survey to address these problems.

8. **Community Reports:**

- Eco-Cycle – May 10th event open house celebration and concert, Hard to Recycle events May 3rd and 17th Superior/Lafayette
- Lisa S. Superior is considering a single-use bag fee
- Jamestown – Long term recovery relief staff Sue Anderson and her staff have resigned.
    - Received 117,000 GOGO grant for park enhancements
    - Cisterns are now in Jamestown
    - Stream corridor project plan still happening
    - Rocks that were blasted being used to help with erosion control on stream beds.
    - Mennonites are coming to rebuild nine houses in Jamestown
    - Jamestown Newsletter – let Bridget know if you would like to receive this.
- Lisa F provided in writing –
    - Action Item for Councils: The Board of Boulder County Commissioners will likely have made a decision about future sustainability funding. Please share the news with your councils.
    - The link for the Commercial Diversion Tool our office previously recommended for your review did not direct to the appropriate page. This link works better: http://www.denvergov.org/environmentalhealth/EnvironmentalHealth/EnvironmentalQuality/CommercialWasteReduction/tabid/445104/Default.aspx Look for "Commercial Pick" towards the bottom of the site.
    - Construction RFP is drafted, but we are re-considering whether to release it. An RFP for what is virtually a no-cost service does not seem to be in anyone's best interest.

The County has, instead, asked for a proposal about next steps in deconstruction advising.

- The Paint Bill in the state legislature was to have been heard April 17. Hilary can provide an update.
- Zero Waste efforts in the mountains are progressing. Hazardous material collections have been scheduled, along with electronics collection event. Staff plans to survey transfer station users later this month.

9. **Next Month's agenda items:**
    - Bylaws
    - Election
    - Special Topic – Follow up on Recycling Center from March Meeting
    - Resource Conservation Division Update: Spring Cleanup successes in 2013 and plans for 2014
    - Special Topic: Complete Community Annual Reports
    - Topics for the year ahead (tabled until June)

10. Any other Business - none

11. Meeting Adjourned: 6:40 p.m.

Report to RCAB
May 28, 2014

At the April 23, 2014 RCAB meeting a number of questions were raised regarding the gate payments made to haulers for delivery of materials to the Boulder County Recycling Center.

- How do the payments made by Boulder County compare to other processing facilities?
- Why can't Boulder County pay more?
- Has there been a decrease in tons over time?

Comparison of Rebates

	Single Stream Residential													
	2013 Gate Payments													
	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Avg	2014
BC Recycling Center	$ 15.00	$ 5.00	$ 5.00	$ 7.00	$ 5.00	$ 10.00	$ 10.00	$ 5.00	$ 10.00	$ 5.00	$ 5.00	$ 5.00	$ 7.25	$5.00
Waste Management Franklin St -Hauler	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+	$9.00+
Best Way, Colorado Springs *	$ 15.02	$ 21.86	$ 20.05	$ 24.32	$ 19.51	$ 18.43	$ 19.28	$ 17.28	$ 16.76	$ 16.57	$ 16.05	$ 14.69	$ 18.32	$18.32
Larimer County/Waste Management **	$ 24.00	$ 22.50	$ 22.50	$ 24.00	$ 22.50	$ 21.50	$ 23.00	$ 22.50	$ -	$ 15.25	$ 25.25	$ 20.75	$ 20.31	$20.00
Alpine Recycling - 2013 Thornton ***	$ 24.46	$ 24.10	$ 26.00	$ 25.27	$ 21.15	$ 23.04	$ 23.04	$ 21.10	$ 19.30	$ 13.21	$ 17.31	$ 14.11	$ 21.01	$17.200
Waste Management Denver Contract ****	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$ 31.00	$31.00

Best Way *	Best Way stopped rebates for single stream residential from Jany - March but are back to similar numbers as above. Best Way only accepts larger commercial haulers and their rates are designed to bring in Waste Management and Waste Connections.
Larimer County MRF**	The contract between Larimer County and Waste Management is ten years old. Larimer County bid the contract in order to obtain the **highest prices paid for rebates**. Waste Management bid the highest rebate and won the bid. Waste Management indicates that this contract is a burden to their operations and they won't bid at these prices when the contract is re-bid. In a recent discussion with Stephen Gillette, Solid Waste Manager in Larimer County, he indicated that he is in discussions with Waste Management to address these financial issues. The contract expires at the end of 2014 and Stephen believes that rebates offered to Larimer County will be reduced when the contract is bid. Zero rebates were paid in Sept due to the flood and payments were reduced in Oct.
Alpine Recycling: City of Thornton/Northglenn bid ***	The City of Thornton/Northglenn 2014 bid, **designed to garner the highest rebates possible**, resulted in a $17/ton price from Alpine that is adjusted monthly.
	Waste Management bid $10.65/ton with a premium of $5/ton if glass was excluded.
	Alpine Recycling does not accept spot deliveries.
Waste Management - Franklin St ****	Waste Management at Franklin St does not accept spot deliveries.
	A large hauling company that delivered over 500 tons per month of residential single stream to Franklin St under contract received between $9.00 and $10.00/ton in 2013
	The City of Denver has a contract for a payment of $31.00/ton.

Can the Boulder County Recycling Center Offer Higher Rebates?

The Boulder County Recycling Center is an Enterprise in Boulder County.

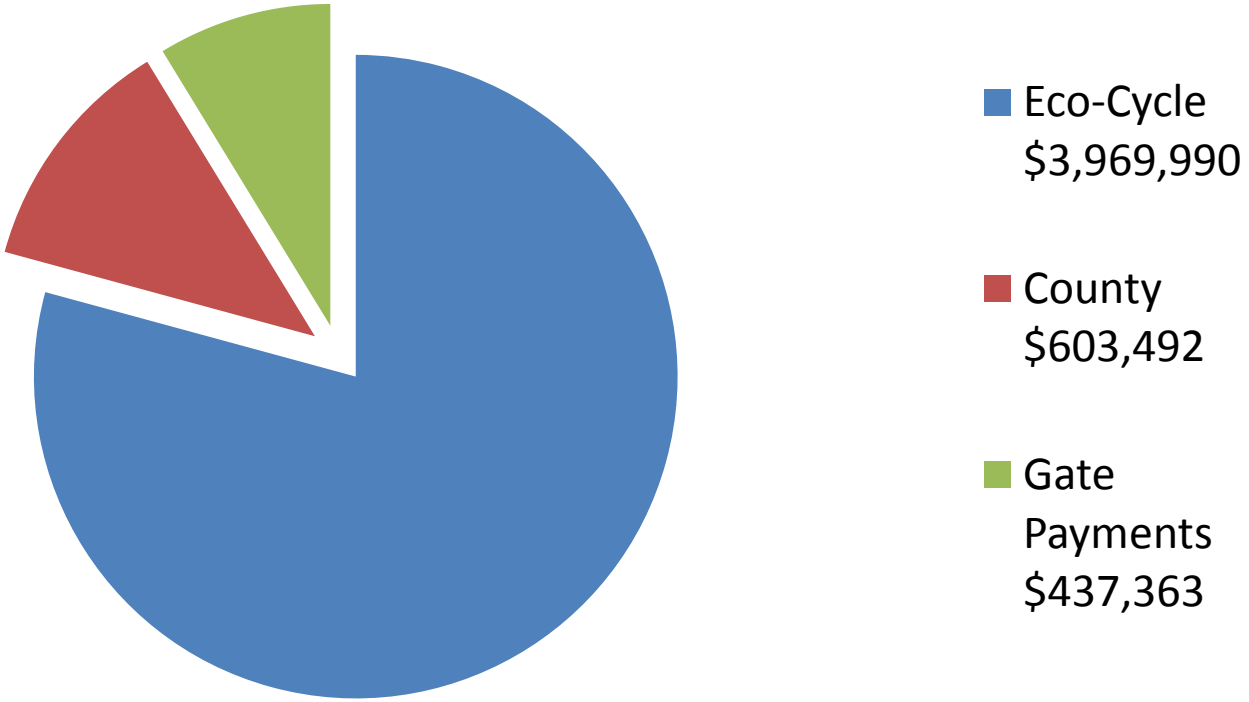
This means we manage a $5M business for Boulder County and the facility must stand on its own, financially.

No funds from the General Fund (real estate taxes) are transferred to the Enterprise Fund and no funds from the Enterprise are transferred to the General Fund.

In 2013 there expenses exceeded revenues by $60,000.

No profits have been made for three years.

Recycling Center
Expenses $5,010,845
Revenues $4,953,236



How are rebates determined?

The revenues derived from the sale of materials are calculated.

All operating expenses incurred by Eco-Cycle during the month are subtracted from the revenues.

All county expenses incurred during the month are subtracted from the remaining revenues.

Any remaining funds are available for consideration for rebates.

Lou Perez and Jeff Callahan then discuss what we know of market trends – are they likely to stay the same, increase or reduce on a per ton basis for the next month and any projections we may have for a longer look.

> NOTE: We do not see any strengthening in the markets for several months. We may be at a new 'normal' relative to low market prices.

Eco-Cycle calculates the per ton value of the materials for the single stream materials based on the value of all the commodities sold that comprise the single stream materials.

How are rebates determined?

Once the value of the material has been calculated, it is allocated to the haulers based on the tons of single stream they delivered.

Due to expenses and the market prices in some months, there are sufficient funds to pay the haulers and also to add to the reserve.

In some months, when the rebates are paid, it places the fund in a deficit position for that month.

Sometimes, the system can recover during the year and sometimes, the revenue/expense ratio does not allow for recovery.

In March, 2014, total rebates were $24,217. The deficit for the month was $46,245. This was due to expenses associated with the replacement of one of our 12 year old overhead doors ($21,000), but is also reflective of the impact of paying the rebates ($24,217).

However, approximately $130,000 was reserved in Jany and Febry which will be used to fund this monthly deficit.

Gate Payments

The following slide shows the monthly totals for gate payments.

In 2008, when the recession began, newspaper prices fell as low as $50/ton. At that time no payments were made to the haulers.

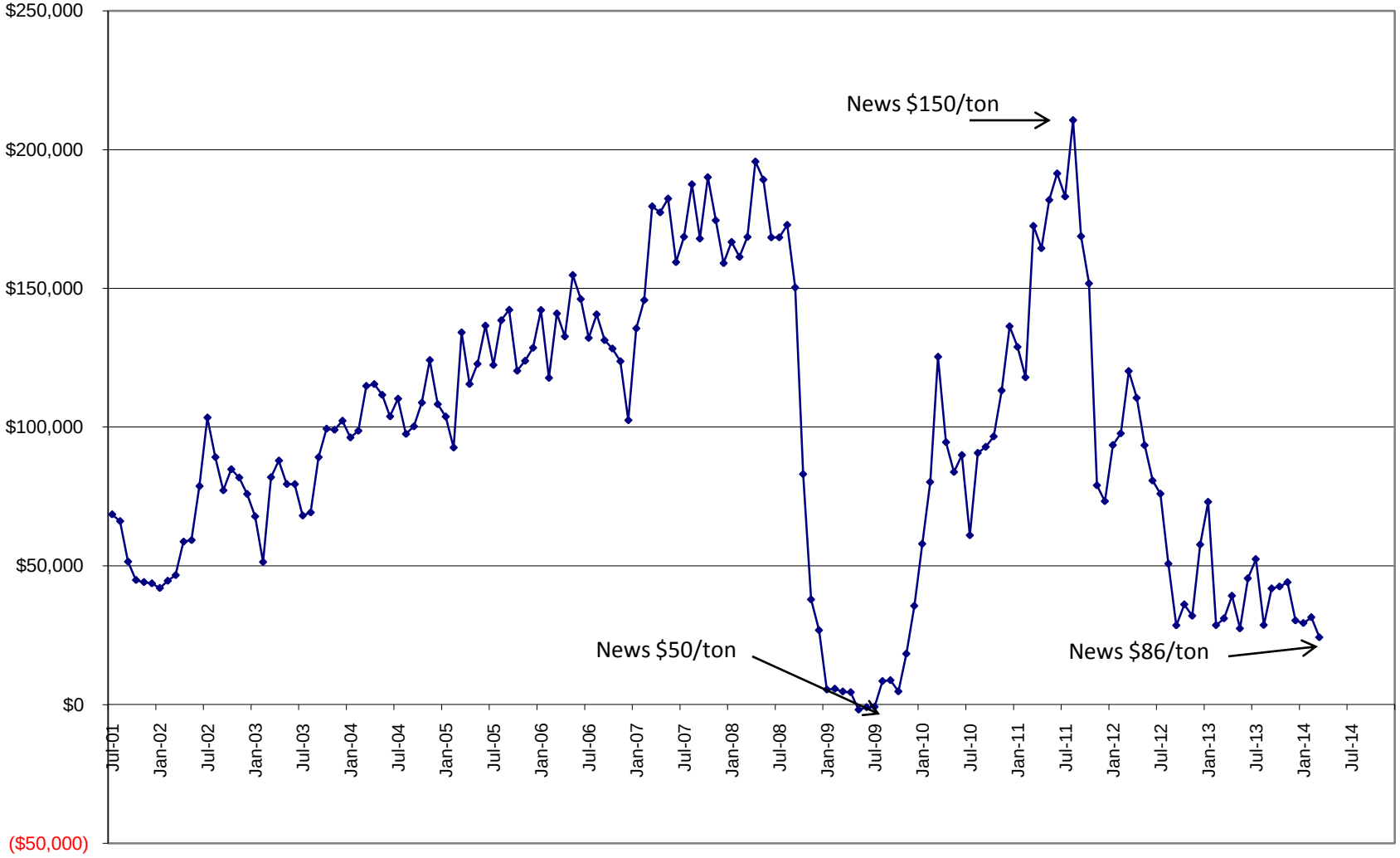
In 2009, Chinese purchasers bid up the market to unheard of levels and significant payments were shared with the hauling community.

We now face newspaper prices that are around $86/ton.

When market prices are less than $100 per ton the Enterprise Fund is stressed.

With paper prices significantly depressed, rebates have been reduced.

Gate Payments



Can The Boulder County Recycling Center Offer Higher Rebates (2)

The following table shows the monthly tons of residential single stream delivered to the Boulder County Recycling Center in 2013.

Also shown is the per ton amount that would need to be added to the Boulder County rebate for residential single stream in order to match the pricing paid by Waste Management to Larimer County under their contract.

If Boulder County had matched the contract price paid by Waste Management to Larimer County, an additional $588,254 would have been required.

The total rebates paid in 2013 were only $437,363, so this would represent a very large increase in payments.

As discussed earlier in the presentation, the Enterprise experienced a $60,000 deficit in 2013.

Note: To show a 'typical' year a value was put into the Sept cell, since Waste Management did not pay any rebate in Sept.

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	
BC Recycling Center	$ 15.00	$ 5.00	$ 5.00	$ 7.00	$ 5.00	$ 10.00	$ 10.00	$ 5.00	$ 10.00	$ 5.00	$ 5.00	$ 5.00	
Larimer County/Waste Management **	$ 24.00	$ 22.50	$ 22.50	$ 24.00	$ 22.50	$ 21.50	$ 23.00	$ 22.50	$ 22.50	$ 15.25	$ 25.25	$ 20.75	
Single stream residential tons	3172	2563	2763	3181.5	3408.07	3401	3924	3822.79	3121.86	3246.29	2752.41	3308.46	
Additional $/ton to match Larimer	$ 9.00	$ 17.50	$ 17.50	$ 17.00	$ 17.50	$ 11.50	$ 13.00	$ 17.50	$ 17.50	$ 10.25	$ 20.25	$ 15.75	
Total cost to match Larimer SSR	$ 28,548.00	$ 44,852.50	$ 48,352.50	$ 54,085.50	$ 59,641.23	$ 39,111.50	$ 51,012.00	$ 66,898.83	$ 54,632.55	$ 33,274.47	$ 55,736.30	$ 52,108.25	$ 588,253.62

Have Material Deliveries Decreased?

The answer is yes and no.

In 2008, Bestway Disposal began delivering materials from Colorado Springs.

In 2012, subsequent to the opening of their own processing facility, they withdrew their material.

Similarly, we have worked off and on with Waste Management to provide processing capacity during periods when they were receiving more materials then they could process.

Neither of these companies can be considered ‘Boulder County’ tons and the material was delivered under unusual circumstances.

The following tables show the total tons of material received and also the refined table showing the deliveries of the ‘Boulder County’ tons.

Tons Received

Have Material Deliveries Decreased?

The delivery of recyclable materials from the Boulder County community has not decreased.

This is due largely to the significance of our municipal partners who deliver materials to the publically owned facility:

Longmont municipal collection, City of Boulder Ordinance, City of Louisville and City of Lafayette by municipal contract, all direct their materials to the facility.

Summary

While there are disparities in the payments made at the four processing facilities along the front range, the prices associated with payments from Alpine and Waste Management are based on competitively procured public contracts that are designed by the government sponsors to garner the highest rebate possible. The private sector companies bid against each other to 'buy' these accounts. Boulder County is not party to the contracts and we do not benefit from the contracts.

Given the current market prices we are receiving there are no surplus funds to offer to the hauling community. Although when markets were high, the County paid significant rebates.

There has not been a reduction in the delivery of materials from the Boulder County community.

RCAB – Zero Waste Update June 2014

Action Item for Councils: Councils are encouraged to support the two new Zero Waste working groups and also be aware that both Lafayette and Louisville have recently increased their commitment to Zero Waste services – both recycling and composting.

The **Paint Bill** in the state legislature was signed by Governor Hickenlooper and will take effect July 1, 2015, or sooner if ready. Boulder County staff members are helping with design and promotion of the new initiative.

Boulder County will be coordinating Zero Waste efforts at the **Boulder County Fair** again this year. Volunteers are needed for this important work – especially at the more popular events. Let Mark know if you are interested in helping out.

Preventing **Food Waste** continues to be a popular topic for communities throughout the U.S. Some RCAB members might recall the presentation we received from "American Wasteland" author Jonathan Bloom on this topic two summers ago. A special forum will take place Oct. 16 in San Francisco: www.ZeroFoodWasteForum.org Let Lisa Friend know if you are interested in this topic. The City of Boulder and Boulder County are considering sending a team to the forum.

Boulder County

Sustainability Office

Street Address: 1325 Pearl Street 13th Boulder, Colorado 80302
PO Box 471, Boulder, CO 80306 • Tel: 303-441-4565

Boulder County Resource Conservation Advisory Board Meeting
Informal Notes: June 25, 2014

Present: Jack DeBell – CU Recycling (phone), Juri Freeman – At Large (phone), Lisa Friend – Boulder County, Charles Kamenides – Longmont, Shari Malloy – At Large, Dan Matsch – Lyons, Lisa Morzel – At Large (phone), Mark Persichetti – Louisville, Tim Plass – Boulder

Active Members Not Present: Alexander Armani-Munn – Nederland, Frank Bruno – At large, Tom Dowling – Lafayette, Shirley Garcia – Broomfield, Bridget Johnson – Jamestown, Suzanne Jones – Eco-Cycle, Lisa Skumatz – At Large (phone), Dan Stellar – CRC, Holly Running-Rabbit – Ward, Martin Toth - Superior

County Staff: Hilary Collins – Commissioners' Office/Sustainability, Mark Wesson – Boulder County Resource Conservation Division (BCRCD)/ Commissioners' Office/Sustainability.

Guests: Michelle Barnes – CRC, Jamie Harkins – City of Boulder

A quorum of 10 RCAB members was not present and so no formal business could be conducted.

Notes:

1. Presentation on the City of Boulder Strategic plan and their single-use bag fee program
   Jamie Harkins, Business Sustainability Specialist for the City of Boulder, provided a brief presentation. PowerPoint slides are attached.

There was a question about the legality of requiring businesses to recycle/compost: The answer was that yes, there are ways to do this.

There was a question about the enforcement of current regulations: The response was that it is difficult to enforce things such as Construction and Demolition diversion unless a community has an inspector to go out and enforce the regulations.

2. Other business

It was noted that Art-Parts is still interested in presenting to the RCAB. They have approached the City of Boulder about 6400 Arapahoe being a home for their collection/distribution operations. They need around 2500 square feet. It was suggested that a few minutes be set aside in future agendas for public comment and this could present an opportunity for Art Parts to speak.

3. Community Reports

- **Tim Plass** - Boulder is continuing to move forward with bear-proof compost containers for all residents west of Broadway. They are hoping to have those in place by August. They are being tested in Montana.
- **Michelle Barnes** - There is a promotion at ReSource for flood victims, which is offering discounts through the end of June. Also for flood victims, CHaRM is waiving its gate fee and offering a 30% discount on drop off of certain materials as well as discount on compost tea. CRC has created a community report and will send it to RCAB members in an email.
- **Jack DeBell** - The CU Recycling facility is being relocated. Contact Jack if you are interested in the discount offer that Rubbermaid has made to CAFR – a 30% discount on certain products. Minimum purchase is case quantities; free shipping over $500.
  CU has submitted an updated flood recovery plan to the state. FEMA suggested possible assistance to help mitigate future disasters, perhaps through developing resource recovery parks? Could this be a multi-county plan?
- **Charles Kamenides** - Longmont's Rhythm on the River event is coming up – the city expects 30,000 people to attend. It is going to be Zero Waste event again this year, and Charles is looking forward to a high diversion rate (It was over 90% last year). A lot of people in Longmont are recycling electronics, and people are knowledgeable on what to do with their waste. Longmont is continuing to put recycling bins out into the parks system.
  Question: What is the turnaround time for special collection events in Longmont? Not too long, between 10 and 15 minutes, but lines can appear long. The city might have to do something about the traffic during events. Dan Matsch says people show up early, so they had to hire an off-duty cop to stop people from illegal dumping.
- **Dan Matsch** - Lyons hosted a clean-up day on June 7th. Lots of CHaRM items were received – just over 3,000 lbs of electronics. The event was scheduled at the last minute, so the Town ordered some roll-offs for trash that weren't needed.
- **Lisa Friend** - Lisa submitted her written report in advance of the meeting:
  - Councils are encouraged to support the two new Zero Waste working groups and also be aware that both Lafayette and Louisville have recently increased their commitment to Zero Waste services – both recycling and composting.
  - The **Paint Bill** in the state legislature was signed by Governor Hickenlooper and will take effect July 1, 2015, or sooner if ready. Boulder County staff members are helping with design and promotion of the new initiative.
  - Boulder County will be coordinating Zero Waste efforts at the **Boulder County Fair** again this year. Volunteers are needed for this important work – especially at the more popular events. Let Mark know if you are interested in helping out.
  - Preventing **Food Waste** continues to be a popular topic for communities throughout the U.S. Some RCAB members might recall the presentation we received from "American Wasteland" author Jonathan Bloom on this topic two summers ago. A special forum will take place Oct. 16 in San Francisco: www.ZeroFoodWasteForum.org Let Lisa Friend know if you are interested in this

topic. The City of Boulder and Boulder County are considering sending a team to the forum.

- **Mark Persichetti** – The Louisville council rejected staff's recommendation to hire Republic Service and after much public testimony directed staff to negotiate with Western Disposal Services. There was concern about transporting material out of the county, as Republic had proposed, because of the emerald ash borer quarantine. The vast majority of people have small containers for the Pay as You Throw system (PAYT), so Western will raise their rates 22%. There were comments that Republic's bid did not truly represent PAYT, as Western's did. All recyclable materials will go to the Boulder County Recycling Center, but there is no local stipulation for compost. Mark also noted that a year ago the city decided to do a Greenhouse Gas / carbon footprint study. The results haven't been formally presented to city council yet but probably will be posted on their website soon. Broomfield is the only other city that has done a study like this. The price was $10,000.

Boulder County Resource Conservation Advisory Board - July 23, 2014
Consideration of Staff Proposal for Two New RCAB Working Groups

1. Infrastructure Working Group

Purpose:

- Research and define capacity needs countywide for next 15 years for recyclables, compostables, C&D and CHARM materials from the residential, commercial and multifamily sectors
- Estimate timing of infrastructure needs - short and long term
- Evaluate how existing facilities and new facilities could meet the needs identified
- Define roles to be played by the different partners
- Re-evaluate needs due to changing circumstances over time
- Meeting Frequency: At least monthly
- Duration: 6 months initially, and on-going as needed
- Deliverable: Final report to RCAB early 2015
- Support: County staff will chair and provide minutes

Potential Membership (suggested as a starting point for discussion):

RCAB Representatives
Charles Kamenides, Longmont
Frank Bruno, WDS
Lisa Morzel, At Large
Suzanne Jones, Eco-Cycle
Tim Plass, Boulder County
Lisa Skumatz, At large
Bridget Johnson, Jamestown
Juri Freeman, At Large
Jack DeBell, CU Recycling
Dan Stellar, CRC

Others
Dan Matsch, Lyons
Lou Perez, Eco-Cycle
Boulder staff representative
Doug Short, Lafayette
Dave Szabados, Louisville
Kevin Afflerbaugh, WDS
Ron Flax, Boulder County Land Use
Joe Gierlach – Nederland Mayor
Jared D'Arcey, CRC

County Staff
Jeff Callahan, RCD
Darla Arians, RCD
Hilary Collins, Sustainability

As-Needed County Staff
Lisa Friend, Sustainability
Jana Petersen, Admin. Services

2. Education and Outreach Working Group

Purpose:

- Define scope –include hazardous materials education or not, residential and/or commercial, general messaging or specific, in-school education, etc.
- Define the status quo for education and outreach, and what's working and what isn't
- Identify existing collaboration and potential to expand
- Identify major messages (information needs) we want to address – with focus on "why messages" rather than "how to messages"
- Where are biggest savings in terms of collaboration
- What is the process for identifying needs and getting messages approved
- Define roles and resources
- Meeting Frequency: Every other month
- Duration: On-going
- Deliverables: Implement successful, collaborative education and outreach on an on-going basis. Develop measurement criteria and begin to measure success.

- Support: County staff will chair and provide minutes

Potential Membership (suggested as a starting point for discussion):

RCAB Representatives
Charles Kamenides, Longmont
Shari Malloy, At Large
Bridget Johnson, Jamestown
Holly Running-rabbit, Ward
Dan Stellar, CRC
Shirley Garcia, Broomfield
Lisa Friend, Boulder County
Martin Toth, Superior
Alexander Armani-Munn, Nederland

Others
Boulder staff representative
Kevin Afflerbaugh, WDS
Marti Matsch & Randy Moorman, Eco-Cycle
Cyndra Dietz, Eco-Cycle
Dara Ward, StVrain Valley School District
Ghita Carroll, Boulder Valley School District
PACE Program representative
Dan Baril, CU Recycling
Melanie Burrow, Composting Trainer

County Staff
Darla Arians, RCD
Hilary Collins, Sustainability

As-Needed County Staff
Gale Elstun, RCD
Pam Milmoe, Public Health

3. Question on Open Meeting Requirements for RCAB Subcommittees and Working Groups

Mark T. Doherty, Assistant County Attorney provided the following guidance:

Under Colorado's Open Meetings Law (C.R.S. 24-6-401 et seq.), local public bodies are required to provide notice prior to and keep open to the public, certain meetings. Local public bodies are defined under C.R.S. 24-6-402 as:

[A]ny board, committee, authority, or other advisory, policy-making, rule-making, or formally constituted body of any political subdivision of the state and any public or private entity to which a political subdivision, or an official thereof, has delegated a governmental decision-making function[.]

The controlling terms here are "advisory", "policy-making", "rule-making" and "decision-making function". Arguably, RCAB fits within this definition since it is an advisory body of the BOCC. As such, it is subject to the notice and open meeting requirements of the law. However, subcommittees or working groups of RCAB would not be considered to be public entities because they are simply providing information which RCAB will use to advise the board. They will not be involved in "policy-making", "rule-making" and "decision-making" activities. So, I do not see any need to notice the meetings of the subcommittee or these working groups.

Obviously, anytime RCAB meets to discuss recommendations, reports or other findings of those groups, the meeting requires proper notice.

Standing Topics:

- Review of contracts managed by the Resource Conservation Division for education, drop-site collection, electronics management, recycling center operations, etc.
- Report on success of Commercial Education Programs / PACE and other education
- Annual election and bylaws review
- Report on success of compost diversion / use programs and C&D diversion programs
- Report on success of the HMMF
- Communitywide diversion report
- Countywide education and outreach efforts and successes; plans for improvement
- CDPHE regulations update OR strategic grant application schedule for coming year, including applications by the county, municipalities and private-sectors / NGOs
- Regional sharing of waste-related date and information, hot topics and innovations
- ZWOP subcommittee assignment; report on status/success of previous grantees
- Success of zero waste events countywide and plans for next year
- Set agenda for coming year

Resource Conservation Division Updates:

- quarterly reports on Recycling Center operations (four of these)
- report on countywide education efforts and successes
- compost education successes and plans
- Spring-Cleanup history and successes; plans for coming summer
- report on drop-box use
- report on Boulder County in-house and policy efforts
- report on electronics diversion as measured by County
- report on diversion at the Boulder County Fair
- holiday diversion plans and efforts (optional)

Additional Topics that have been proposed, possibly resulting in field trips or special public meetings – vote for 10 of these 19:

- Report on the year's successes from ZWOP grant winners (under "standing topics") could also be an OPTIONAL SPECIAL meeting at which the grantees would present and to which municipal representatives and the media could be invited.
- Recap of CAFR / SWANA presentations? This could be a special meeting where we get a chance to see any locally developed presentations we might have missed and to which municipal representatives and the media could be invited.
- Additional compost topics, including update on medical marijuana, land use, compost for open space, etc.
- Recycling, compost, re-use "Tour": This could be a special meeting to which municipal representatives and the media could be invited.
- product stewardship update, including new mattress and battery initiatives
- legislative subcommittee
- Options for biomass energy production – request special presentation by SERA and the city of Longmont
- Community-based social marketing – special program
- Telephone book opt outs – not supported by Boulder County Zero Waste Action Plan; could be discussed with next plan update in future years
- Update on USDA grant
- Longmont – report on mall deconstruction
- Plans for ZWAP update
- Source reduction through the sharing economy – discussion?
- Food waste reduction / prevention options
- Art Parts
- RE-Trac database tutorial from EPA
- Report on flood cleanup
- Report on electronics diversion since new law took effect

Boulder County In-House Waste Diversion

2013 Annual Report

Sing

In 2013, the county recycled ***259,688 pounds (129.8 tons) of single-stream recyclables*** and composted ***298,663 pounds (149.3 tons) of food waste and other compostables.*** Given the county landfilled ***397.87 tons of trash***, this creates a baseline diversion rate of 41% by weight when considering only single-stream recycling, compost, and trash streams.

Through the combined effort of recycling and composting, the county saved♦:

394.52 metric tons of greenhouse gas emissions

Through recycling, the county saved♦♦:

15,065 gallons of gasoline (energy equivalent)

61 cars off the road for a year

2,519 pounds of toxic air pollutants

71 pounds of water pollution

658 pounds of toxic herbicides

263,933 pounds of substances that threaten human health!

♦ Combination of Eco-Cycle proprietary formula and Western Disposal proprietary formula
♦ ♦Eco-Cycle proprietary formula

Other In-House Diversion Efforts

Description	Pounds	Tons
Yard & Wood Waste	**145,940**	**72.97**
Confidential Paper*	**140,529**	**70.26**
E-Waste Round Ups	**12,518**	**6.26**
Electronics	11,592	5.8
Cell Phones	35	<1
Scrap Metal	565	<1
Cables & Wires	146	<1
Cardboard/paper	78	<1
Cartridges	54	<1
Plastic Bags	8	<1
Block Styrofoam (est.)	40	<1
Construction & Demolition	**26,600**	**13.3**
Hard & Soft Cover Books	**3,100**	**1.55**
Hazardous Waste	**1,714**	**0.86**
Paint (latex and oil based)	560	<1
Ink & Toner Cartridges (348)	**1,044**	**<1**
Spring Clean-Up: Wood Recycled	**400**	**<1**
Spring Clean-Up: Metal Recycled	**500**	**<1**
Alkaline Batteries	**202**	**<1**

This effort saved 1,194 (30-foot) trees

*Each ton (2000 pounds) of paper recycled saves 17 mature trees: www.**recycling**-revolution.com/**recycling**-facts.html*

Zero Waste Trainings

Ten (10) zero-waste trainings were conducted in 2013, in which 179 employees attended.

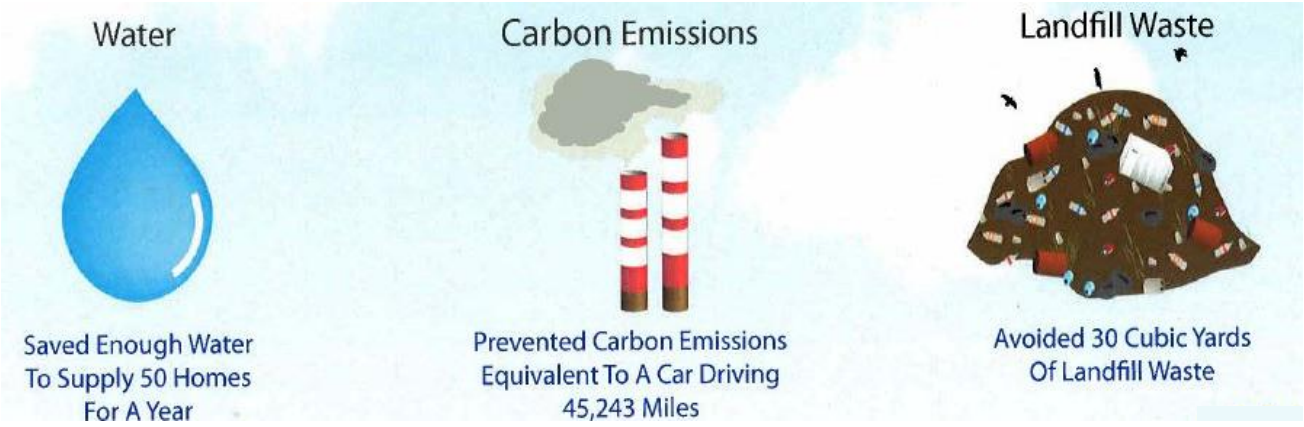
More Diversion Efforts	*Pounds*	*Tons*

Fleet	Batteries (119)	**3,927 lbs.**	**1.96 tons**
	Motor Oil (2,810 gallons)	**19,670 lbs.**	**9.84 tons**
	Anti-Freeze (875 gallons)	**7700 lbs.**	**3.85 tons**
	Air filters	**24 air filters recycled**	
	Tires (293 tires)	**14,064 lbs.**	**7.03 tons**
	Scrap Metal	**105,260 lbs.**	**52.6 tons**

Parks & Open Space: Community Forestry Sort Yards (CFSY)

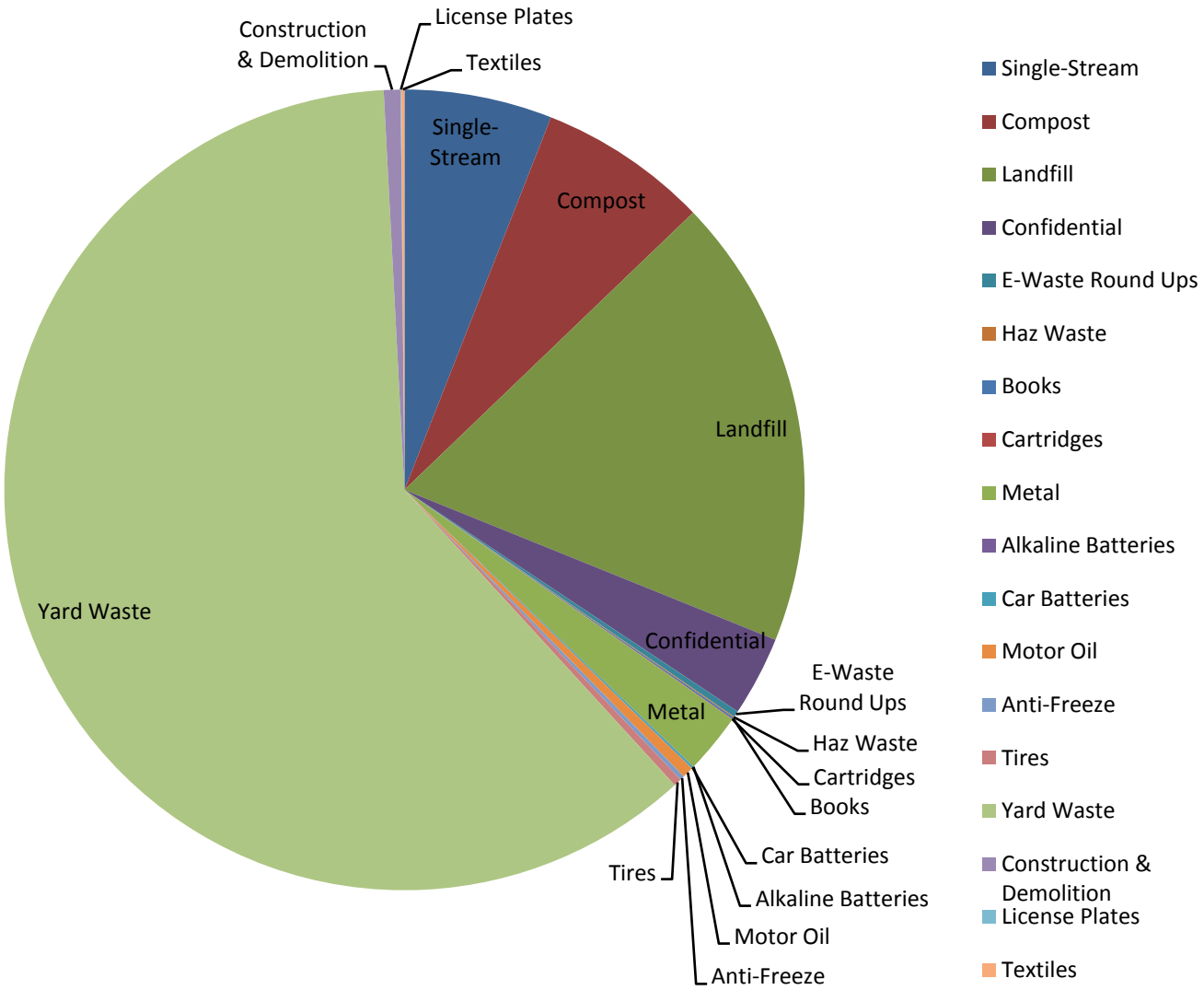
	Slash (brush & limbs) *Of this total, 96.6% was ground for compost*	**2,091,400 lbs.**	**1,045.7 tons**
	Wood Waste *167.3 tons were used as biomass fuel; the rest was ground for compost*	**415,800 lbs.**	**207.9 tons**
DMV	License plates recycled *(in Longmont, Boulder & Louisville)*	**1,242 lbs.**	**0.62 tons**
Architects	Construction & Demolition Metal recycling *(aluminum, copper, brass, radiators, wires, motors)*	**2,874 lbs.**	**1.44 tons**
Recycling Center	Textiles (clothes, footwear, accessories, linens)	**5,304 lbs.**	**2.65 tons**

This effort had the following environmental impacts:



Diversion Breakdown

With these additional diversion programs, **the County's in-house diversion rate reaches 82% by weight.**



This report was prepared by the Boulder County Resource Conservation Division. If you have questions or comments, or if you would like to add additional diversion efforts to this report, please contact Veronica Martinez by phone at 720-564-2250 or e-mail at vmartinez@bouldercounty.org.

RCAB – Zero Waste Update July 2014

Action Item for Councils: As in June, Councils are encouraged to support the two new Zero Waste working groups and also be aware that both Lafayette and Louisville have recently increased their commitment to Zero Waste services – both recycling and composting.

Boulder County's in-house zero waste program is reporting a 81% waste diversion rate – see report attached.

Boulder County will be coordinating Zero Waste efforts at the **Boulder County Fair** again this year. Volunteers are still needed for this important work – especially at the more popular events. The Fair starts Friday, 8/1/14 and concludes Sunday, 8/10/14. Four hour shifts available daily: 2-6 p.m.; 6-10 p.m. Try this easy sign up at **http://www.bouldercounty.org/jobs/vol/pages/jobdetails.aspx?jobID=250** Thanks to those who have already registered.

A special **Food Waste Prevention** forum will take place Oct. 16 in San Francisco: www.ZeroFoodWasteForum.org

USDA funded Zero Waste **initiatives in the mountains** this summer helped divert more than 10 tons of hazardous waste and electronics – many thanks to Mark Wesson for coordinating these activities!

Colorado new paint stewardship law becomes effective July 1, 2015. At its July meeting, the Colorado Product Stewardship Council (chaired by Hilary Collins) decided that it will evaluate mattresses and batteries (rechargeable and single use) for possible legislative action in 2015 or 2016.

Summary Results, Highlights, and Implications of the 2014 RCAB Boulder County Community Survey (2014 Reporting of 2013 Data)

Prepared by:

Lisa A. Skumatz, Ph.D., Committee Member, SERA

Prepared for:

Boulder County Resource Conservation Advisory Board (RCAB)

Draft, July 23, 2014

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Introduction

This document summarizes the results of the the information received in the Boulder County / RCAB Community survey, collected in 2014, but reporting 2013 numbers. Communities reported responses in a web survey. A subset of the information is included in this memo. A full database was provided to the County for additional analysis.

Diversion by Communities

The following were the communities and entities that responded their populations, and the share of Boulder County's population represented by the communities. These population shares were used to compute the "Weighted averages" shown in the table below. The diversion rates shown in the table were the best figures available from the data reported in the 2014 survey (which included surveys filled out by communities). The figures indicate the ***County-wide residential diversion is 39.5%,*** using community figures, weighted by population. It is difficult to identify county-wide total diversion because commercial numbers are not widely available.

Figure 1: Communities, Population, and Estimated Diversion Rates

City / Community / Univ / Company	Popu-lation	House-holds	Pct of Population thru WARD	Total Tons Generated	Generated per capita (TPY)	Total Tons Diverted	% Diverted (total) (suspect in blue)	Res Percent Diverted
City of Boulder	101,808	41,382	36%	121,690	1.20	40,678	33%	59.5%
Boulder County revised	36,000	14,300	13%	80,281	2.23	15,247	23%	16.2%
Jamestown	130	101	0%			17		
City of Lafayette	26,800	12,000	9%	4,506	0.17	1,622	36%	26.5%
City of Longmont	87,000	28,500	31%	38,106	0.44	11,339	30%	29.8%
City of Louisville	18,400	7,200	6%				45%	52.6%
Lyons	1,800	900	1%			541		
Town of Superior	12,500	4,300	4%	11,429	0.91	3,035	27%	26.5%
Ward	150	60	0%	68	0.45	13	19%	
Town of Erie	21,000	7,000	0%					
Univ. of Colorado-Boulder	39,200	7,300	0%	5,622	0.14	2,458	44%	40.7%
Broomfield	59,000	16,500	0%					
SUMMARIES AND TOTALS				Total	Average	Total		Simple Avg
Total thru Ward				256,080	0.90	72,492		35.2%
Total thru Erie				256,080	0.90	72,492		35.2%
Total thru University				261,702	0.79	74,950		36.0%
Pct of pop covered (thru Ward)					Simple Avg??=>	28%	Thru WARD…	
% of communities (thru Ward)					Wtd Avg??=>	31%	**Wtd Avg=>**	**39.5%**

The communities show recycling rates ranging from about 16% (Boulder County, with a decrease due to the flood) to Boulder's 60% (or so). Boulder and Louisville (53%), with embedded yard waste collection, are the leaders. The University's 41% diversion rate is one of the highest reported as well.

The County and City report total diversion rates (including commercial) in the 23-33% range; other numbers do not have strong underpinnings.

How the Communities "Got There"

Figure 4 and 5 at the end of the report present the findings for the presence ("1") and absence ("0") for various policies and programs in the County, communities, and agencies. The summary figures at the bottom show the number of agencies that have the strategy (for all communities in order through Ward, Erie, and the University, in succession). The last two rows present the percent of County population with the strategy (a weighted average), and the percent of the communities reporting the strategy. The tables cover:

- How residential trash is collected / who collects,
- Whether residential recycling service is "embedded" in the trash bill,
- How residential organics service is provided (in trash, or not available),
- How residential trash is charged (PAYT or other options),
- Whether haulers are required to report tonnages landfilled and diverted in the community,
- Whether there are C&D activities or programs (and what it consists of),
- What materials are collected at the local drop-off facility, and
- Special collection events offered by / in the community.

Figure 2: Implications of the Survey Results

Strong presence / good coverage	Weak areas / gaps
• Embedded recycling (90% of pop) • PAYT (95% of pop)	• Commercial programs / initiatives (weak question); even in leading communities, the Commercial sector lags (and/or numbers are unknown in other places). • Organics is embedded for 55% of households (a fairly high percent), but is not available to 44% of residents. Many divertible tons are being missed. • The communities report some activity in C&D covering 44% of the population. It is currently unclear how many tons are addressed. Gathering more data, and clarifying tons covered would be helpful. • Some drop-offs are not taking a very wide array of materials.

Brief Summary of Results

Residential recycling in the County is about 40%. County leaders are at more than 50%, with Boulder at 60%, and yard waste service, available without an additional fee, appears to be a driver. Few communities lack PAYT, with the largest being Superior.

Review of other tables shows about half of communities have zero waste goals, diversion goals, or dedicated recycling or sustainability staff. Boulder is the only community that currently has a bag fee (although as discussed below, several other communities are considering the option).

Hauler reporting is pretty universal (including Boulder County's regulation); however, it is not clear that all communities get timely or accurate tonnage reports.

Other than Longmont (which has municipal collection), the County communities are fairly split between open hauling and contracting.

Events, including e-waste, HHW, Zero Waste, and spring/fall clean-ups are not uncommon, but are reported in only about a quarter or less of the communities last year, but the events covered roughly 30-40% of the population in the County.

The two biggest gaps are commercial and organics. Addressing Commercial and organics could be accomplished with several major programs and initiatives, demonstrated in communities around the country. These are listed below.

Figure 3: Strategies to Consider (personal opinion)

	Aggressive communities[1]	Less aggressive communities
Commercial	• Mandate commercial recycling, sector wide / require subscription. Require recycling embedded in trash fee to make true PAYT in commercial. At least, start with ABC law (requiring recycling of beverage containers for restaurants and bars, enforced by liquor license). Another alternative is to start with largest businesses (>10CY) • Require clarity in billing for the commercial sector – consider requiring haulers to provide invoices that state price and include a clear statement of size, number and frequency for each material collected. This allows comparison shopping, reduces cost and barriers to adding service. Communities should consider providing sample language to request new bids and "rightsizing" of commercial collection. • Consider requiring organics service for all bars, restaurants, and grocery, etc. • Enforce green points; expand to more communities	• Recycling plans to be submitted to community • Billing clarity (see left)
Residential Organics	• Include / expand food in communities with yard collection • Communities with contracts should include organics in their trash / recycling contract – and include food.	• Drop-off facility • Backyard

[1] *Recommended in Skumatz, "Strategies toward Zero Waste: City of Boulder, CO", February 2013.*

	Aggressive communities[1]	Less aggressive communities
	• Decrease trash frequency and substitute more organics collections to drive greater food diversion / participation • Important to settle the infrastructure question; work out arrangements with existing facilities with "skin in the game" or consider a county facility (possibly contracting for operation) or other strategy / achieve organics capacity with food potential	composting (if HOA or wildlife considerations allow) • Contracting for trash and add
Other	• EOW Trash - Support / encourage every other week trash collection for residents on PAYT (smaller containers blow away / impractical). • Cardboard ban • YW ban • More aggressive PAYT rates • Consider piloting incentives for haulers to reach diversion or participation goals (e.g. discount on trash tax or other) • C&D infrastructure; if greenpoints expanded and enforced, steadier stream may help encourage infrastructure. Otherwise C&D deposit program or other initiatives. • Education / outreach / CBSM in all sectors, possible expansion of PACE audits, etc. • Suggest deferring MF until commercial addressed.	• Some suggestions also suitable for small (particularly CBSM).

Figure 4: Presence and Absence of Programs and Policies in Boulder County Communities

	WHO COLLECTS RES TRASH			RECYCLING	ORGANICS SERVICE			HOW RES TRASH CHARGED			
City / Community / Univ / Company	City Collects	Multiple haulers in open competition	contracted Hauler	Incl trash bill all residents (HOA, mtn areas may vary)	Incl trash bill all residents	add'l & sign up w/ hauler	Not Avail	Flat Fee	Payt/ Variable Rates	Varies by Hauler	Not charged/ muni provides
City of Boulder	0	1	0	1	1	0	0	0	1	0	0
Boulder County revised	0	1	1	1	1	0	0	0	1	0	0
Jamestown	0	1	0	0	0	0	1	0	1	0	0
City of Lafayette	0	0	1	0	0	0	1	0	1	0	0
City of Longmont	1	0	0	1	0	0	1	0	1	0	0
City of Louisville	0	0	1	1	1	0	0	0	1	0	0
Lyons	0	1	0	0	0	0	1	0	0	1	0
Town of Superior	0	0	1	1	0	1	0	1	0	0	0
Ward	0	0	1	0	0	1	0	0	0	0	1
Town of Erie	0	0	1	1	0	0	0	0	0	0	0
University of Colorado-Boulder	0	0	0	0	0	0	0	0	0	0	0
Broomfield	0	1	0	0	0	0	1	0	0	1	0
SUMMARIES AND TOTALS											
Total thru Ward	1	4	5	5	3	2	4	1	6	1	1
Total thru Erie	1	4	6	6	3	2	4	1	6	1	1
Total thru University	1	4	6	6	3	2	4	1	6	1	1
Pct of pop covered (thru Ward)	31%	49%	33%	90%	55%	4%	41%	4%	95%	1%	0%
Pct of communities (thru Ward)	11%	44%	56%	56%	33%	22%	44%	11%	67%	11%	11%

Figure 5: Presence and Absence of Programs and Policies in Boulder County Communities

		WHAT IS COLLECTED AT LOCAL DROPOFF											
City / Community / Univ / Company	C&D Program	Conventional Recyclables	Yard waste	Food waste	Electronics	Paint, Oil, Pesticides	Batteries	Styrofoam	Plastic Bag	Scrap metal	Appliances / white goods	Hard to recycle (specify)	Other (please specify)
City of Boulder	Green Points Green Building requirements. Boudler Revised cide 10-7.5 http://www.colocode.com/boulder2/chapter10-7-5.htm	1	1	1	1	1	1	1	1	1	1	1	reusable building materials; all eco-cycle CHaRM materials
Boulder County revised	BuildSmart requirements but loosely enforced	1	0	0	0	1	0	0	0	0	0	0	0
Jamestown	after flood very clearly outlined ordinances posted on websit	0	0	0	0	0	0	0	0	0	0	0	0
City of Lafayette	0	0	1	0	0	0	0	0	0	0	0	0	0
City of Longmont	0	1	1	1	0	0	1	0	1	1	1	0	0
City of Louisville	0	0	0	0	0	0	0	0	0	0	0	0	0
Lyons	0	1	0	0	0	0	0	0	0	0	0	0	0
Town of Superior	0	0	1	1	0	0	0	0	0	0	0	0	0
Ward	0	0	0	0	0	0	0	0	0	0	0	0	0
Town of Erie	0	1	1	0	1	1	1	1	1	0	0	0	0
University of Colorado-Boulder	http://www.colorado.edu/ecente	1	0	0	0	0	0	0	0	0	0	0	0
Broomfield	0	1	1	0	0	0	0	0	0	0	0	0	team with ARC for books, textiles and shoes
SUMMARIES AND TOTALS													
Total thru Ward	0	4	4	3	1	2	2	1	2	2	2	1	0
Total thru Erie	0	5	5	3	2	3	3	2	3	2	2	1	0
Total thru University	0	6	5	3	2	3	3	2	3	2	2	1	0
Pct of pop covered (thru Ward)	0%	80%	80%	71%	36%	48%	66%	36%	66%	66%	66%	36%	0%
Pct of communities (thru Ward)	0%	44%	44%	33%	11%	22%	22%	11%	22%	22%	22%	11%	0%

Figure 6: Presence and Absence of Programs and Policies in Boulder County Communities

	SPECIAL EVENTS										
City / Community / Univ / Company	E-Waste Events	HHW Events	Christmas tree drop-off / collection	Zero waste events	Pharmaceutical take-back events	Shred events	Spring / Fall Clean-Up	Compost / Mulch give-away	Hard to recycle events	Other (please specify)	Open-Ended Response
City of Boulder	0	0	0	0	0	0	0	0	0	same for 2014; w	0
Boulder County revised	0	0	0	0	0	0	0	0	0	0	a. E-waste – users pay, occurs annually, county runs the event b. HHW events – free for users, 3 mountain events per year as grant funding allows c. Zero waste Events (Boulder County Fair) free for users, annual, county and fair board pay expenses d. Pharmaceutical take back events, free for users, county pays (Sheriffs office) e. Shred events free for users, annual, county pays f. Spring/Fall clean ups some materials free, some have copays, annual, county contributes funds
Jamestown	0	0	0	0	0	0	0	0	0	0	Once a year big spring clean up with most of these, zero waste is big events
City of Lafayette	1	0	1	1	1	1	1	0	1	0	To complicated to write down..just call me..also I ran events in both 2013 and 2014 but the survey would not accepted two checked boxes for both years
City of Longmont	1	1	1	1	1	1	1	1	1	0	All events free to city residents with exception of hard to recycle events in which fees are charges for certain items. The city manages all the events with the exception of the HTR which is run by Ecocycle.
City of Louisville	0	0	0	0	0	0	0	0	0	0	Our residents were invited to Lafayette's e-waste-collection event. Christmas-tree collection is part of our residential curbside compost collection. Our summertime public events have zero-waste collection, arranged by sponsors. We receive limited free compost/mulch each year, which is available for free pick-up by residents at our wastewater-treatment site.
Lyons	0	0	0	0	0	0	0	0	0	0	Annual spring cleanup accepts CHaRM materials and yard waste in addition to bulky trash. Town-sponsored events are zero waste.
Town of Superior	0	0	0	0	0	0	0	0	0	0	E-Waste - partner with Eco-Cycle, Town pays for half of residents' fee. Rest are no-charge.
Ward	0	0	0	0	0	0	0	0	0	0	CHaRM and HHW collection volunteer run at County provided Spring Clean Up day
Town of Erie	1	0	0	1	0	0	0	0	0	0	Free to Erie Residents. The clean up days are offered twice a year and is run by our Public Works Dept.
University of Colorado-Boulder	0	0	0	1	0	0	0	0	0	Bolder Boulder,	varies
Broomfield	1	1	1	1	1	1	1	1	0	0	all events are free of charge to our citizens. HHW and Shreding event is 2/year. Tree limb is year round along with waste oil and cooking oil. Other events are annually.We collect leaves and pumpkins in the fall.
SUMMARIES AND TOTALS											
Total thru Ward	2	1	2	2	2	2	2	1	2	0	0
Total thru Erie	3	1	2	3	2	2	2	1	2	0	0
Total thru University	3	1	2	4	2	2	2	1	2	0	0
Pct of pop covered (thru Ward)	40%	31%	40%	40%	40%	40%	40%	31%	40%		
Pct of communities (thru Ward)	22%	11%	22%	22%	22%	22%	22%	11%	22%	0%	0%

Boulder County Resource Conservation Advisory Board (RCAB) Meeting
August 27, 2014

Boulder County Recycling Center, Education Room, 1901 63rd Street, Boulder

AGENDA

1. Call to Order / Introductions	4:45 p.m.
2. Approval of Minutes – May 2014 and July 2014	4:46 p.m.
3. Public Comment (Maximum Time Allocated 10 minutes)	4:47 p.m.
4. Standing Topic: Choose Agenda Topics ACTION: Discuss priorities and choose agenda topics for the next 12 months. Presenter: Hilary Collins	4:57 p.m.
5. RCD Update: Spring Cleanup Report ACTION: For information Presenter: Mark Wesson	5:35 p.m.
6. Next Month's Agenda - Tentative topics: • Special Topic: C&D Diversion • Special Topic: Flood Update • Additional topics as determined by discussion under #4 above.	5:50 p.m.
7. Subcommittee and Working Group Reports	5:55 p.m.
8. Any Other Business • Boulder County Zero Waste Funding	6:00 p.m.
9. Community Reports (2 minutes each)	6:05 p.m.
Adjourn	6:30 p.m.

Resource Conservation Advisory Board (RCAB)

The Resource Conservation Advisory Board (RCAB) was formed in 2002 to advise the Board of County Commissioners on major waste diversion policies and strategies.

The purpose of the Advisory Board shall be to assist the Board of County Commissioners in reducing the amount and toxicity of waste generated in the county; to research, review and recommend changes in policy related to waste reduction, reuse, recycling and composting; to provide input on the development and management of facilities and programs; and as a result of these efforts to help Boulder County and its communities and partners to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution.

RCAB – THE YEAR AHEAD
PRIORITIES & TOPICS

For RCAB Meeting August 27, 2014 - Hilary Collins, Boulder County

Purpose in short…

- Recommend action that will increase diversion and reduce waste

RCAB Purpose

- To advise the BOCC on major waste diversion policies and strategies.

- To assist the BOCC in:
  - reducing the amount and toxicity of waste generated
  - researching, reviewing and recommending changes in policy
  - Providing input on the development and management of facilities and programs

- As a result …to help Boulder County and its communities and partners to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution

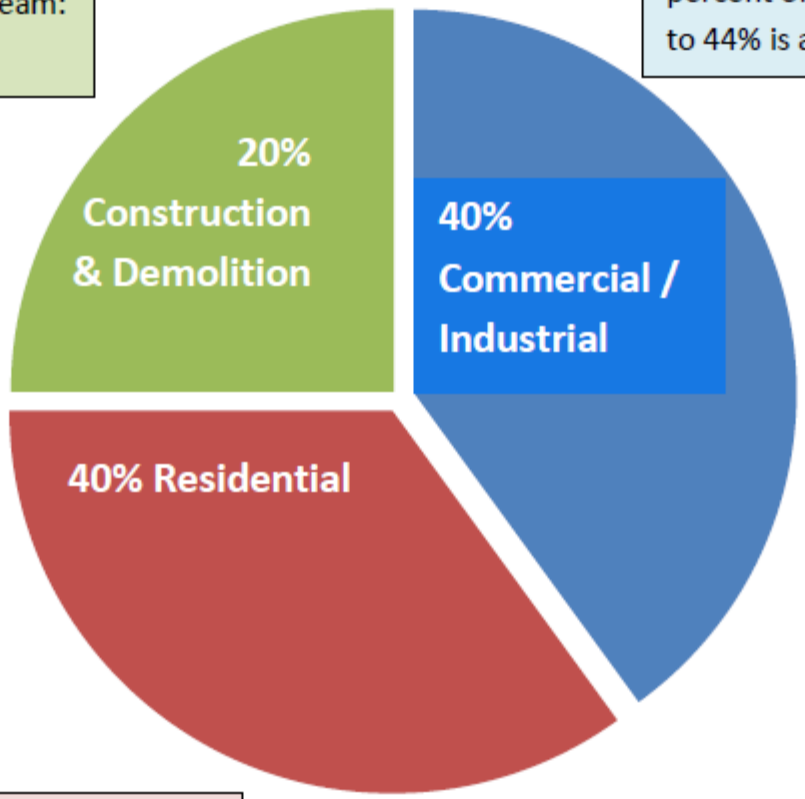
Where are we?

- Diversion is well below desired goals
- We are diverse communities with different levels of zero waste progress
- Need information on what's possible, challenges and barriers
- Can work together to achieve more

Boulder County Diversion Baselines – 2013 Estimates

C & D materials make up close to 20 percent of the materials stream: Only 7% is being diverted.

Commercial materials make up about 40 percent of the materials stream: Close to 44% is already being diverted.



Residential materials make up close to 40 percent of the materials stream: An estimated 25% is being diverted.

Source: Lisa Friend – Approximation based on 2010 Waste Composition Study percentages cross-referenced with incomplete figures from the 2013 community survey and Boulder County BuildSmart diversion numbers.

Proposed Approach

Break the year into two:

- Research Phase - September to February
- Action Phase – March to August

WHY?

Other research is being conducted that will feed into RCAB's review and recommendations.

This provides an opportunity for RCAB to spend time processing recent research, filling gaps in the research and learning more about member activities

Research underway

- **Recycling Center Subcommittee/Recycling Center Optimization Study** – *improvements to tonnage, expenses, gate payments, etc.*
- **Infrastructure Working Group** – *capacity needs for next 15 years*
- **Education and Outreach Working Group** – *collaborative messaging*
- **Sustainability Program Impact Analysis** – *assessing impacts, improvements and opportunities*

1. Research phase

- Understand service utilization across the county
- Review methods to increasing commercial and C&D diversion including regulations
- Exploring issues for HOAs and MFUs
- Review case studies on high diversion communities
- Learn from City of Boulder ZW Evaluation Study
- Explore food waste diversion
- Consider funding opportunities/zero-interest facility loans
- Explore diversion numbers and ways to improve data collection
- Evaluate collaboration through an IGA and possible funding sources to do this

2. Action Phase

- Use all the information gained to plan the road ahead …for a concerted effort to increase diversion
- Develop specific recommendations for
  - Changes in service
  - Changes in regulation
  - Changes in funding
  - Changes in facilities
  - Changes in collaboration

What about existing topic list?

- During the next 12 months RCAB will need to reduce time spent on county activity reports
- Suggest reduce RCD updates to twice yearly
- Suggest add PACE/Sustainability updates twice per year
- Add reports from member communities
- Reduce standing topics to
  - Annual election/bylaws review
  - Set agenda for next year
  - County-wide survey and report

Suggested Topics – Research Phase

September 2014

- Boulder Report
- City of Boulder ZW study, methods to increase commercial and C&D diversion, issues for HOA's, MFUs.

October

- PACE/Sustainability report
- Longmont report
- Service Utilization, Diversion Numbers, Improving Data Collection

November

- Louisville report
- RCD fall report
- Case studies - San Francisco and Seattle

Suggested Topics – Research Phase

December

- Lafayette report
- Superior Report
- Food waste diversion

January 2015

- Nederland Report
- Jamestown and Ward Reports
- Consider funding opportunities/zero-interest facility loans

February

- Broomfield Report
- Erie Report
- Collaboration through an IGA and possible funding sources

Suggested Topics – Action Phase

March 2015

- Recycling Center Subcommittee report
- Infrastructure Working Group report

April

- Bylaw Review
- PACE/Sustainability report
- Natural Capitalism report (impact analysis)

May

- Election
- RCD Spring report
- Education and Outreach Working Group report

Suggested Topics – Action Phase

June 2015

- Countywide diversion survey report
- Draft recommendations

July

- RCD summer report
- Final recommendations

August

- Set agenda for coming year

Questions and Comments

Questions and Comments

RCAB – Zero Waste Update August 2014

Thanks to all who volunteered at the Boulder County Fair this year. We had more challenges from the carnival than in the past, but attendees seemed willing to participate in the Zero Waste program. Many were quite knowledgeable already!

Boulder County coordinated a **Compost Capacity Analysis** that was co-sponsored by the city of Boulder, Eco-Cycle and Western Disposal Services. A copy of the study will be posted to the County's web site. It will also be reviewed by the Infrastructure Working Group. Ask Lisa for the final "Findings" and "Recommendations," which should be available by RCAB meeting time.

The "Front Range Sustainable Purchasing Network" has completed discussion papers about **hand dryers and recycled-content paper towels** which are available to network members. Membership is open through the end of the year, when the network will become a formal council of the Colorado Association for Recycling. See Lisa for more information.

Boulder County Mountain Communities Spring Clean-Up Program

Resource Conservation Division

2014

Program Overview

* Boulder County collaborates with seven communities on one-day community spring clean-up events
* May & June each year
* County contribution $14,000 plus staff time

Boulder County
Resource Conservation

Contributions

* County provides:
  * Contracts & coordination of dumpsters
  * Updated resource list each year for community waste diversion
* Community provides:
  * Event location
  * Event promotion
  * Staffing
  * Additional dumpsters for recycling & composting
  * Reuse “drop & swap”

Boulder County
Resource Conservation

History

* Prior to 2005, all material collected was landfilled
* Boulder County requested each community to include different waste streams for recycling

Boulder County
Resource Conservation

Allenspark

* Pre-2005: 5 trash roll-offs
* 2014:
  * 5 trash roll-offs – 20.5 Tons
  * HazMat – 3.1 Tons paint, batteries, hazardous houshold waste
  * E-Waste – 2.5 Tons
  * 88 lbs. hard to recycle materials
  * 1 Scrap Metal roll-off - ? Tons
  * Refrigerators - ?

Boulder County
Resource Conservation

Bar-K

* Pre-2005: 3 trash roll-offs
* 2014:
  * 4 trash roll-offs – 6.75 Tons.
  * 1 metal trailer – 500 lbs.
    * hauled by community member
  * Drop & Swap – 100 lbs.

Boulder County
Resource Conservation

Gold Hill

* Pre-2005: 5 trash roll-offs
* 2012:
  * 2 trash roll-offs – 6.4 Tons
  * 1 metal roll-off – 1.7 Tons
  * 1 clean wood roll-off– 4.5 Tons.
  * Drop & Swap – 100 lbs.
  * 1 computer, a few appliances, flatbed truck full of polystyrene.

Boulder County
Resource Conservation

Jamestown

* Did not have a clean-up event this year

Boulder County
Resource Conservation

Nederland

* Pre-2005: 15 trash roll-offs
* 2014:
  * 11 trash roll-offs – 35.7 tons
  * 1 Scrap metal roll off – 8 tons
  * E-Waste – 0.75 Tons
  * HazMat – 2.75 tons paint, car batteries, household hazardous waste
  * 1 wood roll-off
    * was contaminated and became trash
  * Drop & Swap – 1 Pick-up load.
  * Refrigerators - ?

Boulder County
Resource Conservation

Niwot

* Pre-2005: 4 trash roll-offs
* 2014:
  * 6 trash roll-offs – ? Tons.
  * 1 metal roll-off - ? Tons
  * 5 slash roll-offs – ? Tons
  * E-Waste – 2.5 Tons
  * Latex Pain – 2 gaylords
  * Plastic bags – 4 gaylords
  * Polystyrene – 3 large bags

Boulder County
Resource Conservation

Ward

* Pre-2005: 5 trash roll-offs
* 2014:
  * 4 trash roll-offs – ? Tons
  * 1 Scrap Metal trailer - ? Tons

Boulder County
Resource Conservation

Suggestions for Next Year

* Include annual one-day tire collection with SCUP
* BC pays for only recycling and/or diversion (not for trash)
* Consider additional funding recommendation for hazardous waste collection
* Even allocation amongst communities (Lyons doesn't receive funds)
* Magnetic reusable signs for roll-offs (Metal, Wood, Trash, etc.)
* County staffing at each event
* Mandatory pre-SCUP diversion meeting

Boulder County
Resource Conservation

Boulder County Resource Conservation Advisory Board (RCAB) Meeting
September 24, 2014

Boulder County Recycling Center, Education Room, 1901 63rd Street, Boulder

AGENDA

1. Call to Order / Introductions	4:45 p.m.
2. Approval of Minutes – August 27, 2014	4:46 p.m.
3. Public Comment (Maximum Time Allocated 10 minutes)	4:47 p.m.
4. New Priority Topic: Composting **ACTION: Study Session to explore composting policy, program and infrastructure improvements needed to significantly increase organic diversion in individual municipalities and across the county.** **a.** Compost capacity report summary - Key findings and recommendations. Presenter: Suzanne Jones **b.** Existing conditions Report (service utilization, data, other research findings, data collection, data gaps, regulatory mechanisms, infrastructure, backyard composting, incentives) – Lisa Friend **c.** Programmatic and regulatory options to increase organics diversion, case studies. Presenter: Lisa Skumatz **d.** Subcommittee and Working Group Reports – Presenters: Lisa Skumatz, Suzanne Jones, Hilary Collins Note: Compost education, outreach and signage – to be discussed next month	4:57 p.m. **Note: presentations will each be seven minutes or less leaving time for discussion.**
5. Next Month's Agenda • Continued study session on composting • Questions on flood report	6:15 p.m.
6. Any Other Business • America Recycles Day (check in on community plans)	6:16 p.m.
7. Community Reports - Questions on written reports only	6:17 p.m.
8. Special Topic – Retirement Farewell to Jeff Callahan	6:20 p.m.
Adjourn	6:30 p.m.

Resource Conservation Advisory Board (RCAB)

The Resource Conservation Advisory Board (RCAB) was formed in 2002 to advise the Board of County Commissioners on major waste diversion policies and strategies.

The purpose of the Advisory Board shall be to assist the Board of County Commissioners in reducing the amount and toxicity of waste generated in the county; to research, review and recommend changes in policy related to waste reduction, reuse, recycling and composting; to provide input on the development and management of facilities and programs; and as a result of these efforts to help Boulder County and its communities and partners to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution.

Boulder County Resource Conservation Advisory Board Meeting
Minutes, August 27, 2014

Present: Alexander Armani-Munn – Nederland, Jack DeBell – CU Recycling, Tom Dowling – Lafayette, Lisa Friend – Boulder County, Shirley Garcia – Broomfield, Bryce Isaacson – Western Disposal, Bridget Johnson – Jamestown, Suzanne Jones – Eco-Cycle, Charles Kamenides – Longmont (phone), Shari Malloy – At Large, Dan Matsch – Lyons, Lisa Morzel – At Large, Mark Persichetti – Louisville, Tim Plass – Boulder, Holly Running-Rabbit – Ward (phone), Lisa Skumatz – At Large (phone).

Active Members Not Present: Juri Freeman – At Large, Martin Toth – Superior, Dan Stellar – Center for Resource Conservation.

County Staff: Hilary Collins – Commissioners' Office/Sustainability, Mark Wesson – Boulder County Resource Conservation Division (BCRCD)/ Commissioners' Office/Sustainability.

Guests: Kevin Afflerbaugh – Western Disposal, Jamie Harkins - City of Boulder

1. Call to Order / Introductions (4:50pm)

2. Approval of Minutes May and July, 2014

The May minutes were corrected to indicate that Juri Freeman attended by phone. In the final line of Section 6, RCD Update, the term "hauler funding" was changed to "hauler payments." Jack DeBell made a motion to approve the May minutes with the corrections, Tim Plass seconded and the motion was unanimously approved.

Bryce Isaacson was omitted from the list of members present at the July meeting. Lisa Friend moved to approve the minutes with this correction, Tom Dowling seconded and the motion was unanimously approved.

3. Public Comment - None

4. Standing Topic: Discuss priorities and choose agenda topics for the next 12 months

Hilary reviewed a PowerPoint presentation provided in advance (see presentation and memo from the Board of County Commissioners in the Meetings Handouts). She began by acknowledging the commitment and expertise of the board and thanking members for their hard work. Chocolate bars were kindly received. A memo from the Commissioners providing specific direction was noted.

The main points and summary of Q&A are below:

- The County Commissioners have asked RCAB to focus and make recommendations on policies, programs and infrastructure needed to significantly increase waste diversion in individual municipalities and across the county, and especially to increase commercial recycling residential and commercial composting, and C&D diversion; and to pursue collaboration on messaging and bin signage.

- Overall the county is at a 30-40% diversion rate; well below desired goals.
- There are three big pieces of waste stream: commercial, residential and construction and demolition (C & D). Close to 44% of commercial is being diverted, according to RCAB's latest survey, but we need to look at these numbers more closely. If 20% is construction,

then much of that is recyclable in Boulder County now (aggregates, cardboard, clean wood, and metal – we have markets for these materials now. These are the main components of the C& D waste stream).

- Bryce noted that 35% of C & D waste brought to Western is recycled. Getting lots of used drywall, not recyclable. Only scrap from new drywall is recyclable.
- Staff proposed to break the year into a six-month research phase and a six-month action phase. Other research outside of RCAB will feed into this process so that we can be in a position to make recommendations later. Less time will be spent on hearing reports on existing activities. There is an opportunity to really be organized and clear about what funds are needed for, if Boulder County decides to pursue a sustainability tax in the future.
- The "year" ahead was clarified as through August 2015.
- Suzanne suggested that RCAB focus on each of the priority areas, focusing entire meetings on one topic. Many members agreed that RCAB should focus on topics individually with in-depth study session-type meetings, so that a topic has been thoroughly reviewed and recommendations can be made.
- If there were recommendations to give to the Commissioners, RCAB would not have to wait until next year to make them; they can be made as they come about. Topics could be paced allowing time for all necessary information to be included.
- Dan noted that RCAB can do the brainstorming on specific topics and then the working groups and subcommittees can take that information to work on ways to move forward.
- Jack proposed that for each topic, the board look at existing data collection, regulatory mechanisms, incentives, signage, barriers, and whether these could fold into an IGA.
- Suzanne proposed that different RCAB members help lead each topic, rather than all discussions being led by county staff.
- It was suggested that quarterly written reports from RCD for RCAB's review would save time. Lisa S felt the reports from RCD should be in person and are important. She also reported that Recycling Center Optimization Subcommittee should be finished with their research before the end of the year.
- Staff will look at the original IGA language for RCAB to see what it says about the quarterly reports. (Note: Lisa Friend looked and the IGA says nothing about reports. The IGA will be posted to the County website.)
- There are some general business items, such as zero waste funding, that will need to be addressed at times, so not all the meetings will be focused on one specific topic.
- It was suggested that each community report be given in written form when the RSVPs are collected.
- It was decided to discuss compost next month (September) and C&D next. RCAB's September and October meetings will be dedicated to compost. Lisa F reported that a final draft of the compost capacity report should be ready in mid-September.
- Topics to be discussed with compost - how to get HOA's involved, markets, education, backyard, infrastructure, collection.

5. RCD Update: Spring Cleanup Report – For information

Mark reviewed a PowerPoint presentation (see Meeting Handouts). The main points and summary of Q&A are below:

- Boulder County spends approximately $14,000 is per year on the Spring Cleanup project, mostly on trash collection roll-offs for the several community events. The communities currently fund diversion collection at the events, with some communities doing more than others. The county would prefer to move towards funding diversion at these events.
- Bridget noted that 2014 was the first time in 12 years that Green Girl didn't provided free recycling collection at the Bar-K spring cleanup, which is why the community needed an

extra trash roll-off (which turned out to be unnecessary). People just don't want to pay for recycling service here, so if the county was to provide that service, it would be well received.

- Hilary suggested that RCAB recommend that the county only pays for diversion. Concern was expressed that this change would not be well received by some of the communities involved.
- RCAB suggested that the following items be considered for this program:
    - Tire collection, hazardous waste collection every few years, more equitable funding for communities, consideration whether risk of dumping in the mo8untains still exists, more education, and total costs of county subsidy including the transfer station costs.
    - Reports without an action component should be avoided – next time provide RCAB information ahead of time and then the committee can better provide feedback.

6. Next Month's Agenda

The September and October agendas will focus exclusively on compost. A written flood update was requested.

7. **Subcommittee and Working Group Reports**

Lisa Skumatz summarized what the Optimization Sub-committee has done thus far (see Meeting Handouts).

8. Any Other Business

Zero Waste Funding: Hilary reported that Jeff Callahan had planned to attend the meeting to suggest to the RCAB that it consider changes to the County's zero waste funding program at its September meeting.

The main points of discussion included:

- $50,000 is allocated each year for this program. It funds a variety of projects. Some feel that in the last few years the projects haven't been as strong, which suggests the possibility that these funds be better used elsewhere?
- It was suggested that this funding be considered along with other funds being expended by the County - for example, on the spring cleanup program, etc., and to consider what is most important for diversion.
- The Board agreed that the 2015 funding cycle should go ahead as normal; strong projects being funded and any remaining funds used elsewhere.
- A sub-committee was formed to evaluate this year's proposed projects (Shirley Garcia, Lisa Morzel, Lisa Friend and Hilary Collins). The subcommittee will use a matrix to evaluate all the applications and will consider how the program could be improved. Better reporting of project success and impacts was requested. It was also suggested that the County website should list the current successes of the grant program and all prior recipients. This should remain on the web site year-round. Mark will supply details of projects funded to the subcommittee.
- Maybe there should be a comparison made between past recipients and how successful they were at their diversion expectations.
- Mark will send info to subcommittee on all programs.

Hilary also reported that the recycling center is now posting the amount to be paid for recyclables at the beginning of each month, and haulers are to receive payment within 45 days of the close of the month in which the material was delivered.

9. Community Reports

Bridget reported continued progress on Jamestown's recovery after the flood. 82% of the population is reconnected with water, the school back in operation, a concrete buffer has been installed where Joey Howlett's house collapsed to prevent further destruction during future mudslides. There is a Sept 12 open house planned with music, commemoration, and the mayor will speak at 6 pm.

Tom reported that Lafayette Energy efficiency tax of 1% (moving to 2% the next year) is on ballot for this fall.

Adjourn: Jack DeBell moved to adjourn and Lisa Friend seconded. The meeting adjourned at 6:34pm

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Boulder County - Zero Waste Update September 2014

The **Compost Capacity Analysis** co-sponsored by Boulder County, the city of Boulder, Eco-Cycle and Western Disposal Services should be completed before the RCAB meeting. A copy of the study will be posted to the County's web site and reviewed by the Infrastructure Working Group. Ask Lisa for the final "Findings" and "Recommendations," which should be available by RCAB meeting time.

America Recycles Day will be November 15th. Boulder County programs are not planning anything special for the date, which falls on a Saturday this year. We can, however, promote local activities through our county outreach programs.

Staff will speak about the challenges of managing woody flood debris while under **Emerald Ash Borer quarantine** at the SWANA state conference in Estes Park and at the Colorado Association for Recycling annual meeting at Red Rocks, both in October. The ash borer infestation threatens neighboring counties, who are interested in learning from Boulder County's experiences.

The Colorado Product Stewardship Council (CoPSC) received the 2014 Nightingale Policy Advancement Award for its work on paint stewardship from the North American Hazardous Materials Management Association (NAHMMA) at its 29th Annual Conference in Orlando, Florida, in August.

CAFR poster contest winner: Congratulations to Boulder Kindergarten student, Elizabeth Brandt, of Eisenhower Elementary School, Boulder, who was a winner in the Colorado Association for Recycling's recycling poster contest. Colorado K-12 students and youth organization members showcase their artistic talent and their commitment to the environment by participating in this annual contest. Elizabeth's poster "Compost Your Food Waste" will be featured in CAFR's 2015 Calendar, and all 12 winning students received a copy of their artwork in a recycled-content frame.
http://cafr.org/events/posterContest.php

Boulder County
Composting Capacity Analysis

September 2014

Prepared for
Boulder County, Office of Sustainability
Boulder, CO

Prepared By:
Matthew Cotton
INTEGRATED WASTE MANAGEMENT CONSULTING, LLC
Nevada City, CA

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EXECUTIVE SUMMARY

The following report presents findings of a compost capacity analysis conducted by IWMC for the County of Boulder. The primary objective of the report was to document the capacity of the compost facility being operated by Western Disposal (Western) at a site in the City of Boulder. The report also looks at the existing waste characterization, at waste reduction programs which would potentially reduce available feedstock, analyzes the potential for the City of Boulder Wastewater Treatment Plant to accept municipal organics for digestion, and presents an order-of-magnitude cost estimate for a stand-alone compost site.

Compost Capacity

Based on an analysis of the physical composting capacity of the Western site, there is additional capacity, both existing and potentially available with minor pad improvements (the operating pad would need to be improved to meet stormwater and drainage requirements). Western currently operates on an improved pad of approximately 6.41 acres. They processed almost 10,000 tons on this pad in 2013. The entire site is 10.71 acres, so were Western to expand the pad, they could expand the site's capacity. Also, Western currently manages the facility relatively moderately (2 complete compost cycles per year). Increasing the management intensity of the operation would also increase the site's capacity. IWMC has independently verified the available compost capacity based on windrow shape and retention time (see Appendix A).

However, while there is sufficient physical capacity at the Western Disposal site, that capacity is only available to Western's customers. Currently the majority of yard trimmings and food scraps from residential and commercial sources are hauled to the Western Disposal composting site located near Butte Mill Road in Boulder. Because the facility is privately owned and operated, Western Disposal can dictate who has access to their facility. Other haulers, like Eco-Cycle, which collects roughly 3,500 tons of commercial food scraps in Boulder County, does not access the Western site and instead hauls material to a transfer facility located at the old Stapleton airport (approximately 24 miles), where it is consolidated and hauled to a site outside of Keenesburg (approximately 41 miles) for composting. The City of Lafayette recently went out to bid for collection of residential organics and selected Republic Services. However, rather than hauling the material to the Western Disposal site, Republic will be hauling the same route that Eco-Cycle now hauls, to Stapleton, followed by a transfer to A-I in Keenesburg. A map showing the relationship of existing organics processing facilities in the project area is shown as Figure 1. Clearly there is an abundance of organics processing capacity in the region.

Waste Characterization

The Waste Characterization completed in 2010 identified significant organics remaining in the waste stream. This is consistent with similar studies IWMC is familiar with across the US. Data provided by Western Disposal (and to the extent possible verified by IWMC) indicates that

there is some potential growth in organics diversion expected in Boulder County in the next 3 to 5 years. Tables ES-1 and ES-2 show an estimate of the current and potential future organics collected in Boulder County. Table ES-2 provides an estimate of those tons that will be directed to the Western site. By Western's own estimates, the volume of material needing to be processed may double in the next three to five years.

The least reliable data are estimates of commercial organics growth. Currently both Western Disposal and Eco-Cycle (the two biggest, though not the only, haulers of commercial organics in Boulder County) average about 8 pounds per commercial food scraps account. Volumes of organics generated per commercial account vary widely. However, the City of Boulder is planning on implementing mandatory commercial and multifamily organics, which will have an impact on the volumes of organics collected in Boulder County.

Waste Reduction

There are a number of non-centralized ways to manage organics (backyard and on-site composting); while these are excellent and cost-effective ways of managing municipal organics, they rarely have significantly high participation rates to affect municipal collection programs. Further those individuals or entities that might be backyard composting may have been doing so prior to the 2010 waste characterization, so the tons they are managing may already be excluded from those estimates.

No significant on-site composting projects were identified in this study. Were a large generator to adopt an on-site digestion project, those tons might be removed from the capacity equation, but this does not seem to be a popular option in the Boulder region (and this would further reduce the capacity requirements of the Western Disposal Compost Site).

Table ES-1. Current and Potential Tonnage of Organics Collected in Boulder County.

Jurisdiction	Currently Collected (tons)	Potential Future Collections (tons)
Residential		
Boulder	4,035	5,086
Lafayette		1,849
Longmont		5,457
Louisville	1,126	1,423
Superior		781
Boulder County Unincorporated & Towns	2,253	4,640
Subtotal	7,414	19,236
Commercial	5,431*	6,593
TOTAL	12,845	25,829

*This includes all commercial food scraps currently collected by Western Disposal and Eco-Cycle, (including the University of Colorado).

Table ES-2. Current and Potential Tonnage of Organics Collected by Western Disposal.

Jurisdiction	Currently Collected		Potential Future Collections	
	Residential (tons)	Commercial (tons)	Residential (tons)	Commercial (tons)
Boulder	4,035		5,086	
Lafayette	0		0	
Longmont	0		5,457	
Louisville	1,126		1,423	
Superior	0		781	
Boulder County Unincorporated and Towns	2,253		4,640	
TOTAL	7,414	1,906	17,387	2,307**
TOTAL TONS TO WESTERN	9,320		~20,000	

*This includes the maximum tons that potentially could be delivered to Western Disposal only. There is no guarantee, for example that the City of Longmont's tons will eventually be delivered to Western Disposal once Longmont implements a separate collection program. Longmont's tons are included to show a likely maximum.

**This number assigns the estimated commercial tons potentially collected in Boulder County @ 8 tons per account and proportionally assigns them to Western based on the current proportional split with Eco-Cycle.

Co-Digesting Food Scraps At The City Of Boulder WWTP

Although the City of Boulder Wastewater Treatment Plant (WWTP) is interested in potentially co-digesting food scraps in one of their digesters, the fact that there is little to no excess capacity (i.e., an existing, vacant digester) at the facility would mean that costs to implement this alternative would be significant; the existing energy production infrastructure would also likely need to be upgraded to accommodate municipal food scraps. In addition, WWTPs are limited as to the type of food scraps they can manage, which may be incompatible with how (and what types) of food scraps are currently collected (specifically food-soiled paper and compostable service ware).

Potential New Facility Costs

Capital

An order-of-magnitude estimate of capital costs associated with developing a roughly 30,000 tons per year composting facility was created. Developing a new, stand-alone compost facility might require capital in excess of $4 million, not including site acquisition costs. These costs are meant to be an order-of-magnitude estimate of capital costs. Other site development work, different equipment choices and other site development costs (like stormwater management, fencing, initial permitting, etc.,) are not included in this estimate.

Operating and Maintenance

Estimating operations and maintenance costs for a hypothetical facility is more challenging than developing capital costs. Many of the key operating costs like labor, fuel, and maintenance can be highly variable. Labor costs (particularly benefits and worker's compensation) will vary whether the facility is privately operated or publicly operated. For this order-of-magnitude estimate a range of $400,000 to $700,000 per year is presented. Operating and maintenance costs will vary substantially based on the feedstock, for example, if the City of Boulder implements mandatory commercial and multi-family organics collection as proposed in the 2014 Zero Waste Evaluation Study the facility will likely need to add an elevated picking station, additional labor to sort contaminants, and most likely a building to conduct the sorting in. None of these costs are included in this estimate, but would increase both capital and operating costs.

Figure 1. Relationship of Available Organics Facilities near Boulder, Colorado.

Acknowledgements
IWMC wishes to thank the following individuals for their support and participation in this project;

Chuck Wilson and Bob Yost from A-1 Organics
Frank Bruno, Gary Horton, and Bryce Isaacson, Western Disposal
Dan Matsch at Eco-Cycle
Chris Douville at the City of Boulder Wastewater Treatment Facility
Susie Gordon, City of Fort Collins
Charles Kamenides, City of Longmont
Douglas Short, City of Lafayette
Jack DeBell, University of Colorado
Lisa Friend, Boulder County
Juliet Bonnell, Kelle Boumansour, Jamie Hawkins, and Kara Mertz, City of Boulder

INTRODUCTION

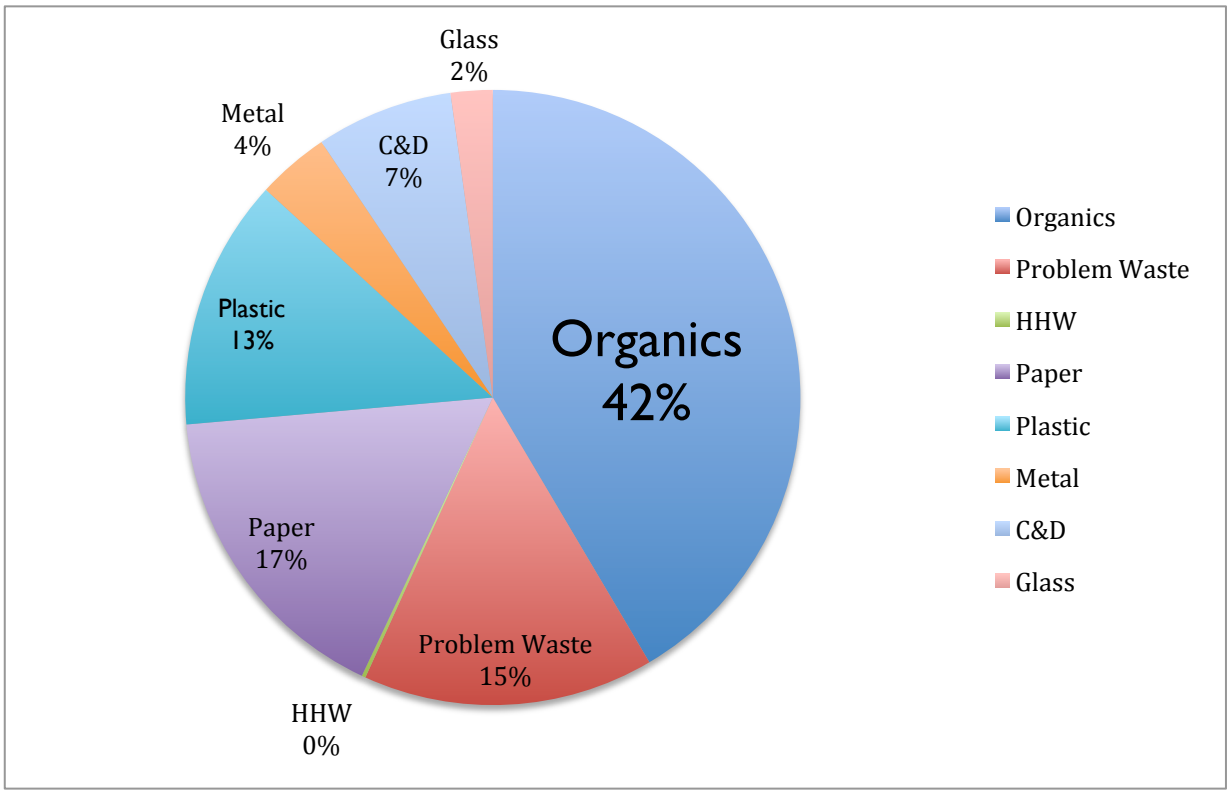
Boulder County has a number of organics processing facilities within a reasonable hauling distance of the centroid of Boulder County. The primary facility is a composting facility operated by Western Disposal. This facility handles the majority of the organic materials generated in the City of Boulder and in Boulder County. Because this facility is privately owned and operated, it is not available to some haulers. Those haulers not utilizing the Western site are currently hauling materials to a transfer facility near the old Stapleton airport (outside of Denver), before the materials are transferred to a composting site near Keenesburg. However, there is new and expanding capacity in the region which will also draw organics from Boulder County. A-1 Organics' Keenesburg facility is already receiving organics from Boulder County. Their Eaton site was recently permitted to accept food scraps and is a new option for commercial organics, particularly in the northern part of the County. Finally, a large manure and food scraps digester is currently being constructed near LaSalle, which is also expected to compete for Boulder County organics.

This report examines the waste characterization for Boulder County, makes estimates of the likely volumes of organic materials being separated for composting by various entities, and looks at the capacity of the only in-county composting option. The report also briefly examines waste reduction techniques which may impact the need for compost capacity in Boulder County. Finally, the report looks at the cost of duplicating the in-county compost capacity of the existing site (as a stand-alone site).

WASTE CHARACTERIZATION REVIEW

A countywide waste characterization study was conducted in 2010[1]. This study estimated Boulder County's waste generation at 221,000 tons per year (Based largely on data reported from the City of Longmont, extrapolated for the entire County). The study further estimated that organics (a combination of yard trimmings and food scraps) comprised 42 percent of waste, or 91,692 tons. Clearly organics comprises a significant fraction of the Boulder County waste stream. Indeed food scraps and yard trimmings were the two most prevalent items in the residential waste stream and food scraps and compostable paper were the two largest categories in the "Industrial, Commercial, and Institutional" (ICI) sector. Figure 1 shows the relative percentages of each category, highlighting the organic fraction.

Figure 2. Waste Characterization for Boulder County.



[1] 2010 Waste Composition Study, MSW Consultants, December 2010.

The waste characterization is consistent with other, similar waste characterizations IWMC has reviewed. We echo the need for ongoing waste characterization studies to understand variations and to start from a benchmark. These types of studies tend to get better (more accurate) and more useful the more frequently they are conducted.

Table 1 shows the populations of the major communities in Boulder County. Table 2 shows a rough estimate of the percentage of organics attributed to each community. These are estimates of waste disposal, all based on the 2010 waste characterization.

Table 1. Population of Boulder County Communities.

Community	Population
Incorporated	
City of Boulder	101,808
City of Lafayette	25,733
City of Longmont	88,669
City of Louisville	19,074
Unincorporated & Towns	
Town of Erie	19,722
Town of Jamestown	281
Town of Lyons	2,092
Town of Nederland	1,478
Town of Superior	12,782
Town of Ward	154

Table 2. Proportional Organics Generation (Residential).

Jurisdiction	Residential Generation (tons)	Percentage of Population	Estimated Residential Organics Disposal (tons)	
			Yard Trimmings @ 12.9%	Food Scraps @ 13.1%
Boulder	~44,552	43%	5,747	5,836
Lafayette	~11,261	11%	1,453	1,475
Longmont	~38,803	38%	5,006	5,083
Louisville	~8,347	8%	1,077	1,093
Total	102,963	100%	13,282	13,488

Extrapolating from the 2010 waste characterization, there may be roughly 27,000 to 34,000 tons of residential organics potentially available for composting in the four largest cities in the County. However, no collection program is 100 percent effective at capturing these organics. Looking at the numbers a different way (and including the commercial organics), there may be as many as 61,500 tons of organics *potentially* available in the entire County for composting (or digestion) (see Table 3). The table pulls out the total *potentially* compostable or digestible organics from the 2010 waste characterization. However, some of these tons will be very difficult to divert (it is not expected that any of the towns will be developing source-separated organics collection programs in the near future).

Table 3. Estimate of Total Potential Organics, Boulder County.

	Residential Tons	ICI Tons	TOTAL
Mixed Yard Trimmings	13,284	3,956	
Branches	1,624	1,140	
Leaves	5,366	5,105	
Food Waste	13,539	17,415	
TOTAL	33,813	27,616	61,429

So the total volume of organics potentially available needs to be to be measured against realistic participation and capture rates, available programs, and competing disposal alternatives. The following is a summary of programs in local communities. Western Disposal has estimated residential organics collection based on their records collecting this material in the City of Boulder, unincorporated Boulder County, and in Louisville. The volume collected ranges from 437 to 607 pounds per service address per year.

A recent study in Alameda County (California) looked at participation rates in commercial organics programs. Participation rates among commercial generators varied from 0% to 88% participation. This data is presented in Table 4. The large range of experience highlights the challenges of predicting participation among commercial generators. It is important to note that while commercial organics collection is not currently mandatory in Alameda County almost every jurisdiction in the county offers some type of a financial incentive to encourage participation. Both Boulder County and the City of Boulder offer modest incentives to encourage organics collection and zero waste practices. These incentives are summarized in Table 5. The other challenge is the range of food-generating businesses in Boulder County from small sandwich shops to large grocery stores. This makes it extremely challenging to generalize regarding volumes to be set-out. It is unknown exactly how much suitable, currently uncollected, commercial organics may be available.

Another recent study[2] reported commercial organics participation rates in EPA Region 5. The reported average commercial diversion rate was reported to be 21 percent, with the highest being 42% and the lowest 8%. Table 4 highlights the Alameda County data.

Table 4 Commercial Organics Participation Rates in Alameda County, CA

Jurisdiction	Number of Food-Generating Businesses	Participating Food-Generating Businesses	Percentage of Participating Food Generating Businesses
Alameda	308	218	71%
Albany	98	42	43%
Berkeley	707	241	34%
Dublin	177	104	59%
Emeryville	153	Unk.	Unk.
Fremont	655	70	11%
Hayward	725	94	13%
Livermore	342	119	35%
Newark	233	4	2%
Oakland	1,903	Unk.	Unk.
Piedmont	16	14	88%
Pleasanton	381	0	0%
San Leandro	243	120	49%
Union City	239	45	19%
Castro Valley SD	151	45	30%
Oro Loma SD	277	9	3%
TOTAL	6.608	1,125	17%

Other sources use a range from 20 percent to 75 percent. The City of Seattle expects to reach 75 percent commercial organics participation once their (soon to be approved) mandatory organics program is fully implemented.

[2] *"Best Management Practices in Food Scraps Programs"*, Econservation Institute, February 2012.

Table 5. Incentives for Organics Collection and Zero Waste in Boulder City and County.

City of Boulder Compost Incentive
Organics collection is available for businesses through local haulers. The City offers businesses an incentive of $2.50 per subscribed cubic yard of organics collection.

City of Boulder New Business Zero Waste Start-Up $250 Rebate
For any new commercial recycling and/or organics collection, the City will rebate up to $250 towards the purchase of interior bins, compostable bags, compostable service ware, and related items. An advisor is available to review a businesses needs and assist in the ordering process.

Boulder County $150 off of Zero Waste services coupon
Boulder County Resource Conservation Division reimburses businesses $150 towards new "Zero Waste Services" (which could include organics collection). This is done by providing a $150 "off" coupon, the coupons are redeemed by establishing new zero waste services.

City of Boulder. The City of Boulder (Population 101,808) has the most extensive organics collection program, with an estimated 23,261 single-family homes currently having curbside organic collection. An unknown number of commercial establishments also participate in food scraps collection, either via Western Disposal or Eco-Cycle. It is challenging to estimate the actual numbers of businesses participating, because many businesses in Boulder County share a trash, recycling or organics bin (i.e., there can be multiple businesses, but only one "account"). According to City of Boulder records for 2013, Western Disposal collected commercial organics (not including Multi-Family accounts) from 201 commercial accounts for a total of 1,589 tons; in the same period, Eco-Cycle collected 1,151 tons from 147 accounts. Both of these average out to slightly less than 8 tons per account. The City of Boulder has developed a Zero Waste Plan and a recent evaluation of that plan recommended implementing mandatory commercial and multifamily organics collection. If fully implemented, this will have an impact on the amount of food scraps collected in the County.

Boulder County. Boulder County (Population 61,982) represents residents in areas that Western characterizes as North, South, and Mountain. According to Western, approximately 19,346 single family homes in the unincorporated area (and townships) have curbside organics collection, with the majority of this being in the designated area of "Boulder County South", which surrounds the City of Boulder.

Table 6. Current Tonnages of Material Collected for Composting, Boulder, Colorado.

	Residential (tons)	Commercial (tons)
City of Boulder	4,035	
City of Louisville	1,126	
Boulder County Unincorporated	2,253	
Western Disposal		1,906
Eco-Cycle		3,525
TOTAL	7,414	5,431

City of Longmont. Longmont (Population 88,669) is the largest city in Boulder County with no curbside organics collection (they do offer brush and food scraps drop-off). The City provides municipal garbage collection and has plans to offer residential organics collection in the near future. The City of Longmont does not collect commercial waste and does not have any plans to provide commercial organics collection.

City of Lafayette. The City of Lafayette (Population 25,733) recently went out to bid for a hauler to collect residential organics. However, this bid will only cover those residents not within a Homeowners Association. In the short term, Western estimates that approximately 5,434 homes will have access to curbside organics, with an additional 3,023 homes coming online in the next 5 to 10 years.

City of Louisville. The City of Louisville (Population 19,074) currently provides approximately 5,138 single family homes with curbside organics collection. Western Disposal believes an additional 1,168 homes may come on board with curbside in the next 5 to 10 years.

Town of Superior. Superior, (Population 12,782) does not currently provide organics collection, nor were any plans identified to add this service in the future. However, Western assumes 781 tons might be collected (predominantly via commercial accounts) in the next 3 to 5 years. Superior has been promoting the use of under sink disposers, which could potentially reduce the volume of food that needs to be collected.

University of Colorado. One of the major generators in Boulder County is the University of Colorado (CU), which collects organics from its three main food service establishments (the residence halls/housing department, the student union, and the athletic department) and also collects wood from campus operations. The woody material tends to go to Western Disposal,

whereas the approximately 700 tons of food scraps goes to A-1 Organics via the transfer facility near Stapleton.

Tables 7 summarizes the current and the projected tonnage of organics collected in Boulder County. According to Western's records, they collected 7,432 tons of organics from the residential sector and 1,906 tons from commercial (52 businesses) for a total of 9,454 tons. In 2013, they produced roughly 20,000 yards of compost (from slightly less than 10,000 tons incoming).

Table 7. Projected Tonnage of Material Collected for Composting, Boulder, Colorado.

Jurisdiction	Projected Residential* (tons)	Projected Commercial (tons)**	
		Food Service Establishments***	Tonnage (@8 tons per account)
City of Boulder	5,086	402	3,216
Longmont	5,457	183	1,464
Lafayette	1,849	56	448
Louisville	1,423	51	408
Superior	781	24	193
Boulder County Unincorporated & Towns	4,640	108	864
TOTAL	19,236	824	6,593

* Residential Projections from Western Disposal.
** Commercial projects are based on reported collection tons per account from Western and Eco-Cycle. The University of Colorado (a major generator) may be inflating these numbers.
***These numbers may be food service "accounts" versus "food service establishments" as some food service businesses in Boulder County share one service account for multiple businesses.

The 2010 waste characterization may contain the most reliable waste characterization data for the entire county. This report has been supplemented with actual 2013 tonnage reports from the City of Boulder, the Zero Waste Program Evaluation and Western Disposal's Summary of Waste Sort Results (2013). In other cases estimates of capture rates have been made. However, based on the 2010 characterization, the total tonnage of organics disposed in Boulder County was 91,692 tons. Waste characterizations necessarily make generalizations about material types and include materials as "organic" which are nonetheless not typically accepted at commercial composting or anaerobic digestion facilities. By adding the tonnages of "mixed yard waste" (17,721 tons); "branches, limbs, etc." (2,765 tons), "leaves" (10,471 tons); and "food waste" (31,055 tons), there are a total of 51,562 tons of organics potentially suitable for processing in Boulder County. Breaking these numbers down further, the 2010 study estimated that residential organics comprised a total of 49,394 tons and commercial comprised 42,104 tons. If you break the residential organics stream down into its potentially capturable component parts you get (mixed yard waste, 13,284 tons; branches and limbs, 1,624 tons; leaves, 5,366 tons; and food scraps, 13,539 tons) there are 33,813 tons of residential organics available. If we break down the total commercial "organics" into categories potentially recovered for processing (i.e., mixed yard waste, 3,956 tons; branches and limbs, 1,140 tons; leaves 5,105 tons; and food waste 17,415 tons) there are 27,616 tons of commercial food being disposed that could *potentially* be recovered for composting.

As shown in Table 7, Western Disposal has projected their expectations for additional residential organics diversion. Western expects an additional 19,236 tons. If in fact there are an additional 33,813 tons of disposed organics, then Western expects an additional 56 percent of diversion from the residential sector. As mentioned elsewhere in this report, estimating organics collection participation within the commercial sector is more challenging. Table 7 shows one method of projecting additional organics tons. The average tons collected per account by both Western Disposal and Eco-Cycle is slightly less than 8 tons per account. Multiplying this number by the number of accounts provided in Western's estimate, Boulder County might expect an additional 6,593 tons. If there are 27,616 tons of potentially available commercial organics tons then this methodology is projecting an additional 24 percent recovery. Which is close to what the City of Seattle is projecting to collect based on implementation of their mandatory commercial food scraps collection ordinance.

SURVEY OF COMPOSTING CAPACITY

To begin the process of understanding both existing and needed composting capacity in the Boulder County region, IWMC surveyed key stakeholders to assess opinions and subjective impressions of the need for additional composting capacity. Surveys included:

Western Disposal Staff
A-1 Organics Staff
Eco Cycle Staff
City of Boulder
City of Longmont
City of Lafayette
City of Fort Collins
University of Colorado Recycling staff

In general, most interviewees were well aware of the current status of organics collection in and around Boulder County. Some of the entities were in favor of Boulder County siting a new compost or transfer facility to handle the volume that Western was not managing in the County. Others understood the nature of competition and realized there might not be a significant need for additional compost capacity in Boulder County at this time.

The following is a summary of the existing compost and future digestion capacity in the project area. The relative location of these facilities is shown in Figure 1.

Western Disposal. Western operates a 10-acre windrow composting facility in the City of Boulder. The facility is primarily accessed by Western for its residential and commercial customers. A discussion of the capacity of this site starts on page 15.

A-1 Organics, Keenesburg. A-1 Organics – a regional composting company, has two composting operations in the area. The Keenesburg facility is a very large site, with the ability to process a wide array of organics. Material delivered to this site from Boulder County is typically transferred at a site near the Stapleton Airport before being trucked to Keenesburg. The use of a Doda "bio-separation" system to remove contaminants may also have the unintended consequence of removing compostable bags and service ware delivered to this site, causing concern for some.

A-1 Organics, Eaton. The Eaton facility is the corporate headquarters for A-1 Organics was recently permitted to accept food scraps. This site now offers additional capacity, especially for organics originating in the northern part of Boulder County.

Heartland Biogas. Heartland Biogas is a large manure and food co-digester currently being constructed on a site near LaSalle, Colorado. While the facility is still being constructed, it is anticipated that it will target large generators of clean source-separated food scraps. A-1 Organics is under contract to supply food scraps to the facility. It is likely that this facility will source appropriate commercial food scraps from Boulder County and the surrounding area if possible, further diminishing the need for compost capacity in Boulder County. It is estimated that this facility will require 600 tons per day of suitable food scraps materials, or approximately 200,000 tons per year.

Colorado regulations for these types of facilities do not typically contain a specific capacity for a site, subject to limitations that may be imposed by a Certificate of Designation.

BACKYARD AND MID-SIZED ON-SITE COMPOSTING

While backyard composting is the most cost-effective and climate friendly manner in which to deal with residentially-generated materials, experience has shown that while a small percentage of residents will participate, not all residents will, making centralized collection and processing a necessity.

Some generators of organic materials choose to compost their own materials at their own site. While there are many benefits to this, there are also challenges. Many large generators who have considered mid-sized, on-site composting have not moved forward due to operational concerns and economies of scale. A recent study in King County, Washington found that although both schools and businesses were good candidates for on-site composting, though most businesses did not keep it up, especially if food scraps collection was available or would be available in 3 to 4 years. Schools were good candidates, but required ongoing training. Both types of generators reported a 7-year payback on purchase of the composting unit.

All of the entities interviewed for this report were asked if they were aware of any existing or planned mid-size on-site composting or anaerobic digestion operations. None were identified (though CU is, in the long-term, contemplating the possibility of on-site processing). This is important because there are a number of options available to food scraps generators and were a mid or large generator to implement an on-site program, it would reduce the volume of material potentially available to a Boulder County facility.

However, it is unlikely that any mid-size, on-site, or backyard composting efforts will significantly affect the need for curbside organics collection. Any projects that do develop will decrease the need for expanded capacity in the County.

ANAEROBIC DIGESTION AT THE CITY OF BOULDER WASTEWATER TREATMENT PLANT

There are a number of efforts across the country at select wastewater treatment plants (WWTPs) to accept both high strength liquids and/or municipal or industrial food scraps as a means of utilizing excess digester capacity while producing additional bio-gas. One of the most well-known of these projects is the East Bay Municipal Utility District's (EBMUD) project in Oakland, California. EBMUD receives food scraps from the City of San Francisco (and other sources) and co-digests them in one of their digesters. EBMUD originated this project as a way to utilize excess capacity in their digesters. Perhaps the key to this project (which is still considered a pilot project) is the existence of significant, built-but-currently-unused, digester capacity. Having the capital for the digesters already spent is one of the key factors in the economics of the project.

Since this ground-breaking project, a few other WWTPs have also entered into pilot projects to co-digest high strength liquids and food scraps, these include the Hyperion Treatment Plant run by the Sanitation Districts of Los Angeles County near Carson, California, and the Central Marin Sanitary District, near Novato, California. Other WWTPs have been developing capacity to take high strength liquids, like Fats, Oils and Grease (FOG) which is also seen to increase both revenues and gas production.

The challenges with accepting municipal food scraps at a WWTP are many. First, the plant must have available digestion capacity. Many observers believe that for this approach to work, there must be a dedicated digester, but most of the current pilots are working with existing digesters and co-digesting the food and biosolids.

The City of Boulder WWTP currently has two digesters, neither of which has "excess" capacity. A third digester was envisioned, but never built. Thus, there are a number of infrastructure improvements that would need to be made in order for the WWTP to be able to accept, process, and digest any locally generated food scraps or high strength liquids. One of the critical factors of the current co-digestion projects around the country is taking advantage of existing excess capacity. This was the primary motivation behind the EBMUD project. The economics of co-digestion at a WWTP become much more favorable when the hard infrastructure is already paid for. In the City of Boulder's case, in addition to the need to capitalize and construct a new digester, it is likely that the cogeneration equipment would need to be both upgraded and expanded to handle the increased gas load.

Also, it is unknown how much work is required to "clean-up" and change solid food scraps into a slurry that is suitable for co-digestion. This typically involves manual and mechanical sorting,

screening, and filtering to make a suitable co-digestion feedstock. Depending on the scale, the investment in the receiving and pre-processing technology could be significant. It is unknown whether or not residents would accept trash trucks hauling what is perceived as municipal solid waste to the WWTP. Certainly there would be an increase in traffic at the WWTP.

Acceptable Materials

One of the challenges of receiving municipal food scraps at a WWTP is that most food scraps programs allow residents or businesses to include many items which are compostable, but are not food (and may not be readily "digestible"). For example, paper products, like napkins and pizza boxes, and compostable service ware like PLA cups and plates. The current education materials used by Western Disposal and Eco-Cycle in their food scraps collection outreach programs include a large number of materials which would be challenging in a "low solids" digester environment (such as the one conducted by the City of Boulder WWTP). While the technology to remove these materials exists, it is unclear how residents (and program managers) might feel about encouraging residents and/or businesses to include items for recycling which are ultimately pulled out of the waste stream and disposed. The City of Portland (Oregon) is currently experiencing some growing pains along these lines as they switched from a composter to a digester for their municipally collected food scraps; the digester was not designed to handle large amounts of paper, cardboard, or compostable plastics. Many of these items are now excluded, causing confusion and frustration among some generators[3].

Compost Quality

Some observers are concerned that adding municipal food scraps to WWTPs and co-digesting the material with sewage sludge degrades the quality of the resulting product(s). While there can be perception issues regarding the disposal and use of biosolids, there may be no significant agronomic difference between food that is digested and put on agricultural ground and food that is co-digested with biosolids and put on similar agricultural ground. There are also some observers that believe that the energy inherent in food scraps should be put back on the soil, continuing the nutrient cycle, rather than being used for energy.

Summary

A feasibility analysis of adding municipal food scraps to a future digester at the City of Boulder WWTP could be completed as there may be some benefits of a co-digestion project, however it is clear from discussions with plant staff and IWMC's experience with similar programs (predominantly in CA) that because there is no significant digester capacity (i.e., no existing,

[3] *"Agency Shifts to Food-Only Commercial Organics"* BioCycle Magazine, July 2014 Pgs. 30 – 32.

vacant digester), the primary benefit of these programs (taking advantage of existing capacity, thus lowering production costs) do not currently exist at this plant. The challenges of accepting, cleaning, and processing food scraps in order to co-digest at a yet-to-be built digester, as well as the impact on the existing food scraps collection programs, would seem to present significant obstacles both in terms of project economics but also in terms of the impact on existing collection programs.

GRASSCYCLING AND WASTE REDUCTION

Grasscycling, the practice of leaving grass clippings on the lawn rather than collecting them, is by all accounts, a cost-effective and environmentally friendly practice. Numerous state and local programs across the country strive to promote this practice via brochures, trainings and providing low-cost "mulching" mowers. Grasscycling has the potential to divert significant amounts of grass from municipal collection programs (whether destined for landfill or composting). It is unknown exactly how much grass is contained within the overall organics waste stream in Boulder County, but it is not insignificant. The challenge with grasscycling is quantifying the actual impact of an outreach program promoting it. The City of Seattle estimated that a homeowner aggressively grasscycling could perhaps divert as much as 500 pounds per 1000 square feet of lawn. However, grass generation varies significantly based on climate and soil type and the Seattle estimate probably overstates what one might expect in Boulder. In order to properly quantify the effect of a grasscycling outreach program, one would need to establish a baseline (How many people are already grasscycling? What is the total area of managed turf within the study area?). Any individuals already grasscycling might not have had their tonnage show up in the 2010 waste characterization.

So, while encouraging grasscycling is an excellent practice, one that promises reductions in greenhouse gasses, and potentially the need to collect less yard trimmings, no studies were identified which reasonably quantified the impact grasscycling might have on the needed compost capacity in Boulder County.

Colorado is an arid climate and some homeowners and businesses have begun to recognize this in their landscaping and have promoted "xeriscaping" which includes drought tolerant, low water using, and native plants. These are all positive developments and to the extent possible, could be encouraged by Boulder County. However, as shown in the 2010 Waste Characterization, there are still significant yard trimmings and organics heading to area landfills. Thus, whatever impact xeriscaping or drought-tolerant landscaping may be having on the generation of yard trimmings is very hard to measure.

COMPOST CAPACITY

It is important to understand that there are many factors which go into calculating a given site's capacity (and many management techniques an operator can use to manipulate that capacity). First and foremost might be that Western Disposal does not compost 100 percent of what is delivered to the site. According to *"Organics Processing Capacity Requirements for Boulder County"* (see Appendix B) Western processed 20,000 cubic yards of compost, 31,500 cubic yards of mulch, and 7,650 cubic yards of ground wood in 2013. Thus, out of 59,150 cubic yards processed, only about a third was made into compost. Most compost operators have this flexibility and use it to manage material and market fluctuations.

Existing Capacity at Western Disposal

IWMC conducted interviews with facility staff and toured the compost operation run by Western Disposal located in the City of Boulder. Western Disposal operates a traditional windrow operation, largely serving the needs of Western's customers who contract with Western for organics collection services. The facility receives both yard trimmings commingled with residential food scraps as well as commercial food scraps. In addition to discussing the site and capacity issues with Western Disposal Staff, IWMC reviewed the *"Organics Processing Capacity Requirements for Boulder County"* document prepared by Western. Using assumptions provided in that document and from Western staff, IWMC created an estimate of the facility capacity based on the available land at the site and assumptions about size of windrows and residence time. These calculations are contained in Appendix A. It is estimated by Western that they are currently processing roughly 10,000 tons per year (9,454 tons processed in 2013) on the current pad which is 6.41 acres. Western believes that a total of 10.73 acres of "pad" could be permitted at this site. Western estimates the current pad (6.41 acres) could accommodate 14,500 tons of material per year. If the "full" pad were used, Western believes they could accommodate 24,272 tons per year (more than they believe is available in the waste stream).

Although IWMC's on-site investigation only included a short site visit, the existing site does not appear to be anywhere near its capacity. IWMC observed quite a bit of additional windrow area and very small stockpiles of material. Also, the site is managed moderately, with a relatively long retention time (2 cycles per year, or a 6 month retention time). Decreasing the retention time from two turns per year, to three (or four) would have a significant impact on both production and capacity.

Estimate of Additional Capacity at Western Disposal

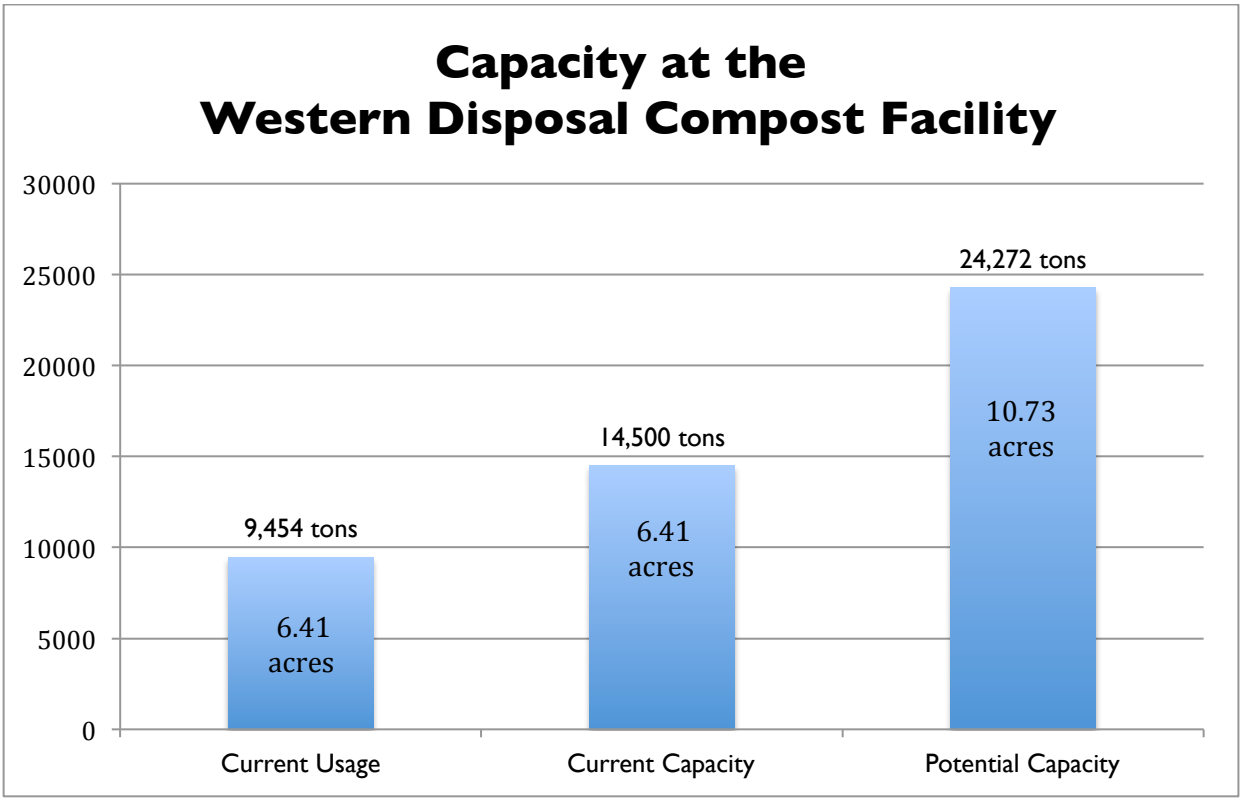
Western Disposal provides two estimates of the capacity of the composting site in their *"Organics Processing Capacity Requirements for Boulder County"* document. This document looks at the current permitted pad (6.41 acres) and assumes that the amount composted on it today is

the "Actual" (9,454 tons) and that a larger amount is the "Capacity". By increasing the pad size by 4.32 acres (a 67 percent increase), Western believes they can also get a concurrent 67 percent increase in the "Capacity". Western further believes that the addition of nitrogen (needed to reduce the carbon to nitrogen ratio) would allow them to increase the speed of the composting process (or decrease the retention time). Nitrogen is more plentiful in food scraps than in yard trimmings. One way to reduce the carbon to nitrogen ratio would be to accept more food scraps - though not all materials covered under the term "food scraps" are low in carbon (cardboard from a supermarket, for example). The Western analysis appears to be saying that they could double the tonnage received at the current pad (from 7,548 tons to 15,825 tons), and by increasing the available pad they could go from processing 12,594 tons, to 24,273 tons. Further, by decreasing the retention time, (from 2 turns per year to 2.5 turns) they could process up to 30,340 tons per year. Earlier in the document, Western estimates a total of 19,190 tons available within the entire Boulder County waste stream, including those cities which do not currently have organics collection. It is unclear whether or not this analysis includes additional commercial organics. However, what Western is saying is that they have more than sufficient capacity for all of the projected organics in the County. Figure 3 shows graphically the representation between the current utilization of the compost facility operated by Western Disposal, its potential utilization (both on the 6.41 acre pad) and the potential future capacity on the expanded 10.73-acre pad.

IWMC Estimate of Compost Capacity

As shown in Appendix A, using simple calculations of windrow size and retention time, the 10.71 acre site could accommodate approximately 30,000 cubic yards at any one time, or per cycle. Thus, if aggressively managed the site might be able to produce three or four times that volume on the 10-acre site. Conversions of yards to tons varies, but using a conservative estimate of bulk density and a conservative estimate of volume reduction during composting the site could be managed to accommodate 30,000 cubic yards per cycle. How many cycles are completed in a year makes a significant impact on the capacity of the site. Western currently completes two cycles per year. They believe with additional nitrogen (to decrease the carbon to nitrogen ratio) they could accommodate 2.5 cycles per year. However other management techniques could be employed (including more frequent turning, different turning equipment, closer attention to process variables and overall increasing management intensity) that would increase the site's capacity well beyond 2.5 cycles.

Figure 3. Capacity at the Western Disposal Compost Facility in Boulder Colorado.



IWMC's analysis is based on using assumptions of existing equipment and operating practices. The site currently uses a Resource Recycling Systems KW 616 compost turner. This machine can accommodate a windrow of approximately 6 feet high by 16 feet wide. In practice, this makes a windrow of approximately 2.2 cubic yards per linear foot[4]. The formula for calculating the area of a trapezoid is A = h x (b-h), where b is the base and h is the height. Thus 6 x (16 - 6) = 60 cubic feet. To convert this to cubic yards, divide by 27 (the number of cubic feet in a cubic yard), thus the KW 616 creates a windrow profile of approximately 2.2 cubic yards per linear foot. This value can then be multiplied by the available area, minus the area needed for aisles and related space. Assuming a 15-foot aisle between piles, the 10.73-acre site could accommodate approximately 38 windrows at one time. The other major factor influencing site capacity is the retention time and management intensity. Currently the facility is managed rather moderately, with two "turns" per year. By increasing the management intensity of the facility (decreasing the carbon to nitrogen ratio, and more actively managing the site) the number of turns could be increased. Also it is important to note that a site that is

[4] The manufacturer of this machine uses a slightly different formula (2/3(6*16)/27 which gives a slightly larger yardage per linear foot (2.38), making our assumptions slightly more conservative.

predominantly managing yard trimmings may have more capacity for food scraps than would seem apparent. This is because food scraps are predominantly water and do not add a significant amount of volume, the way adding a similar volume of yard trimmings might. Thus adding a cubic yard of food scraps to say, 5 yards of yard trimmings does not necessarily equal six yards; the bulk density of the piles increases, but the volume does not increase commensurately. This is especially true over time as free liquid in the food scraps replaces the moisture required for composting.

Additional Capacity Needs

At this point, there is not sufficient evidence that additional capacity (beyond expanding the permitted pad area to 10.7 acres) is needed at the Western Disposal site. Recent bids (City of Lafayette) have taken some of the potential volume off of the table, in the sense that this material will be going to the A-1 site in Keenesberg. Although Western Disposal has estimated potential future growth in organics collection programs, it is not certain how much of this will be directed to the Western site. It is also unclear how much suitable commercial organics may be available for composting in the future. Further, there may be increased competition for commercial organics once the Heartland Biogas facility is operational and is potentially attracting some commercial food scraps from the Boulder County region. A-1's facility in Eaton was also recently permitted to allow food scraps, further expanding available compost capacity in the region.

MANDATORY ORGANICS COLLECTION

The City of Boulder has established an aggressive Zero Waste goal. As part of understanding this goal, the City commissioned a Zero Waste Evaluation Study in 2014. This report has a number of recommendations, which, if implemented, may have an impact on Boulder County's need for additional Organics Processing Capacity. IWMC has reviewed the Zero Waste Evaluation Study and also contacted cities with similar goals and plans in place to determine a sense of the impact such goals might have on organics collection and processing. These issues are discussed below.

Zero Waste Evaluation Study

This report identifies a figure of 20,600 tons of organics being landfilled annually. It is not clear where this figure comes from. The report makes a number of recommendations which, if fully implemented, could potentially affect the need for additional organics processing capacity in Boulder County, these include:

- **Every other week trash collection.** Concurrent with this, organics collection would be changed to weekly.

- **Multi-Family Organics Collection.** Modify existing policy to require haulers to provide organics collection to homeowners with shared trash containers.

- **Mandatory Commercial Organics Collection.** This would require all commercial establishments to subscribe to organics collection.

- **Use of Compostable Packaging**. It is unclear how this might affect the organics collection program, but it is generally understood that the use of compostable bags increases participation in organics collection programs.

- **City purchase of Locally-Produced Compost.** This is intended to help support the market development efforts of the city's compost producers.

Table 8 summarizes the expected diversion identified in the Zero Waste Evaluation Study.

Table 8. Estimated Diversion from Zero Waste Evaluation Study.

Program	Expected Diversion
Weekly Collection of Organics	Not Estimated
Multi-Family Organics	300 – 600 TPY
Mandatory Commercial	8,900 – 17,700 TPY
Use of Compostables	Not Estimated
TOTAL	8,900 – 17,700 TPY

Thus, the Zero Waste Evaluation Study is predicting, out of a total of 20,600 tons disposed, implementing the abovementioned programs will achieve between 43 percent and 86 percent diversion of the commercial organic stream. The City of Seattle, which has been aggressively collecting commercial organics for roughly 8 years, in an open market system with aggressive contractors, is currently achieving an estimated 50 percent capture rate. As described below, the City of Seattle is currently contemplating and is likely to adopt and ordinance requiring collection of commercial organics. City staff expect that over time, they will achieve a diversion rate of up to 75 percent. Thus the estimates in the Zero Waste Evaluation Study may be aggressive, if not overstated.

Cities With Mandatory Organics Collection

As of the writing of this report, the only US city with mandatory organics collection is San Francisco, CA. However, a number of other programs are currently in the development or near implementation stages of similar programs. Table 9 summarizes the programs in a number of cities which have mandatory commercial organics programs (or something similar). These include San Francisco, California; Seattle, Washington; Portland, Oregon; New York City, New York; and Vancouver, British Colombia. Each of these programs is described below.

City and County of San Francisco. The City and County of San Francisco, a very dense urban area, developed an ordinance requiring separation of organics in 2009, more than 10 years after implementing voluntary source-separated organics. The text of the Ordinance (100-09) is contained in Appendix C. San Francisco, a city that covers a mere 49 square miles (smaller than the footprint of the Denver Airport) has far less green material than a typical northern California community and have been collecting food scraps separately since 1997, going citywide in 1999. Because residential food scraps and commercial food scraps are often commingled on the tipping floor of the Recology MRF, (prior to composting) IWMC was not able to identify any data showing a specific increase in participation based on transitioning from voluntary food scraps collection to mandatory. The total amount of organics collected has certainly increased, but no metrics that would be useful for this report were identified. One

Table 9. Cities with Mandatory Organics Collection

Jurisdiction	Population (2012)	Ordinance
San Francisco, CA	825,863	Required residents and businesses to separate food scraps from garbage in 2009.
Seattle, WA	634,535 (Metro 3.5 million)	Proposed Ordinance would go into effect 1/1/2015, enforcement would start 7/1/2015. Ban includes food, food soiled paper, cardboard, etc.
Portland, OR	603,106 (Metro 2.3 million)	No ban. Residents have every other week trash and weekly, inclusive organics collection citywide. Having issues with material types and processing facilities.
New York, NY	8,337,000	Local law 146-2013; on or after July 1, 2015, "Covered entities must either arrange for separate collection; transport their own organic materials for processing; or engage in on-site processing. Covered entities include: Businesses generating more than one ton of food waste per week.
Vancouver, BC	603,502 (Metro 2.3 million)	Disposal of organic materials not allowed in regular garbage, including food scraps, and yard waste (which is already banned). Goes into effect 1/1/2015.

Copies of relevant laws, fact sheets, etc., as well as contact information for the selected cities, are contained in Appendix C.

report[5] claims that "Organics collection increased by 45%" but without a baseline and tonnage data, it is difficult to know what to do with this metric. Also, San Francisco has a number of unique facets which make it a difficult city to compare to other cities and has come under fire recently for some of the ways they (and their City-Charter-mandated hauler, Recology) count some recycling[6].

City of Seattle, Washington. Seattle is on the cusp of implementing a mandatory food scraps collection ordinance, but of the date of this report, they have not approved such an ordinance. City staff projects that collected organics will increase 25 percent. But they have no operational data to back up this claim. Seattle's food scrap ban will most likely look much like their existing "Director's Rule SW-402.1", which requires businesses to recycle "significant amounts" (defined as more than 10 percent) of disposed paper, cardboard, cans, bottles, etc. The proposed ordinance will add food to the mix of required materials. The City enforces the existing bans on businesses using inspectors and fines.

Portland, Oregon. Portland, Oregon also does not have a mandatory organics collection ordinance, but has switched all residential customers to every other week garbage service with weekly, inclusive green bin (all organics) collection. As mentioned earlier in this report, Portland has struggled with implementing some aspect of these programs. The switch from weekly to every-other-week happened relatively quickly and caused some confusion. The closure of one of the City's contracted composting sites due to odors has also put strain on the program[7] A recent audit of the City's program found the residential side of the program was functioning as expected but the commercial sector was experiencing a number of issues.[8] The Audit reported 58 percent of the commercial food scraps in Portland are collected and sent to composting and/or digestion. The main recommendation of the Audit was that Portland's Bureau of Planning and Sustainability should:

> "Increase the food waste participation rate for the commercial sector, including multifamily housing units. Identify clear incentives for businesses to divert food waste from the landfill."

[5] http://sfenvironment.org/news/press-release/sf-attains-77-percent-recycling, accessed September 18, 2014.
[6] http://fivethirtyeight.com/features/san-francisco-stalls-in-its-attempt-to-go-trash-free/, accessed September 18, 2014.
[7] *"Agency Shifts to Food-Only Commercial Organics"* BioCycle Magazine, July 2014 Pgs. 30 – 32.
[8] http://www.oregonlive.com/portland/index.ssf/2014/04/portland_composting_audit_find.html, Accessed September 18, 2014.

New York City, New York. The City of New York, under the last days of the Bloomberg administration enacted fairly sweeping food waste collection legislation (Local Law 146-2013) which will go into affect on July 1, 2015. New York's law is modeled after similar, typically state legislation (like Connecticut, Rhode Island, and Massachusetts) which require certain (typically larger) generators to collect, self-haul or manage onsite their organics. A copy of Local Law 146-2013 is contained in Appendix C. IWMC did not identify any projections of participation by the City, regardless, collecting food scraps separately on the East Coast is very new and perhaps more challenging then on the West Coast and it remains to be seen what type of metrics these programs might have. There are also serious issues with lack of local infrastructure which may influence how well these programs might do. Local Law 77 established a pilot collection program which will run from September 2012, through the implementation of Local Law 146[9]. Although there is some data from this pilot study, the only "commercial " accounts participating in the program have been schools, which may not be representative of the larger category of commercial generators (i.e., supermarkets, restaurants, etc.).

Vancouver, British Colombia. The City of Vancouver, British Columbia has completed a rigorous planning and consultation process for developing a future organics disposal ban. While the consultation process is complete, the ban is not yet in effect. In fact, the strategy to implement the ban has not been made public yet either. Although the Metro Vancouver website has a great deal of information regarding the consultation process, there is obviously, no hard data from the program. Vancouver has had success banning other materials from landfill disposal and feels that they will be successful with the food scraps ban. Non-compliance will be monitored with inspections and fines.

[9] http://www.nyc.gov/html/nycwasteless/html/resources/reports_LL77_DiversionReport_June2014.shtml, accessed September 18, 2014.

STRUCTURAL/POLICY NEEDS

Although the City of Boulder has an aggressive zero waste plan and a number of programs which could potentially increase the need for organics processing, it is challenging to recommend an investment in compost capacity to Boulder County at this time. To the east of Boulder, in Eaton, Keenesburg and near LaSalle are three facilities which offer significant amounts of capacity for food scraps. The Heartland facility is estimated to require as much as 600 tons per day of food scraps. A-1 Organics Eaton facility was recently permitted to allow acceptance of food scraps.. Similarly the A-1 Keenesburg facility is currently receiving food scraps from Boulder County and is expected to continue to do so. Both of the newer facilities (Heartland and Eaton) may likely draw food scraps material from Boulder County. Secondly, waste hauling in Boulder County is largely an open market system. This is particularly true for commercial organics. Even if the County were to develop in-county capacity, there is no guarantee that any of the potential commercial organics would flow to the facility. Although there are administrative structures which might remedy this, they are beyond the scope of this report.

FACILITY NEEDS

The following section describes aspects of developing a potential stand-alone facility, including economic impacts, siting criteria, and costs.

Environmental Impacts

Ideally composting sites are developed with mitigations in place to minimize potential environmental impacts. A full environmental review should be completed before or during the siting process. The major potential environmental impacts of a municipal or commercial composting facility include odors and air quality, transportation (traffic issues), noise, and dust. Most of these can be mitigated through project design and an adequate siting analysis. Table 10 lists a summary of potential environmental impacts to be expected with a municipal or commercial compost facility.

Some of these impact areas may have state or local requirements (like depth to groundwater or proximity to water courses), which should be reviewed before embarking on a siting analysis.

Siting Requirements

Every individual interviewed for this project believes siting a new composting facility in Boulder County would be a challenge. Identifying ten-acre (or larger) parcels suitable for an industrial composting site is challenging in most urban and suburban areas. Many of these facilities are sited on agricultural land, far from sensitive receptors. While it is possible that a potential site exists within Boulder County for a new compost facility, it is beyond the scope of this report to identify potential sites. To maximize efficiency, the site would most likely be located in the Northern part of the county surrounding Longmont, the largest city in Boulder County yet to implement curbside organics collection.

There are any number of siting criteria which can be accounted for when siting a municipal or commercial composting facility. The criteria listed in Table 11 is a good place to start. Each of these criteria is discussed below. In addition there may be site or County-specific siting criteria which may be added to this list.

Table 10. Potential Environmental Impacts at Composting Facilities.

Land Use/General Plan Consistency
Geologic Resources
Resources/Parks
Sewage/Water Quality
Water Supply/Drainage/Flooding
Biological Resources
Transportation
Population/Housing
Safety/Health
Air Quality (Odor)
Noise
Aesthetics
Energy
Historical/Archeological
Public Services/Utilities

Table 11. Siting Criteria for Municipal Composting Sites.

Transportation Impacts
Transportation Distance
Traffic
Air Quality
Neighborhood Impacts
Air Quality (odor)
Noise
Environmental Impacts
Biological Resources
Cultural Resources
Hydrology and Water Quality
Site Costs
Site Acquisition Costs
Population and Housing
On-Site and Off-Site Development Costs
Utilities and Service Systems
Land Use Designation and/or Zoning
Visual Impacts

TRANSPORTATION IMPACTS

Transportation Distance. How far is the site from the material centroid?

Traffic. What is the impact of siting a facility at this location? Is the Level of Service for access roads going to be impacted by the additional traffic the facility will bring? How many new trucks will the facility need for feedstock receipt and product delivery? Does the facility have good access for heavy trucks?

Air Quality. What are the potential air quality impacts of the facility? What is the horsepower of the processing equipment? Will processing equipment be diesel or electric? What are the expected transportation emissions?

NEIGHBORHOOD IMPACTS

Air Quality (odor). What is the potential for the site to create objectionable off-site odors? Are there competing sources of odor in the vicinity? What are the prevailing winds?

Noise. What is the noise standard for the neighborhood? Can the facility meet this?

ENVIRONMENTAL IMPACTS

Biological Resources. Are there valuable or important biological resources on the site that need to be protected or avoided?

Cultural Resources. Are there identified cultural resources on the site which must be protected or avoided?

Hydrology and Water Quality. Are there water resources (wells, ponds, or rivers) in close proximity to the site which need to be protected? Is the site soil adequate to protect groundwater resources? Does the site have positive drainage?

SITE COSTS

Site Acquisition Costs. What is the cost of land? Is the site sufficiently sized to plan for future growth and expansion?

Population and Housing. Will the project affect developing neighborhoods or traditional housing areas? Is the project slated for new residential development? Is there anything preventing (or encouraging) new population growth around the facility? What is the ultimate density of nearby residential housing?

On-Site and Off-Site Development Costs. What are the site development costs? Are there off-site development costs (extensions of roads, pads, buffer areas, etc.)?

Utilities and Service Systems. Are existing utilities available on site or will they need to be extended? Water? Electricity? Roads? Etc.

LAND USE

Land Use Designation and/or Zoning. What is the current zoning of the site? What is the land use designation? Is the site identified in any specific plans? What is the surrounding land use and is it compatible with commercial composting?

Visual Impacts. What are the potential visual impacts of the facility? Will the facility impact any scenic view or vista? Is there any potential for a visual buffer?

COST ESTIMATE

In order to estimate the costs of developing additional capacity for composting in the Boulder County region, a conceptual facility was developed for the purposes of developing an order-of-magnitude cost estimate. The order-of-magnitude cost estimate involved estimating the capital costs of a 30,000 ton per year facility. There are definitely economies of scale in composting, so larger facilities have lower unit costs.

Capital Costs

Capital costs would primarily include a grinder, a compost turner, a water truck, and a screen[10]. Rolling stock would include one or two front-end loaders. Perhaps the biggest individual capital cost would be in site acquisition. Acquiring ten, relatively flat, vacant acres in the appropriate project area, far from sensitive receptors, would be a challenge and might require a formal siting study. A summary of order-of-magnitude capital costs is shown in Table 12. This estimate envisions a 30,000-ton per year site, using equipment similar to what Western Disposal is currently using.

Table 12. Order-of-Magnitude Capital Costs for a 30,000 ton per year Compost Facility*

Equipment	Unit Cost	Number	Total Cost
Site Improvement Costs	$500,000	1	$500,000
Front End Loader	$350,000	2	$700,000
Grinder	$850,000	1	$850,000
Windrow Turner	$300,000	1	$300,000
Water Truck	$300,000	1	$300,000
Trommel Screen	$200,000	1	$200,000
Yard Truck	$50,000	1	$50,000
		Capital Costs	$3,900,000

*These costs are order-of-magnitude costs for planning purposes, this is not meant to be a construction estimate.

This estimate does not include a cost for land acquisition. If privately-owned land were purchased, it could easily cost an additional $1,000,000 (10 acres @ $100,000 per acre.). Unfortunately, given the economies of scale in composting, the capital costs for a small site are significant. This estimate assumes purchase of all new equipment and significant site improvements to accommodate permitting requirements (primarily for pad surface and

[10] The equipment chosen for this representative analysis matches the equipment currently in use by Western Disposal, a Vermeer 8000 grinder, a Wildcat 516 screen, and a KW 616 windrow turner, the front-end loaders and the yard truck were generic based on IWMC's experience.

stormwater management). Clearly trying to amortize the costs of a ten-acre site and the equipment to process 30,000 tons of material are significant. Unfortunately the only way to reduce the unit costs is to spread them over additional tons processed. Five million dollars divided by 30,000 tons is approximately $166 dollars per ton. Obviously a County-financed facility could amortize this cost over a longer period but regardless, it would be a significant investment.

Also, the City of Boulder has identified mandatory collection of both commercial and multi-family organics. The quality and composition of materials collected from voluntary source-separated organics collection programs tend to differ significantly from the quality and composition of materials collected from mandatory commercial and multi-family organics collection programs. In general, organics collected from mandatory programs and multi-family units tend to have significantly more contamination – predominantly glass and plastic. If these materials are to be managed at the publicly-owned and privately operated facility, additional capital will be required for either manual or automated contamination removal equipment. Given Colorado's climate, contamination removal would likely have to take place inside of a building, further escalating capital costs.

Operating Costs

IWMC has developed a conceptual order-of-magnitude estimate of operating costs. These costs are for planning level discussions and should not be construed as detailed construction or operating costs. Operating costs for composting facilities can be highly variable. Labor, fuel, and equipment maintenance can vary significantly based on feedstock, management practice, fuel prices, etc.

Labor

It is assumed the facility could be managed with one management level general manager/foreman and three equipment operators and a laborer. However, labor requirements can vary significantly. For example if the City of Boulder implements mandatory commercial and multifamily organics collection, the facility may need to add additional labor to sort contaminants out of the feedstock. This may also affect the capital costs as the facility may require a sorting building and an elevated sorting platform to conduct the sorting.

Fuel

All of the key processing equipment would be portable and diesel powered, including the grinder, turners, screen and two front-end loaders. In order to estimate fuel use an estimate of productivity was made based on the equipment selected above, against the tonnage processed. Obviously fuel can be one of the most variable costs at an operation like this.

Maintenance

The capital budget assumes all new equipment, but all equipment requires regular scheduled and unscheduled maintenance. Maintenance estimates were based on hours worked and manufacturer's estimates. Composting is a particularly challenging work environment and maintenance costs are better estimated based on real world experience after a number of years operating a given piece of equipment.

Testing, Supplies, Etc.

The O&M cost estimate includes modest cost for supplies and for analytical testing.

Table 13. Order-of-Magnitude Operating Costs for a 30,000-ton per year Compost Facility.

	Range	
	Low	High
Labor	$250,000	$350,000
Maintenance	$70,000	$190,000
Fuel	$70,000	$150,000
Supplies, testing, etc.	$10,000	$10,000
TOTAL O&M Costs	$400,000	$700,000

Operations and maintenance costs for a 30,000-ton per year facility would have a range of $400,000 to $700,000 per year. Some of the annual costs are highly variable. Chief among these are labor and fuel. However, unscheduled maintenance can also be highly variable. If Boulder County decides a new stand-alone compost facility is critical infrastructure then the County should conduct a detailed engineering analysis and cost estimate to refine these estimates. These estimates are designed to give solid waste planners an order-of-magnitude understanding of the costs of a stand-alone facility,

FINDINGS

1. There appears to be a significant amount of both available and potentially available capacity for additional feedstock to be processed at the Western Disposal Compost Facility.

2. Combining the total available capacity of the Western Disposal site (potentially up to 25,000 tons per year), the A-1 Organics Eaton site (up to 50,000 tons per year) and the Heartland Biogas facility (approximately 200,000 tons per year - of food scraps), as well as the Keenesburg facility (capacity unknown, but it is a very large facility) there is more than adequate capacity for all Boulder County generated organics in the region.

3. The cost of developing a stand-alone, publicly owned compost facility is on the order of magnitude of $4 million, not including land acquisition cost. These costs will increase if the City of Boulder (or other major generators) develop a mandatory organics collection ordinance for commercial and multi-family organics (due to potential contamination).

4. The annual operations and maintenance costs for a stand-alone, publicly owned compost facility is on the order of $400,000 to $700,000. O&M costs are highly variable and a more detailed cost estimate should be conducted if the County is to pursue this option.

5. Most observers believe it would be very challenging to find a suitable, affordable site in Boulder County for a regional compost facility. Although a few potential sites have been identified, that is just the first step in the process of developing a facility.

5. Although the City of Boulder Wastewater Treatment Plant is potentially interested in co-digesting food scraps with their biosolids, there is no extra capacity (no existing dedicated digester) to accomplish this. Developing a new, stand-alone digester, with the requisite upgrades to energy generating equipment will be a significant cost.

6. Boulder County is an open market system for solid waste and recycling. There is no guarantee a given hauler will deliver organics to a county-owned facility. Numerous efforts to develop publicly-owned, and privately operated facilities have failed recently, for a number of reasons. The need for guaranteed feedstock definitely played a role in some of these failures (Sacramento County, Sonoma County Waste Management Agency, and Alameda County Waste Management Authority, to name three).

RECOMMENDATIONS

1. Based on the available organics processing capacity in the region, combined with the uncertainty of the development of additional collection programs in an open market system, there would not appear to be a compelling need to develop stand-alone compost capacity in the county at this time. Given that access to the Western Disposal compost site can be limited, Boulder County could explore avenues that expand access to the Western site. This could include the development of a public private partnership, or another form of arrangement.

2. If Boulder County wants to increase participation in organics collection by the commercial sector, they should fully investigate means of providing increased financial incentives or developing a mandatory ordinance. However, these tools (incentives and ordinances) require concurrent and significant public education and outreach. This should be part of any cost estimate of the program.

3. The City of Boulder could consider conducting a feasibility analysis of accepting municipal food scraps at the wastewater treatment plant, which would further refine the needs for this alternative to move forward.

4. Boulder County could consider conducting a targeted analysis focusing on generators of commercial organics to determine the current participation levels and future potential volumes of commercial organics. This study could try to bring clarity to the "number of accounts" versus "number of food generating businesses" discussion and also identify a more accurate estimate of current participation levels and likely future participation levels.

REFERENCES

Organics Processing Capacity Requirements for Boulder County, Undated, Western Disposal, Internal Document

Final Organic Waste Management Feasibility Evaluation Report for Boulder County, Colorado, Tetra Tech, Inc. October 11, 2010.

Final Organic Waste Generation and Management Survey Report for Boulder County, Colorado, Tetra Tech, Inc., October 8, 2010.

2010 Waste Composition Study, MSW Consultants, December 2010.

"Agency Shifts to Food-Only Organics" BioCycle Magazine, July 2014, Pgs. 30-32.

"Using In-Vessel Systems to Compost Food Residuals" On-site Composting Takes Root in King County, Undated. King County Website: http://your.kingcounty.gov/solidwaste/garbage-recycing/onsite.asp

On-Site Composting of Restaurant Organic Waste, Economic, Ecological, and Social Costs and Benefits. Undated Master's Thesis, Marissa Mitchell.

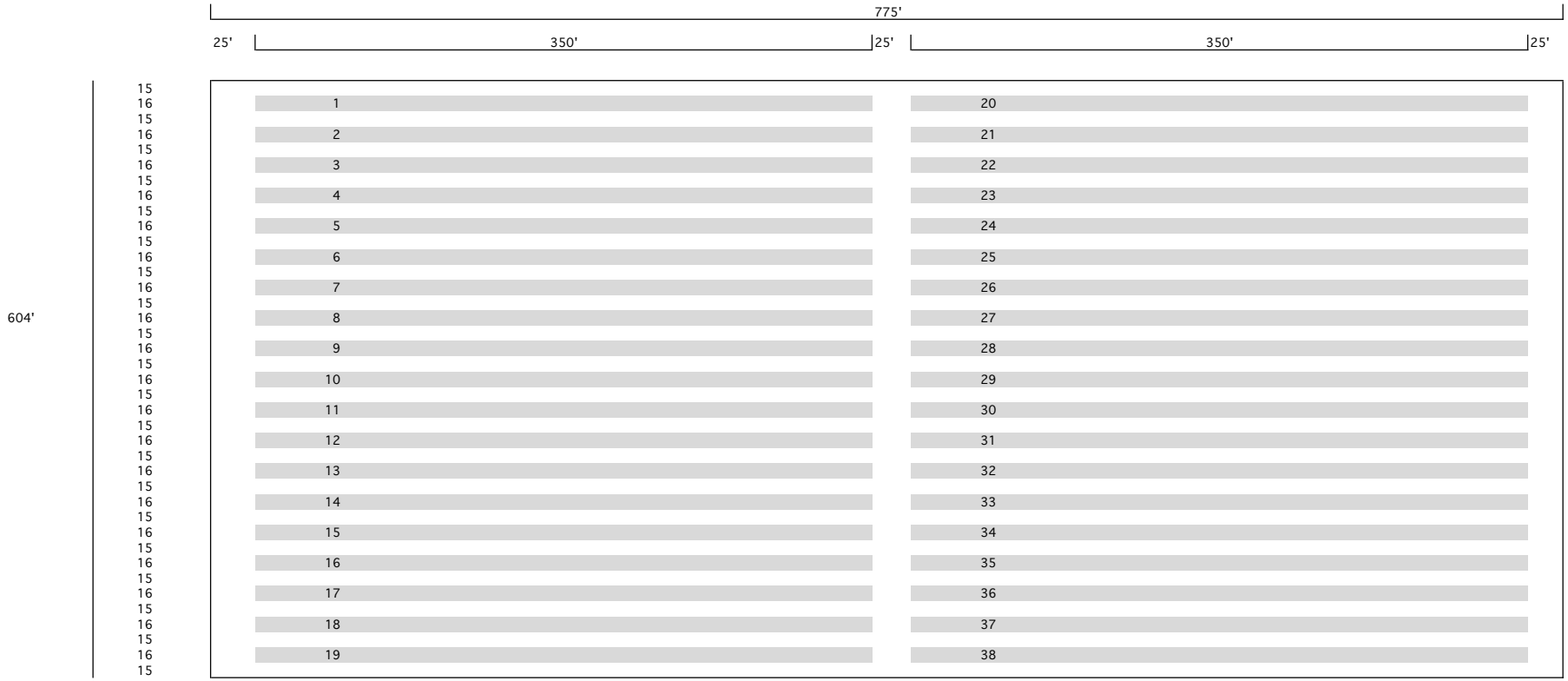
Zero Waste Evaluation Study, Final Report, Kessler Consulting, January 2014.

APPENDIX A
Compost Site Capacity Analysis

IWMC's analysis and assumptions for the compost site capacity analysis and a site plan follow this page.

BOULDER COUNTY COMPOST CAPACITY ANALYSIS
Site Capacity Review of Western Disposal

Windrowing Area	467,399	Square feet
	10.73	Acres
	Site	
Windrow Profile		
Base	16	Feet
Height	6	Feet
Top	8	Feet
Length	350	Typical
Aisle Width	15	feet
Profile	2.2	cubic yards per linear foot
Windrow Area Requirements		
Windrow Area	5,600	square feet
Aisle Area	5,250	square feet
Total Windrow Area	10,850	square feet
Additional space needed	1610	Square feet per windrow
tal area needed per windrow	12,460	Square feet per windrow
Number of windrows	38	
Bulk Density	1000	pounds per cubic yard
Capacity		
	29,176	cubic yards per cycle
	14,588	tons per cycle
Assume 30 percent reduction		
	37,929	cubic yards per cycle
	18,964	tons per cycle
Assume 2 cycles per year		
	75,857	cubic yards per year
	37,929	tons per year
Seven day per week basis		
	211	cubic yards per day
	105	tons per day



	604		
Length	775	One windrow =	778 cubic yards
Width	604		
Area	468100	38 windrows =	29,564 Cubic yards
	10.7 Acres		

APPENDIX B

Organics Processing Requirements For Boulder County

The Western Disposal-produced Report: "Organics Processing Capacity Requirements for Boulder County" follows this page.

Organics Processing Capacity Requirements for Boulder County

ISSUE:

As Boulder County and many of the incorporated entities within it move towards zero waste, questions have arisen about the adequacy of existing facilities in the County to handle potential volumes of materials coming from both current and new programs.

One of the facilities being scrutinized is the Western Disposal Services Organics Processing Facility located at 2655 N. 63rd Street in the City of Boulder. This report attempts to quantify potential volumes and establish the capacity of the Western facility.

The Site:

The site is a 13.98 acre piece of land situated on 63rd Street in the City of Boulder between the Boulder County Recycling Center and the Stazio Ball fields. Of the 13.98 acres in the site, 10.73 acres are suitable for compost operations. The site is permitted to accept vegetative waste only and has been in operation since 2001.

The Western Facility was built by Western to process the materials they were collecting from their own residential and commercial customers.

When the City of Boulder and parts of Boulder County mandated haulers collecting residential refuse had to imbed organics collection in their service, Western agreed to let other residential haulers utilize the site.

While commercial organics collection is not mandated in any area of Boulder County, Western has been working to build a commercial organics collection business and has restricted their organics site to accepting only the commercial materials they collect.

Western recently sent a letter to all of the haulers delivering ostensibly residential materials to the site stating that they would not accept their residential material if it contained material from commercial businesses or from municipalities that were bidding for one hauler.

CURRENT STATUS OF ORGANIC PROGRAMS IN BOULDER COUNTY:

Boulder County has a population of 310,000 people, approximately 90,822 single family homes, 37,276 multi-family dwelling units and 14,119 business establishments. (See Attachment 1.)

RESIDENTIAL SERVICES:

Currently 47,745 single family homes, or 53% of the total single family homes, are in areas where curbside organics collection programs are required by ordinance. (See Attachment 2, Table D)

COMMERCIAL SERVICES INCLUDING MULTI-FAMILY HOUSING:

There are no areas within Boulder County where organics collection is required for commercial or multi-family buildings. Western Disposal and Eco-Cycle, Inc. both offer voluntary organics collection from businesses and multi-family buildings throughout the county. Attachment 1, Table B indicates that there are approximately 14,119 business establishments in Boulder County including 824 locations serving food and 3,533 multi-family residential buildings in the County.

Of the estimated 402 locations serving food in the City of Boulder, Western is serving 52 of them and unknown how many of them are being served by Eco-Cycle, Inc. Of the estimated 1,785 multi-family buildings in the City of Boulder, 92 are being served by Western Disposal. It is unknown how many of the multi-family buildings are being served by Eco-Cycle, Inc. While it is unknown how many food establishments and multi-family units are being served by Eco-Cycle, Inc. the volume is not considered to be significant.

DROP-OFF FACILITIES:

In addition to the curbside and business collection programs, the city of Boulder and Boulder County sponsor a yard-waste and wood-waste drop-off program at Western Disposal's facility at 5880 Butte Mill Road in the city of Boulder. Those programs serve both residential and commercial customers. The material from these drop-off sites is processed into yard-waste mulch and is not addressed in this report. In order for this material to be converted to compost a high nitrogen additive would need to be added – most probably manure or sewage sludge. Western Disposal's Organics Processing Facility is not permitted to accept manures or sewage sludge and likely never would be due to its urban setting.

Additionally, Western has a Food-Waste drop-off dumpster co-located with the yard-waste drop-off site where residential and commercial customers can drop off food waste for composting. That material is used in the composting process.

PROCESSING OF MATERIALS:

The materials collected at curbside, collected from businesses or dropped off under City of Boulder and Boulder County programs are processed at the site on 63rd Street.

There are three products produced at Western's organics processing facility:

Compost - which is made from the materials collected at curbside and food-waste collected from businesses. In 2013 Western produced approximately 20,000 yards of compost.

Ground Yard Waste Mulch – which is made from organics dropped off under the city of Boulder and Boulder County programs. In 2013 Western produced approximately 31,500 yards of ground mulch.

Ground Wood – which is made from the dimensional wood-waste dropped off under the city of Boulder and Boulder County programs. In 2013 Western produced approximately 7,650 yards of ground wood.

POTENTIAL VOLUME TO BE GENERATED FOR COMPOSTING IN BOULDER COUNTY:

Single-Family Residential: The best available statistics regarding volumes coming from existing residential programs is the data Western Disposal reports to local government each year. Table C on Attachment 2

summarizes those statistics. The residential statistics reinforce each other with both the City of Boulder and the City of Louisville having almost identical generation rates and the one suburban area, Boulder County South, producing considerably more – as one would expect. Table E on Attachment 2 indicates that if all of the single family residences in Boulder County (excluding the Mountain residences) were covered by organics collection ordinances, there could be 19,190 tons of material to be composted per year.

Commercial: The volume of food-waste and other organics that can be collected from the commercial businesses, offices and multi-family buildings is unknown at this time. However, from experience and industry literature we know that most of the organic material to be collected from these sources is food-waste which is 70% water, therefore we do not expect a significant impact from commercial and multi-family programs.

WESTERN ORGANICS PROCESSING CAPACITY:

MULCH AND GROUND WOOD PRODUCTION:

The grinding of yard-waste and wood-waste to make mulch and ground wood products is <u>not a regulated activity</u> in Colorado and can be done anywhere that zoning doesn't prohibit it. Western Disposal has vacant land adjacent to its permitted compost facility where the stockpiling of unground materials, the grinding of materials and the storage of ground materials can be accommodated without any permitting process. For that reason, this report does not address materials not bound for compost production.

COMPOST PRODUCTION LICENSING REQUIREMENTS:

In order for a non-agricultural entity to produce compost in Colorado, application must be made to the Colorado Department of Public Health and the Environment. The application process is long, complicated and expensive. At the end of the permitting process, if the applicant is successful and if the host community agrees to do so, a Certificate of Designation is issued for the site. Western Disposal has such a Certificate of Designation (CD) approved by the State Department of Public Health and the Environment and issued by the City of Boulder.

Certificates of Designation are very specific about the materials that can be accepted for composting at a designated site. Western Disposal's current permit only allows vegetative wastes to be processed. No manures or sewage sludge can be accepted for processing at the site. That is a limitation upon the productivity of the site.

COMPOSTING PROCESS FACTORS:

The composing process is a natural one that relies upon bacteria to digest organic waste and turn it into compost which can be used to amend soil to increase its ability to breathe and hold water. The process depends upon a balance of carbon (which comes from woody materials) and from nitrogen (which comes from the green parts of plants, food waste and from manures). The speed at which organic material is converted to compost is dependent (within limits) upon the amount of nitrogen available in the process. The material Western collects at curbside from residential customers and from the commercial organic routes gets nitrogen to feed the composting process from the food waste and green plant materials in the

mix. While the food waste and green materials in the mix provide nitrogen, the nitrogen ratio is not optimum and more nitrogen rich feed-stocks would speed up the composting process.

WESTERN'S COMPOST PROCESSING CAPACITY:

Attachment 3 analyzes current and projected capacity of the Organics Processing Facility.

Western currently has lined 6.41 acres of the 10.73 acres available for composting with a liner so that compost can be made upon it. In 2013, Western processes 9,454 tons of material into compost on that pad. The area with pad is not being used as intensively as it could be because there is more pad space available than there is material to fill it. Western estimates that it could process an additional 5,046 tons of material on if pad use was optimized. That would make the capacity of the current pad 14,500 tons of materials per year. See Attachment 6, Table I

The facility could accommodate a pad of 10.73 acres in size, which would be a 67% increase over the current pad size. That change would increase the capacity from the current 14,500 tons per year to 24,272 tons per year 25% more than would be needed if all the residences in Boulder County had curbside organics collection service.

Currently there are two production cycles per year at the site. That is, it currently takes six months for a windrow of material to complete the composting process. As noted above, the six-month time frame is the result of a less than optimum mix of carbon and nitrogen in the materials being composted. If additional nitrogen could be added to the mix, then it would be possible to reduce the six-month production time and increase the capacity of the facility.

Attachment 3, Table F shows the potential capacity of the site growing to 30,340 tons at 2.5 cycles per year, about 60% more than the maximum expected volume from residential collections in the County. We believe that if local government were to require organics collection service from all establishments that serve food, there would be sufficient additional nitrogen to achieve the two and one-half cycles per year level of operations. The 6,068 tons of additional capacity generated by increasing from 2 cycles to 2 and one-half cycles plus the unused 5,082 tons of capacity on the existing pad (for a total of 11,150 tons of capacity) would be more than enough to handle any commercial and multi-family volumes created by new ordinances.

POTENTIAL FOR ALL OF BOULDER COUNTY TO ADOPT ORGANICS COLLECTION:

It is unlikely that the maximum number of housing units addressed by this report would all be subjected to organics collection mandates. It is even less likely that all of the multi-family and businesses located within Boulder County would be subjected to mandatory organics collection.

POTENTIAL FOR COMPETING COMPOST SITES:

As the demand for residential organic collection programs grows in the Denver metropolitan areas, other compost sites will be developed that will attract some of the volumes being generated in Boulder County. As that happens, the capacity necessary to process materials at the Western site will diminish.

CONCLUSION:

The capacity of the Western Disposal compost facility has been established in Attachment 3 at 14,500 tons as currently configured, 24,272 tons if the site is expanded and at 30,340 tons if more nitrogen can be introduced into the process. The demand from residential organic programs being expanded to virtually the whole county would create a demand of only 19,190 tons. Volume derived from commercial and multi-family programs would likely not be sufficient to use the 11,150 ton potential unused capacity at the site.

Because of the demonstrated capacity of the Western Organics Processing Facility and additionally because it is unlikely that all of the single family housing units in Boulder County will be subject to mandatory organics collection, because it is unlikely that a large number of multi-family and business accounts would be subject to mandatory organics collection and because we believe competing composting facilities will develop in the area, we believe that the Western Disposal composting facility has more than sufficient capacity to handle the likely volumes of residential and commercial volumes to be composted in Boulder County.

ADDENDUM:

Western Disposal services has been making and marketing compost and other organic materials for over ten years. We can report marketing of the materials produced is the most difficult portion of the process. While composting is an organic process dependent upon the correct mixtures of oxygen, water, carbon, nitrogen and bacteria, it is a manageable process. Marketing of the materials, however, requires constant attention to the markets and the ability to adapt processes and procedures very quickly to produce what the market is requesting. It also requires a lot of flexibility in terms of pricing day-to-day.

We believe that the collection of organics at curbside and from businesses and multi-family housing structures will increase over time and the supply of materials could easily exceed the demand for the materials. That will only make the marketing of materials more challenging.

We believe that any community that requires the collection of organics must be willing to cooperate with the producer to see that the material finds an appropriate use.

ATTACHMENTS

Attachment 1

Table A – Table of Census Data for Boulder County Residential population
Table B – Table of Census Data for Boulder County Commercial population

Attachment 2

Table C – Organic Generation Rates for Western's Residential Customers
Table D – Status of Curbside Organic Collection Programs for Boulder County Residential Population.
Table E – Potential Residential Volume of Organics in Boulder County

Attachment 3

Table F – Calculation of Western Organic Facilities Potential Capacity to Process Materials

Attachment 4

Table G – Distribution of Organic Material Receipts by Month

Attachment 5

Table H – Miscellaneous Volume, Weight and Conversion Factors

Attachment 6

Table I -- Summary of Materials Collections in Boulder, Louisville and Lafayette 2009 thru 2013

Attachment 7

Table J – Calculation of Compost Pad Usage at 14,500 tons of Input per Year

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DEMOGRAPHIC INFORMATION ON BOULDER COUNTY -- RESIDENTIAL

Table A

Community	Population	Housing Units	Multi Family Unit Count	Single Family Dwelling Count
City of Boulder	101,808	43,479	20,218	23,261
Longmont	88,669	35,008	10,047	24,961
Lafayette	25,733	9,997	1,540	8,457
Louisville	19,074	7,892	1,586	6,306
Superior	12,782	4,698	1,128	3,570
Total Incorporated Communities	248,066	101,074	34,518	66,556
Boulder County Mountain *	9,116	3,974	406	3,569
Boulder County North *	3,451	1,505	154	1,351
Boulder County South *	49,415	21,545	2,199	19,346
Total Unincorporated County	61,982	27,024	2,758	24,266
Total Boulder County	310,048	128,098	37,276	90,822

DEMOGRAPHIC INFORMATION ON BOULDER COUNTY -- COMMERCIAL

Table B

Community	Population	Business Establishments	Multi-Family Buildings	Food Service Establishments
City of Boulder	101,808	5,569	1,785	402
Longmont	88,669	3,023	1,176	183
Lafayette	25,733	1,015	82	56
Louisville	19,074	900	106	51
Superior	12,782	396	128	24
Total Incorporated Communities	248,066	10,903	3,277	716
Boulder County Mountain *	9,116	473	38	16
Boulder County North *	3,451	179	14	6
Boulder County South *	49,415	2,564	204	86
Total Unincorporated County	61,982	3,216	256	108
Total Boulder County	310,048	14,119	3,533	824

* The designation of Boulder County North, South and Mountain is one assigned by Western Disposal and Boulder County. There are no statistics for the individual areas, just for the unincorporated areas as a whole. They have been divided based upon Western's division of customers in the areas.

GENERATION RATES FOR WESTERN CUSTOMERS

Table C

(2013 volumes)

Community	Service Address Count	Tons Of Organics Collected	Pounds Per Service Address Per Year
Residential:			
Urban			
City of Boulder	18,469	4,035	437
City of Louisville	5,137	1,126	438
Average Urban			437
Suburban			
Boulder County South	7,427	2,253	607
Average Suburban			607

RESIDENTIAL CURBSIDE COLLECTION PROGRAM STATUS

Table D

Community	Population	Single Family Homes	Currently Have Curbside Organic Collections	Likely to Adopt Organic Collections Soon	Likely to Adopt Organics Collection in 5 to 10 Years	Unlikely to Adopt Organics Collection
City of Boulder	101,808	23,261	23,261			-
Longmont	88,669	24,961		24,961		
Lafayette	25,733	8,457		5,434	3,023	-
Louisville	19,074	6,306	5,138		1,168	-
Superior	12,782	3,570			3,570	-
Total Incorporated Communities	248,066	66,556	28,399	30,395	7,762	-
Boulder County Mountain *	3,099	3,569				3,569
Boulder County North *	49,586	1,351		1,351		
Boulder County South *	9,297	19,346	19,346			
Total Unincorporated County	61,982	24,266	19,346	1,351	-	3,569
Total Boulder County	310,048	90,822	47,745	31,746	7,762	3,569
		100.0%	52.6%	35.0%	8.5%	3.9%

* The designation of Boulder County North, South and Mountain is one assigned by Western Disposal and Boulder County. There are no statistics for the individual areas, just for the unincorporated areas as a whole. They have been divided based upon Western's division of customers in the areas.

POTENTIAL VOLUMES

Table E

Sources	Dwellings Covered	Annual Pounds of Material Per Dwelling	Projected Annual Tons
Existing Programs			
City of Boulder	23,261	437	5,086
City of Louisville	5,138	437	1,123
Boulder County South	19,346	437	4,230
	47,745		10,439
Potential Programs			
City of Longmont	24,961	437	5,457
Balance of City of Louisville	1,168	437	255
City of Lafayette (City Program)	5,434	437	1,188
Balance of City of Lafayette	3,023	437	661
Superior	3,570	437	781
Boulder County North	1,351	607	410
	39,507		8,751
Total Potential Tons	87,252		19,190

Table F

COMPOST YARD CAPACITY

Compost Yard Physical Characteristics		
Area Permitted for Compost Production	13.98	Acres
Area Occupied by Entrance Road	3.25	Acres
Net Compost Yard Area	10.73	Acres
Area with Compacted Clay Liner	6.41	Acres
Area Suitable for Additional Liner	4.32	Acres
Per Cent Increase in Pad Area Possible	67%	

Existing Compost Yard Capacity Per Year (2 Cycles Per Year)	2013 Actual		Capacity	
Tons Entering Compost Process:				
Curbside Collections	7,548	Tons	12594.0	Tons
Commercial Organics	1,906	Tons	1906.0	Tons
	9,454	Tons	14,500	Tons
Grinding Conversion to Yards	9		9	
Ground Yards Entering Compost	85,086	Yards	130,500	Yards
Compost Conversion Factor	35%		35%	
InProcess Compost Yards	29,780	Yards	45,675	Yards
Compost Shrink Factor	67%		67%	
Finished Compost Yards	19,953		30,602	
Expanded Compost Yard Capacity				
Tons Entering Process Currently	9,454	Tons	14,500	Tons
Increase Factor	67%		67%	
Expanded Capacity	15,825	Tons	24,272	Tons

Potential Compost Yard Capacity Increase By Adding Nitrogen				
Assuming the Entire Permitted Site Was Lined for Production:				
Capacity with Current Mix Would Be	15,825	T/P/Y	24,272	T/P/Y
If turns per year increased To:				
2.5 Cycles Per Year	19,782	T/P/Y	30,340	T/P/Y

Table G

DISTRIBUTION OF ORGANIC RECEIPTS BY MONTH

Month	All Receipts		Compostable Portion	
	Tons Received	Percent of Total	Compostable Tons	Percent Compostable
January	861	5%	491	5%
February	704	4%	392	4%
March	1,008	6%	455	5%
April	1,345	7%	720	8%
May	2,016	11%	1188	13%
June	1,897	11%	1063	11%
July	1,913	11%	930	10%
August	1,829	10%	918	10%
September	1,384	8%	793	8%
October	1,755	10%	948	10%
November	2,422	13%	1069	11%
December	914	5%	486	5%
	18,048	100%	9453	100%

Western Disposal Services, Inc.
25-Jun-14

Table H

REVIEW OF ORGANICS COLLECTION AND PROCESSING STATISTICS
Based Upon 2013 Data

Customers Served with Curbside Organics Collection at 12/31/2013

Area	Service Address Count	Annual Tons of Organics Collected	Average Cart Size	Annual Yards of Service	Annual Pounds of Organics Per Annual Yard of Service
Single Family Homes					
City of Boulder	18,458	4,035	47	112,599	71.7
City of Louisville	5,171	1,111	100	66,825	33.3
Boulder County South	7,427	2,253	73	69,315	65.0
	31,056	7,399		248,739	59.5
Multi-Family Collections					
City of Boulder	92	102		1,566	130.3
City of Louisville					
Boulder County South	4	9		156	115.4
	96	111		1,722	128.9
Industrial - Commercial					
City of Boulder	201	1,589		22,487	141.3
City of Louisville		110		1,563	140.8
City of Lafayette		8		100	160.0
Boulder County South	24	133		2,115	125.8
Town of Superior	1	8		360	44.4
Town of Lyons		19		221	171.9
Weld County		51		210	485.7
City of Broomfield		61		736	165.8
City of Longmont		54		5,569	19.4
	226	2,033		33,361	121.9
TOTAL ALL AREAS	31,378	9,543		283,822	67.2
LOST IN TRANSPORT		(89)			
	31,378	9,454	-	283,822	67.2

Western Disposal Services, Inc.
25-Jun-14

REVIEW OF ORGANICS COLLECTION AND PROCESSING STATISTICS
Based Upon 2013 Data

Customers Served with Curbside Organics Collection at 12/31/2013

Area	Service Address Count	Annual Tons of Organics Collected	Average Cart Size	Annual Yards of Service	Annual Pounds of Organics Per Annual Yard of Service
Single Family Homes					
City of Boulder	15,458	4,035	47	112,559	71.7
City of Louisville	5,171	1,111	100	66,825	33.3
Boulder County South	7,427	2,253	73	69,315	65.0
	31,056	7,399		248,739	59.5
Multi-Family Collections					
City of Boulder	92	102		1,566	130.3
City of Louisville					
Boulder County South	4	9		156	115.4
	96	111		1,722	128.9
Industrial - Commercial					
City of Boulder	207	1,589		22,487	141.3
City of Louisville		110		1,563	140.8
City of Lafayette		8		100	160.0
Boulder County South	24	133		2,115	125.8
Town of Superior	1	8		360	44.4
Town of Lyons		19		221	171.9
Weld County		51		210	485.7
City of Broomfield		61		736	165.8
City of Longmont		54		5,569	19.4
	226	2,033		33,361	121.9
TOTAL ALL AREAS LOST IN TRANSPORT	31,378	9,543 (89)		283,822	67.2
	31,378	9,454	-	283,822	67.2

ATTACHMENT 6

Western Disposal Services, Inc.
Calculation of Maximum Boulder County
Organics Processing Need

Table I

April, 2014

SOLID WASTE GENERATION RATES Western Disposal Residential Customers

ACTUAL EXPERIENCE IN LOUISVILLE

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009 (7 Months)	2,347.6	1,170.4	743.4	4,261.4	4,871	1,652	824	523	2,999	4.53	2.26	1.43	8.22
2010	3,790.3	2,030.8	1,333.2	7,154.3	4,963	1,527	818	537	2,883	4.18	2.24	1.47	7.90
2011	3,732.9	1,931.7	1,218.0	6,882.5	4,990	1,496	774	488	2,759	4.10	2.12	1.34	7.56
2012	3,711.0	1,979.9	1,188.1	6,879.0	5,060	1,467	783	470	2,719	4.02	2.14	1.29	7.45
2013	3,752.4	1,976.3	1,125.7	6,854.4	5,138	1,461	769	438	2,668	4.00	2.11	1.20	7.31
2013 % Composition	54.7%	28.8%	16.4%	100.0%									

ACTUAL EXPERIENCE IN LAFAYETTE

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009	4,496.0	1,629.8		6,125.7	5,084	1,769	641	-	2,410	4.85	1.76	0.00	6.60
2010	4,931.6	1,726.0		6,657.6	5,103	1,933	676	-	2,609	5.30	1.85	0.00	7.15
2011	4,348.1	1,595.3		5,943.4	5,164	1,684	618	-	2,302	4.61	1.69	0.00	6.31
2012	4,508.1	1,610.2		6,118.2	5,282	1,707	610	-	2,317	4.68	1.67	0.00	6.35
2013	4,505.7	1,621.9		6,127.6	5,434	1,658	597	-	2,255	4.54	1.64	0.00	6.18
2013 % Composition	73.5%	26.5%	0.0%	100.0%									

ATTACHMENT 6

ACTUAL EXPERIENCE IN BOULDER

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009	10,083.0	7,359.0	3,121.0	20,563.0	17,690	1,140	832	353	2,325	3.12	2.28	0.97	6.37
2010	9,996.0	7,258.0	3,467.0	20,721.0	17,948	1,114	809	386	2,309	3.05	2.22	1.06	6.33
2011	9,802.0	7,104.0	4,019.0	20,925.0	18,076	1,085	786	445	2,315	2.97	2.15	1.22	6.34
2012	10,143.0	6,987.0	4,423.0	21,553.0	18,234	1,113	766	485	2,364	3.05	2.10	1.33	6.48
2013	10,640.0	7,032.0	4,065.0	21,737.0	18,469	1,152	761	440	2,354	3.16	2.09	1.21	6.45
2013 % Composition	48.9%	32.4%	18.7%	100.0%									

TOTALS AND AVERAGES

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009	16,926.6	10,159.2	3,864.4	30,950.1	27,645	1,225	735	280	2,239				6.13
2010	18,717.9	11,014.8	4,800.2	34,532.9	28,014	1,336	786	343	2,465				6.75
2011	17,883.0	10,630.9	5,237.0	33,750.9	28,230	1,267	753	371	2,391				6.55
2012	18,362.1	10,577.1	5,611.1	34,550.3	28,576	1,285	740	393	2,418				6.63
2013	18,898.1	10,630.2	5,190.7	34,719.0	29,041	1,301	732	357	2,391				6.55
2013 % Composition	54.4%	30.6%	15.0%	100.0%									

ATTACHMENT 7

Western Disposal Services, Inc.
25-Jun-14

Table J

ANALYSIS OF COMPOST PAD USAGE BY MONTH

Assumptions:

Distribution of Tons for Composting Through the Year:

January	5.2%	Annual Tons for Composting Delivered to Compost Yard	14,500
February	4.2%		
March	4.8%	Ratio of Yards Placed in Windrow to Tons Received:	3.33 to 1
April	7.6%		
May	12.6%	Weight Per Yard of Ground Material in Windrow	600 pounds
June	11.2%	Months to First Windrow Consolidation	3
July	9.8%	Months to Second Windrow Consolidation	
August	9.7%	Ratio of Finished Compost Yards to Tons Delivered	2.00 to 1
September	8.4%	Windrow Capacity	1200 yards per windrow
October	10.0%		
November	11.3%	Maximum Windrow Count	18 per cycle
December	5.2%		
	100.0%	Cycles Per Year	2

This worksheet calculates the number of windrows on the pad at any one time. The capacity of the pad is 18 windrows each containing 1,200 yards of ground material each. If the number of windrows exceeds 19, there could be a problem.

ATTACHMENT 7

Month of Receipt	Tons Received	Yards Into Windrows	Windrows Created	Cumulative Windrows Created	Windrows Combined on Pad	Cumulative Windrows Combined on Pad	Windrows Completed and Removed From Pad	Cumulative Windrows Completed and Removed from Pad	Net Windrows on the Pad
Year 1									
January	754	2,511	2.09	2.09				-	2.09
February	609	2,028	1.69	3.78				-	3.78
March	696	2,318	1.93	5.71				-	5.71
April	1,102	3,670	3.06	8.77	1.05	1.05		-	7.73
May	1,827	6,084	5.07	13.84	0.84	1.89		-	11.95
June	1,624	5,408	4.51	18.35	0.97	2.86		-	15.49
July	1,421	4,732	3.94	22.29	1.53	4.39	1.05	1.05	16.86
August	1,407	4,684	3.90	26.19	2.53	6.92	0.84	1.89	17.38
September	1,218	4,056	3.38	29.57	2.25	9.17	0.97	2.86	17.54
October	1,450	4,829	4.02	33.60	1.97	11.15	1.53	4.39	18.07
November	1,639	5,456	4.55	38.15	1.95	13.10	2.53	6.92	18.13
December	754	2,511	2.09	40.24	1.69	14.79	2.25	9.17	16.28
Total	14,500	48,285	40.24		14.79		9.17		
Year 2									
January	754	2,511	2.09	42.33	2.01	16.80	1.97	11.15	14.38
February	609	2,028	1.69	44.02	2.27	19.07	1.95	13.10	11.85
March	696	2,318	1.93	45.95	1.05	20.12	1.69	14.79	11.05
April	1,102	3,670	3.06	49.01	1.05	21.16	2.01	16.80	11.05
May	1,827	6,084	5.07	54.08	0.84	22.01	2.27	19.07	13.00
June	1,624	5,408	4.51	58.59	0.97	22.98	1.05	20.12	15.49
July	1,421	4,732	3.94	62.53	1.53	24.50	1.05	21.16	16.86
August	1,407	4,684	3.90	66.43	2.53	27.04	0.84	22.01	17.38
September	1,218	4,056	3.38	69.81	2.25	29.29	0.97	22.98	17.54
October	1,450	4,829	4.02	73.84	1.97	31.26	1.53	24.50	18.07
November	1,639	5,456	4.55	78.38	1.95	33.22	2.53	27.04	18.13
December	754	2,511	2.09	80.48	1.69	34.91	2.25	29.29	16.28
Total	14,500	48,285	40.24		20.12		20.12		

Beginning Windrow Count	0
Windrows Created During Year	40.24
Windrows Combined During Year	14.79
Completed Windrows Removed	9.17
Net Windrows on Pad	16.28

Beginning Windrow Count	16.28
Windrows Created During Year	40.24
Windrows Combined During Year	20.12
Completed Windrows Removed	20.12
Net Windrows on Pad	16.28

APPENDIX B

Organics Processing Requirements For Boulder County

The Western Disposal-produced Report: "Organics Processing Capacity Requirements for Boulder County" follows this page.

APPENDIX C

Mandatory Organics Collection Ordinances, Laws, Fact Sheets, etc.

The following documents related to Mandatory commercial food scraps collection, follow this page. Contact information for each program is contained immediately following this page.

San Francisco Mandatory Food Scraps Collection Ordinance.

Seattle Composting Requirement, Frequently Asked Questions

New York City Commercial Organics Law

Commercial Organics Ban Information Package, Metro Vancouver

CONTACTS

The following individuals can be contacted for more information on the existing (San Francisco) and planned mandatory commercial organics programs.

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FILE NO. 081404 ORDINANCE NO. 100-09

[Mandatory Recycling and Composting.]

Ordinance amending the San Francisco Environment Code by adding Chapter 19, Sections 1901 through 1912, entitled "Mandatory Recycling and Composting Ordinance," amending the San Francisco Public Works Code by amending Section 173, and amending the San Francisco Health Code by amending Sections 291, 291.1, 291.2, 291.4, 291.7, 291.11, 291.12, 291.15, 291.17, and 293.1, and by repealing current Sections 291.9 and 291.16 and adding a new Section 291.16, all to: (1) require all persons located in San Francisco to separate recyclables, compostables and landfilled trash and participate in recycling and composting programs; (2) provide enforcement mechanisms and penalties for violations; (3) ensure that all properties subscribe to refuse collection service; and (4) authorize a Department of Public Health inspection fee of $167 per hour; and making environmental findings and setting an operative date.

Note: Additions are *single-underline italics Times New Roman*; deletions are ~~*strikethrough italics Times New Roman*~~. Board amendment additions are double underlined. Board amendment deletions are ~~strikethrough normal~~.

Be it ordained by the People of the City and County of San Francisco:

Section 1. **Findings.** The Board of Supervisors finds and declares:

1. The City and County of San Francisco has a duty to protect the natural environment, the economy, and the health of its citizens.

2. The California Integrated Waste Management Act of 1989 requires cities and counties to reduce, reuse and recycle (including composting) solid waste generated in the state to the maximum extent feasible before any incineration or landfill disposal of waste, to conserve water, energy and other natural resources, and to protect the environment.

3. The California Integrated Waste Management Act of 1989 mandates that each local jurisdiction in the state divert 50% of discarded materials from landfill. Every city and county in California could face fines up to $10,000 a day for not meeting the 50% diversion goal. In 2001, the California Integrated Waste Management Board adopted a Strategic Directive statewide zero waste goal.

4. The State of California regulates hazardous waste (e.g., paint, batteries, electronics) and sets management standards, including banning landfill disposal of hazardous waste, to protect public health and the environment, and conserve natural resources. As a result, services to collect and recycle hazardous waste materials include more than 100 neighborhood drop-off sites throughout the city for various materials, a year-round facility that accepts all materials, and an appointment-based home pick-up service.

5. For each ton of municipal waste landfilled, about 71 tons of waste have been created "upstream" from the mining, manufacturing and distribution of materials in the product lifecycle, resulting in significant resource depletion, pollution and climate-changing impacts.

6. Organic or compostable waste that is buried in the anaerobic conditions of landfills creates methane gas along with the leaching of toxins. Methane gas is at least 21 times as potent as carbon dioxide in changing the planet's climate. Twenty percent of San Francisco's planned reductions in climate-changing emissions come from diverting additional solid waste from landfill.

7. The Board of Supervisors has adopted goals of 75% diversion from landfill by 2010 and zero waste to landfill or incineration by 2020. This policy includes urging greater consumer responsibility, including mandatory participation in diversion programs.

8. People who live in, work in, or visit San Francisco generate over 2 million tons of solid waste annually. While the city has an overall landfill diversion rate of 70% (as reported

to the State), most residents and businesses divert closer to 50% through recycling and composting, resulting in over 660,000 tons per year of material from San Francisco being landfilled in 2006.

9. Growth in the rate of landfill diversion in San Francisco has leveled off in recent years, with an increase of less than 1% from 2005 to 2006, and continued voluntary diversion participation alone will not likely enable the City to meet its 75% diversion goal by 2010.

10. San Francisco's agreement with the Altamont Landfill in Alameda County provides for waste disposal of up to 15 million tons. At the end of 2007, nearly 12 million tons of this contract capacity had been used, leaving about 3 million tons of capacity remaining. At the current disposal rate at the Altamont Landfill there are about 5 years left (until 2013) on the City's landfill contract. Increased diversion will extend the life of this landfill contract with its favorable low disposal costs, while any new landfill contract will likely increase disposal costs and subsequently trash collection rates in San Francisco.

11. After years of voluntary, convenient, nation-leading, award-winning programs and outreach and financial incentives, a comprehensive study found that 36% of what San Francisco sends to landfills is compostable (primarily food scraps) and 31% is recyclable (mostly paper), and this breakdown essentially applies to all sectors (residential, commercial and City government).

12. There are facilities in the City and surrounding areas that can effectively reuse, recycle, compost or otherwise process and market most materials discarded in San Francisco and thereby divert such materials from landfill while creating jobs.

13. Many state and local governments have mandated recycling of various materials and composting of yard trimmings, or conversely banned them from landfill, resulting in significant increases in waste diversion.

14. State legislation that would have mandated owners or managers of multifamily buildings to provide recycling collection for their tenants was vetoed by the Governor because, as he stated, local jurisdictions already have the authority to mandate this participation locally.

15. The Board of Supervisors passed a mandatory Construction and Demolition Debris Recovery Ordinance (No. 27-06), effective July 1, 2006, which helped divert more than 26,000 additional tons from landfill in its first year of implementation.

16. In keeping with the Precautionary Principle, codified in Chapter 1 of the Environment Code, this Chapter requires diversion of recyclable or compostable materials from landfill for beneficial use as a deterrent to unsafe and wasteful practices. In this way, the City will create and maintain a healthy, viable environment for current and future generations, and will become a model of sustainability.

Section 2. The San Francisco Environment Code is hereby amended by adding Chapter 19~~18~~, Sections 1901~~1801~~ through 1912~~1812~~, to read as follows:

SEC.* 1901~~1801~~. *TITLE.

This Chapter shall be entitled "Mandatory Recycling and Composting".

SEC.* 1902~~1802~~. *DEFINITIONS.

For the purposes of this Chapter, the following words have the following meanings:

(a) "Adequate Refuse Collection Service" means that a dwelling or commercial property is serviced by a Collector for recyclables, compostables, and trash, and that the level of service is sufficient to contain the refuse generated at that dwelling or commercial property.

(b) "City" means the City and County of San Francisco.

(c) "Collection" means taking physical possession of and removing discarded material from the place of generation for subsequent off-site management of that material.

(d) "Collection Container" means the receptacle that is provided, designated and serviced by the collector for the collection of recyclables, compostables or trash.

(e) "Collector" means a person, firm or corporation licensed and permitted to collect refuse by the Director of Public Health pursuant to the provisions of the Refuse Collection and Disposal Ordinance adopted November 8, 1932, as amended, and any other collectors of discarded material not excluded under that ordinance.

(f) "Commercial Property" means a parcel or any portion of real property where refuse is generated that is not a dwelling, including schools, institutions, and City properties.

(g) "Compostable" means any material that can be broken down into, or otherwise become part of, usable compost (e.g., soil-conditioning material) in a safe and timely manner as accepted in San Francisco's compostables collection program, such as food scraps, soiled paper and plant trimmings. Compostable materials can also include disposable plastic food service ware and bags if labeled "Compostable", in accordance with the Food Service Waste Reduction Ordinance (No. 295-06) and Department of the Environment regulations for easy identification, meeting the ASTM Standard Specification (D6400) for compostable plastics, and consistent with State labeling law (California Public Resources Code Section 42359) that any plastic bag or food container labeled "Compostable" must meet the ASTM Standard Specification for compostable plastics.

(h) "Construction and Demolition Debris" means building materials generated from construction and demolition activities including, but not limited to, fully-cured asphalt, concrete, brick, rock, soil, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, fixtures, plastic pipe, metals, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction, deconstruction, demolition or land developments.

Hazardous waste, as defined in California Health and Safety Code Sections 25100 et seq., is not construction and demolition debris for purposes of this Chapter.

(i) "Customer" means any person being served food from a food vendor or event.

(j) "Department" means the San Francisco Department of the Environment.

(k) "Designated" means clearly labeled and color-coded for a material type, such as labeled blue receptacles for recyclables, green for compostables and black for trash.

(l) "Director" means the Director of the Department of the Environment or his or her designee.

(m) "Disposable Food Service Ware" means all containers, bowls, plates, trays, carton, cups, lids, straws, forks, spoons, knives, napkins and other items that are designed for one-time use for serving food.

(n) "Dwelling" means a residence, flat, apartment, or other facility, used for housing one or more persons.

(o) "Event" means any function that serves food and is permitted through any agency, including, but not limited to, the Department of Parking and Traffic, the Recreation and Park Department, the Port of San Francisco or, to the extent permitted by law, the National Park Service.

(p) "Food Vendor" means any and all sales outlets, stores, shops, vehicles or other places of business located or operating in the city that operate primarily to sell or convey foods or beverages to consumers, and stores that sell food or beverages in combination with a gasoline station.

(q) "Janitor" means the person who is hired by owners and managers of commercial properties and their contractors to process refuse on-site before it leaves the premises.

(~~p~~q) *"Manager" means the authorized agent for the owner of a building, structure or property, who is responsible for the day-to-day operation of said building, structure or property.*

(~~q~~r) *"Multifamily Property" means a property that includes multiple residential households and has a single account with collector(s) for recyclables, compostables and trash.*

(ts) "Person" means a natural person (including a resident, employee, or visitor), a firm, business concern, association, partnership, corporation or governmental entity, including the City and County of San Francisco and its departments, boards and commissions, and successors or assigns.

(ut) "Public Trash Container" means any receptacle installed by a public agency at a sidewalk, park or other public area and that is not under the control, unless otherwise required by this Chapter, of a multifamily or commercial property, food vendor or event manager.

(vu) "Recyclable" means any material that can be sorted and reconstituted, for the purpose of using the altered form in the manufacture of a new product, as accepted in San Francisco's recycling collection program, such as paper, bottles and cans. Recycling does not include burning, incinerating, converting, or otherwise thermally destroying solid waste.

(wv) "Refuse" has the meaning set forth in the Refuse Collection and Disposal Ordinance adopted November 8, 1932, as amended, and includes recyclables, compostables, and trash, but not construction and demolition debris or hazardous waste, all as defined in this Chapter.

(xw) "Source Separate" means to divide refuse at the place of discard generation, prior to collection, into separate containers that are designated for recyclables, compostables or trash.

(yx) "Transfer Station" means a facility that is permitted under Health Code Section 294 to receive discarded materials and transport them to a landfill for disposal.

(zy) "Trash" means material that is designated for landfill disposal by the collector and does not include either recyclable or compostable materials. The term "trash" does not include hazardous waste, as defined in California Health and Safety Code Sections 25100 et seq., or construction and demolition debris as defined in this Chapter.

SEC.** 19031803. **SOURCE SEPARATION OF REFUSE REQUIRED.

All persons in San Francisco must source separate their refuse into recyclables, compostables and trash, and place each type of refuse in a separate container designated for disposal of that type of refuse. No person may mix recyclables, compostables or trash, or deposit refuse of one type in a collection container designated for another type of refuse, except as otherwise provided in this Chapter.

SEC. 19041~~804~~. ***REQUIREMENTS FOR OWNERS OR MANAGERS OF MULTIFAMILY AND COMMERCIAL PROPERTIES.***

(a) Owners or managers of multifamily or commercial properties must provide Adequate Refuse Collection Service to the tenants, employees, contractors, and customers of the properties.

(b) Owners or managers of multifamily or commercial properties must supply appropriate containers, placed in an appropriate location, to make source separation of refuse convenient for the tenants, employees, contractors, and customers of the properties. The containers must:

(1) Be of appropriate number and size in light of the recyclable, compostable, and trash quantities reasonably anticipated to be generated at the location;

(2) Bear appropriate signage and be color coded to identify the type of refuse to be contained—blue for recyclables, green for compostables, and black for trash—and meet any additional design criteria established by the Department by regulation; and,

(3) Be placed as close together as possible, to provide equally convenient access to users.

(c) Owners or managers of multifamily or commercial properties must provide information and/or training for new tenants, employees and contractors, including janitors~~custodians~~*, on how to source separate recyclables, compostables and trash, and must re-educate existing tenants, employees and contractors at least once a year.*

(d) Owners and managers of commercial properties or their contractors will work with on-site janitors to create effective source separation programs as a means of achieving compliance, meeting citywide diversion goals, and achieving the diversion or disposal rate reported annually to the State of California.

(e~~d~~) New construction or expansion of multifamily or commercial properties may be subject to Department of Building Inspection requirements, such as Administrative Bulletin 088 and Building Code Chapter 13, Section 1304C, to provide adequate space for recyclables and compostables, which includes requiring any chute systems to keep compostables, recyclables and trash separate.

SEC.* 1905~~1805~~. *REQUIREMENTS FOR OWNERS OR MANAGERS OF FOOD VENDORS AND EVENTS.

(a) Owners or managers of food vendors and events must provide Adequate Refuse Collection Service to their employees, contractors and customers.

(b) Owners or managers of food vendors and events must supply appropriate containers, placed in appropriate locations, to make source separation of recyclables, compostables, and trash convenient for the employees, contractors, and customers of the food vendors and events. The containers must:

(1) Be of appropriate number and size in light of the recyclable, compostable, and trash quantities reasonably anticipated to be generated at the location;

(2) Bear appropriate signage and be color coded to identify the type of refuse to be deposited—blue for recyclables, green for compostables, and black for trash—and meet any additional design criteria established by the Department by regulation; and,

(3) Be placed as close together as possible to provide equally convenient access to users.

(c) Owners or managers of food vendors and events must provide information and/or training for new tenants, employees, and contractors, including janitors~~custodians~~*, on how to source separate recyclables, compostables, and trash, and must re-educate existing tenants, employees, and contractors at least once a year.*

(d) Food vendors that provide disposable food ware must have at least one container each for recyclables, compostables and trash for use by customers and visitors, placed inside near a main exit, unless that food vendor does not use disposable food ware for on-site consumption and serves minimal to go orders per day, but not including any to go orders delivered to residents by a delivery service. *Food vendors meeting the requirements of this Section are exempt from the requirement of Public Works Code Section 173 to place "a litter receptacle outside each exit." Multiple food vendors that provide disposable food service ware and share a common eating area may share an appropriate number, size, and placement of containers for recyclables, compostables and trash for convenient use by customers or visitors.*

(e) Food vendors and events must not put any fats, oils or grease in trash collection containers.

SEC. 1906~~1806~~. ***REQUIREMENTS FOR REFUSE COLLECTORS, TRANSFER STATIONS, AND PROCESSING FACILITIES.***

(a) All collectors must appropriately designate the collection containers they provide to customers for source separation of recyclables, compostables and trash. The containers must:

(1) Bear appropriate signage that allows users to clearly and easily identify which containers to use for recyclables, compostables or trash;

(2) Be color-coded—blue for recyclables, green for compostables and black for trash; and,

(3) Bear the name of the collector to whom the container belongs.

(b) (1) If a collector finds materials that are not the correct type as designated for that container, such as recyclables or compostables in a trash container, or trash in a compostables or recyclables container, the collector then must leave a tag on the container identifying the incorrect materials.

(2) If the collector continues to find incorrect materials in a collection container after the collector has left a previous tag for that customer and that type of container, the collector must leave another tag on the container identifying the incorrect materials and send a written notice to the person who subscribes for that collection service.

(3) If the collector continues to find incorrect materials in a collection container after the collector has already left two or more tags for that customer and that type of container, the collector may refuse to empty the container, subject to California Code of Regulations Title 14, Section 17331, or as determined by the Director of Public Health or his or her designee. If the container is not emptied, the collector must leave a tag and send a written notice to the person who subscribes for the collection service, identifying the incorrect materials and describing what action must be taken for the materials to be collected; provided, however, that a collector may not refuse on this basis to empty containers from multifamily or commercial properties with multiple tenants and joint account collection service.

(4) The collector shall, upon request, provide to the Director a list of the names and addresses of those persons who have received tags or notices or whose containers have not been emptied due to non-compliance with this Chapter, or copies of the tags or notices issued by the collector. The collector shall also provide to the Director, upon request, a list of the names, addresses, and service levels of the collector's customers and any additional information required by the Director.

(c) Within 90 days of the end of each calendar year, each collector must submit to the Department, on a form specified by the Director, an annual report of all tons collected by material type and to whom the material was sent.

(d) No person may deliver recyclables or compostables, including those mixed with trash, to a landfill or transfer station for the purpose of having those materials landfilled, except as follows:

(1) A collector may drop off recyclables or compostables at the San Francisco transfer station for landfill if the transfer station has agreed to provide to the Director, upon request, audits of collection vehicles for a specified period going forward in time. The transfer station's audit shall report the quantity of recyclables or compostables, stated as estimated tons per load or as a percentage of the loads, deposited at the transfer station by collection vehicles specifically identified in the request over a reasonable period of time occurring after the request.

(2) A processing facility that sorts and reconstitutes recyclables for the purpose of using the altered form in the manufacture of a new product or turns compostables into usable and marketable compost (e.g., soil-conditioning) material may send to a landfill a minor portion of those materials that constitutes unmarketable processing residuals, if the processing facility provides to the Director, upon request, audits of specific collection vehicles for a specific period going forward in time, of the quantities of recyclables or compostables sent to the landfill from the processing facility.

(e) No person may deliver trash from the city, including trash mixed with recyclables or compostables, to a processing facility, unless the processing facility has agreed to provide to the Director, upon request, audits of collection vehicles for a specified period going forward in time. The processing facility's audit shall report the quantity of trash, stated as estimated tons per load or as a percentage of the loads, deposited at the processing facility by collection vehicles specifically identified in the request over a reasonable period of time occurring after the request.

SEC.* 1907~~1807~~. *REQUIREMENT TO SUBSCRIBE TO REFUSE COLLECTION SERVICE.

Owners of residential, multifamily or commercial properties, events or other facilities that generate refuse must subscribe to and pay for Adequate Refuse Collection Service, and provide an accessible location for sufficient levels of service with collector(s) for source separated recyclables, compostables and trash, except as otherwise provided in this Chapter. Owners of such properties are responsible for any failure to subscribe to or pay for sufficient levels of refuse collection service. The Director of Public Health, pursuant to Health Code Article 6, as amended, shall enforce requirements for adequate and continuous refuse collections services.

SEC.* 1908~~1808~~. *ENFORCEMENT.

(a) The Director and his or her designee may administer all provisions of this Chapter and enforce those provisions by any lawful means available for such purpose, except as otherwise provided in this Chapter.

(b) To the extent permitted by law, the Director may inspect any collection container, collection vehicle load, or receiving facility for collected trash, recyclables or compostables.

(c) Except as otherwise provided in this Chapter, the Director of the Department of Public Health or his or her designee may impose administrative fines for violations of those provisions of this Chapter, or of rules and regulations adopted pursuant to this Chapter, that pertain to the jurisdiction of the Department of Public Health.

(d) Except as otherwise provided in this Chapter, the Director of Public Works or his or her designee may impose administrative fines for violations of those provisions of this Chapter, or of any rule or regulation adopted pursuant to this Chapter, that pertain to the jurisdiction of the Department of Public Works.

(e) San Francisco Administrative Code Chapter 100, "Procedures Governing the Imposition of Administrative Fines," as amended, is hereby incorporated in its entirety and shall govern the imposition, enforcement, collection, and review of administrative citations issued to enforce this Chapter and any rule or regulation adopted pursuant to this Chapter; provided, however, that:

(1) The Director of Public Works or the Director of Public Health may adopt regulations providing for lesser penalty amounts than those provided in Administrative Code Section 100.5;

(2) The fine for any violation at a dwelling or commercial property that generates less than one cubic yard of refuse per week may not initially exceed $100; and,

(3) No person who is the owner, tenant, manager, employee, contractor, or visitor of a multifamily or of a multi-tenant commercial property shall be subject to fines or penalties for violation of Section 1903~~1803~~ (but will remain subject to such enforcement for violations of section 1904 and other sections of the Ordinance)*, unless and until the Director of the Department of the Environment has adopted specific regulations setting out the liability of such persons. The Director shall not adopt such regulations prior to July 1, 2011.*

(f) The City shall use administrative penalties collected under this Chapter, including recovery of enforcement costs, to fund implementation and enforcement of this Chapter. Remedies under this Chapter are in addition to and do not supersede or limit any and all other remedies, civil or criminal.

SEC.* 1909~~1809~~. *FORMS, REGULATIONS AND GUIDELINES.

(a) After public notice and a public hearing, the Director may adopt necessary forms, regulations, and guidelines to implement this Chapter.

(b) The Department shall provide assistance regarding compliance with this Chapter.

(c) The Department shall provide information on its website regarding what materials are accepted as recyclables, compostables, and trash under this Chapter.

SEC.* 1910~~1810~~. *EXCEPTIONS

(a) A property owner or manager may seek a waiver from the Director of all or portions of this Chapter, if the applicant submits documentation, using a form specified by the Director and including a signed affidavit under penalty of perjury, that shows that the property does not have adequate storage space for containers for recyclables, compostables or trash. In cases where after on-site verification space limitations are determined to exist, the Director shall evaluate the feasibility of sharing containers for recyclables, compostables or trash with contiguous properties, and, where feasible, requiring container sharing in lieu of providing a waiver.

(b) Except as otherwise required by the Director, a collector may drop-off compostables or recyclables at the San Francisco transfer station that have been collected from public trash containers. The Director may require public trash containers to have a recyclables receptacle attached.

SEC.* 1911~~1811~~. *DISCLAIMER OF LIABILITY.

The degree of protection required by this Chapter is considered to be reasonable for regulatory purposes. The standards set forth in this Chapter are minimal standards and do not imply that compliance will ensure safe handling of recyclables, compostables or trash. This Chapter shall not create liability on the part of the City, or any of its officers or employees for any damages that result from reliance on this Chapter or any administrative decision lawfully made in accordance with this Chapter. All persons handling discarded materials within the city should be and are advised to conduct their own inquiry as to the handling of such materials. In undertaking the implementation of this Chapter, the City is assuming an undertaking only to promote the general welfare. It is not

assuming, nor is it imposing on its officer and employees, an obligation for breach of which it is liable in money damages to any person who claims that such breach proximately caused injury.

SEC.* 1912~~1812~~. *DUTIES ARE DISCRETIONARY.

Subject to the limitations of due process and applicable requirements of State or federal laws, and notwithstanding any other provisions of this Code, whenever the words "shall" or "must" are used in establishing a responsibility or duty of the City, its elected or appointed officers, employees or agents, it is the legislative intent that such words establish a discretionary responsibility or duty requiring the exercise of judgment and discretion.

Section 3. The San Francisco Public Works Code is hereby amended by amending Section 173, to read as follows:

SEC. 173. PLACEMENT AND MAINTENANCE OF LITTER RECEPTACLES.

(a) It is the intent of this Section to ensure that public areas are kept clean and free from litter.

(b) Any person, firm or corporation operating a grocery store, a liquor store or an establishment selling food or beverages for consumption off the premises shall place and maintain a litter receptacle outside of each exit from said premises for the use of the patrons thereof during business hours*; provided, however, that a person, firm, or corporation is not required under this Section to place and maintain a litter receptacle outside each exit if that person, firm, or corporation places and maintains a set of three containers for recyclables, compostables and trash for use by customers and visitors as specified in Chapter* 19 ~~18~~ *of the Environment Code.*

(c) Any person, firm, corporation, or property owner operating a place of employment shall provide and maintain adjacent to the place of employment sufficient ashtrays or other

receptacles for the disposal of cigarettes, cigars, and other similar combustible products used by employees and patrons who smoke. The Director of Public Works shall authorize the placement of such ashtrays or other receptacles in the public right-of-way where necessary.

(d) The design, capacity, location, and number of ashtrays and receptacles shall be prescribed by the Director of Public Works. Decals may be placed upon said receptacles subject to the limitations set forth in Section 171 of this Article.

(e) The receptacle shall be emptied when full and at the close of business each day and the contents thereof shall be stored or set out for collection in the same manner as other refuse generated in the operation of the business. Each receptacle shall be maintained in a clean and sanitary condition.

(f) Violation of this Section shall constitute an infraction and shall be punishable by a fine of not less than $80 nor more than $100; for a second offense by a fine not less than $150 nor more than $200; and for each additional offense by a fine not less than $250 nor more than $500. In the alternative, an administrative penalty not to exceed $250 may be assessed for each violation. Such penalty shall be assessed, enforced and collected in accordance with Section 39-1 of the Police Code.

Section 4. The San Francisco Health Code is hereby amended, by amending Sections 291, 291.1, 291.2, 291.4, 291.7, 291.11, 291.12, 291.15, and 291.17, and by repealing the current Section 291.16 and adding a new Section 291.16, to read as follows:

SEC. 291. OWNER RESPONSIBILITY FOR MAINTENANCE OF REFUSE COLLECTION SERVICE TO DWELLINGS *AND COMMERCIAL PROPERTIES*; DEFINITIONS.

Unless the context otherwise specifies or requires, the terms defined in this Section shall, for all purposes of this Article, have the meanings herein specified, the following

definitions to be equally applicable to both the singular and plural forms of any of the terms herein defined:

(a) The term "City" means the City and County of San Francisco;

(b) The term "Collector" means a refuse collector duly licensed pursuant to the provisions of the Initiative Ordinance;

(c) The term "Commercial Property" means a parcel or any portion of real property where Refuse is generated that is not a Dwelling, including schools, institutions, and City properties.

(d) ~~(c)~~ The term "Director" means the Director of Health of the City, or his authorized agents;

(e) ~~(d)~~ The term "dwelling" means a residence, flat, apartment, or other facility, used for housing one or more persons in the City and County of San Francisco;

(f) ~~(e)~~ The term "Initiative Ordinance" means the Initiative Refuse Collection and Disposal Ordinance adopted November 8, 1932, as amended; and

(g) ~~(f)~~ The term "Owner" when used with reference to a dwelling shall mean, and shall conclusively be deemed to be, the legal Owner of the dwelling *and when used in reference to a commercial property shall mean, and shall conclusively be deemed to be, the legal Owner of the commercial property*.

SEC. 291.1. OWNER RESPONSIBLE FOR REFUSE COLLECTION SERVICE.

The owner of any dwelling *or commercial property* shall subscribe to and pay for *adequate* refuse collection service rendered to such dwelling *or commercial property* by a collector and shall provide at a location accessible to the collector *for* an adequate container or containers for deposit of refuse of such capacity as the Director of Public Works may prescribe. The necessity for and type of refuse collection service required and the rates charged therefor

shall be governed by the Initiative Ordinance, *Chapter* 19~~18~~ *of the Environment Code, and any applicable rules and regulations adopted by the Director of Public Health*.

Nothing in this Section is intended to prevent an arrangement or the continuance of an existing arrangement, under which payments for refuse collection service are made by a tenant or tenants, or any agent, in behalf of the Owner. However, any such arrangement will not affect the Owner's obligation to the City.

SEC. 291.2. FAILURE TO INITIATE SERVICE, *MAINTAIN ADEQUATE SERVICE,* OR TO PROVIDE SUFFICIENT REFUSE CONTAINERS.

When an owner fails to initiate adequate refuse collection service within 15 days of occupancy of a Dwelling *or commercial property* by any person, *including a business entity, or fails to maintain adequate refuse collection service*, the Director will *evaluate the need for service and what would constitute adequate service in this context, and, where appropriate,* give the Owner *an order from the Director* ~~*notification*~~ that such service *or additional service* is required. *In determining the need for service or additional service, the Director may make use of any relevant information or evidence, including information provided by the Collector regarding the existing level of service.* A copy of *the Director's order* ~~*said notice*~~ will be sent to the Collector. If the Owner does not arrange with the Collector for service within 15 days from the date of mailing of the *order, or request within that time a hearing before the Director to dispute a service or change of service requirement* ~~*notice*~~, then the Collector shall, *consistent with the Director's order,* initiate, *maintain, or increase* ~~*and continue*~~ refuse collection service for said dwelling *or commercial property*.

When in the judgment of the Director additional refuse containers are required, they shall be provided by the Owner upon written notification from the Director.

The Director, in consultation with the Department of the Environment and after a public notice and hearing, may adopt forms, regulations, and guidelines to ensure the payment and collection of refuse services from any commercial property managers who fail to initiate or maintain sufficient refuse service, including standards and criteria for determining whether a Commercial property has provided for sufficient refuse service, or to otherwise implement and enforce Sections 291 et seq.

The Director of Public Health, or his or her designee, may impose administrative fines for violations of Sections 291.1 and 291.2, or any rules or regulations adopted by the Director to implement and enforce Sections 291 et seq. San Francisco Administrative Code Chapter 100, "Procedures Governing the Imposition of Administrative Fines," as amended, is hereby incorporated in its entirety and shall govern the imposition, enforcement, collection, and review of administrative citations issued to enforce this Chapter and any rule or regulation adopted pursuant to this Chapter; provided, however, that the Director may adopt regulations providing for lesser penalties than those provided in Administrative Code Section 100.5.

No person who is the owner, tenant, manager, employee, contractor, or visitor of a multifamily dwelling or of a multi-tenant commercial property shall be subject to fines or penalties for failure to provide adequate refuse collection service, unless and until the Director has adopted specific regulations establishing the responsibilities of such persons under this Article.

The fine for any violation at a dwelling or commercial property which generates less than one cubic yard of refuse per week may not initially exceed $100.

In addition to any administrative penalty assessed pursuant to this Article, the Director may assess the responsible Owner the reasonable enforcement costs incurred by the City, including reasonable attorneys' fees. The imposition of enforcement costs is within the discretion of the Director.

SEC. 291.4. COLLECTOR ENTITLED TO PAYMENT FOR SERVICES RENDERED.

Pursuant to the provisions of the Initiative Ordinance, the Collector shall be entitled to payment from the owner for services rendered. When the Owner has been directed to initiate service but fails to provide an adequate container or containers at an accessible location and the Collector attempts to collect refuse from the dwelling *or commercial property,* then such attempt shall be deemed the rendering of collection service for which Collector is entitled to compensation in the same manner and amount as if refuse had actually been collected. Should there be failure to make payment for any service rendered *to any dwelling* by the Collector*, or rendered to a commercial property pursuant to an order of the Director of Public Health under Section 291.2*, the means for effecting payment shall be in accordance with the procedure set forth hereunder.

SEC. 291.7. PAYMENT BY DEPARTMENT OF PUBLIC HEALTH LIEN.

Following ~~*Within 45 days following*~~ the receipt of the complaint filed in accordance with Section 291.5, the Director shall, regardless of any sale or other transfer of property following the date of receipt of such complaint, process the complaint for payment to the Collector from a continuing appropriation account so provided herein under Section 291.14, and the Owner shall be liable to the City for fees paid. The payment by the City will, upon the recording thereof in the manner herein provided, create a lien on the real property to which the service was rendered. The lien will be officially recorded in the County Recorder's files, the lien to carry and will include additional charges for administrative expenses of $50 or 10 percent of the amount owned, whichever is higher, *plus any applicable recording fees,* and interest at a rate of 1 1/2 percent per full month compounded monthly from the date of the recordation of the lien on all fees and charges due. The Owner shall be notified by the Director that the fees and charges are due to the City. In addition, the Owner shall be notified that if the fees and

charges remain unpaid, subsequent proceedings may be taken to make said fees and charges a special assessment on the real property to which said refuse collection service was rendered.

~~SEC. 291.9. DIRECTOR'S HEARING.~~

~~Prior to the report of delinquent collection services fees being submitted to the Board of Supervisors, the Director shall cause a hearing to be held as to each owner of the real property to which service was rendered. At such hearing, the Owner may make any protest or objection regarding inclusion on the list.~~

~~The Director shall fix a date, time and place of hearing and shall cause a notice, at least 10 days prior to said hearing, to be mailed to the Owners.~~

~~At the conclusion of the hearing, the Director shall issue a report of delinquent charges together with his recommendation as to any charge.~~

SEC. *291.11*. REPORTS OF DELINQUENCIES TRANSMITTED TO *THE DIRECTOR* ~~*BOARD OF SUPERVISORS*~~.

Any charges that remain unpaid by a residential property owner or a commercial property owner pursuant to an order of the Director under Section 291.2 for a period of 60 or more days after the date upon which they were billed are delinquent and may be collected in the manner set forth in this Article. A report of delinquent charges shall be transmitted to ~~*the Board of Supervisors by*~~ the Director. Upon receipt by the *Director* ~~*Board of Supervisors*~~ of the report, *he or she* ~~*it*~~ shall fix a time, date and place for hearing the report and any protests or objections thereto.

SEC. 291.12. HEARING.

The *Director* ~~*Board of Supervisors*~~ shall cause notice of the hearing to be mailed to the Owner of the real property to which the service was rendered not less than 10 days prior to the date of hearing. At the time fixed for the report, the *Director* ~~*Board of Supervisors*~~ shall hear it with any objections of the Owner liable to be assessed for delinquent accounts. The *Director* ~~*Board of Supervisors*~~ may make such revisions, corrections or modifications of the report as it may deem just and in the event that the *Director* ~~*Board of Supervisors*~~ is satisfied with correctness of the report (as submitted or as revised, corrected or modified), *the Director shall confirm the report* ~~*it shall be confirmed or rejected by resolution*~~. The decision of the *Director* ~~*Board of Supervisors*~~ on the report and on all protests or objections thereto shall be final and conclusive.

SEC. 291.15. MANNER OF GIVING NOTICES.

Any notice required to be given hereunder by the City, the Director or any Collector to an Owner shall be sufficiently given or served upon the Owner for all purposes hereunder if personally served upon the Owner or if deposited, postage prepaid, in a post office letter box addressed to the "Owner" at the official address of the Owner maintained by the Tax Collector of the City for the mailing of tax bills or, if no such address is available, to the Owner at the address of the dwelling *or commercial property*.

SEC. 291.16. INSPECTION FEE.

If the Director of Public Health causes a Dwelling or a Commercial Property to be inspected to determine whether the Owner has complied with Section 291.1, the Owner of the Dwelling or

Commercial Property shall pay an inspection fee equal to $167 per hour of Department of Public Health staff time spent during the inspection.

~~***SEC. 291.16. PENALTY.***~~

~~*Notwithstanding the provisions of Section 291.3 of this Article, any person who shall violate any of the provisions of Sections 291.1 or 291.2 of this Article shall be guilty of an infraction or a misdemeanor. If charged as an infraction, upon conviction thereof, said person shall be punished for the first offense by a fine of not less than $10 nor more than $50; and for a second and each additional offense by a fine of not less than $20 nor more than $100.*~~

~~*If charged as a misdemeanor, upon conviction thereof, said person shall be punished by imprisonment in the County Jail not exceeding one year or a fine not exceeding $1,000. The complaint charging such violation shall specify whether the violation is a misdemeanor of infraction, which decision shall be solely that of the District Attorney.*~~

SEC. 291.17. SEVERABILITY.

If any part or provisions of Sections 291 through *291.16* ~~*291.16*~~ or application thereof, to any person or circumstance is held invalid, the remainder of the Section, including the application of such part or provision to other persons or circumstances shall not be affected thereby and shall continue in full force and effect. To this end the provisions of the Sections are severable.

Section 5. The San Francisco Health Code is hereby amended by amending Section 293.1, to read as follows:

SEC. 293.1. VIOLATIONS.

It shall be unlawful for any person other than *the Collector,* an authorized City employee *for enforcement purposes,* or the *generator of recyclable materials* ~~*City's authorized curbside recycling program collectors*~~ to take, remove, move or otherwise appropriate *recyclable materials that have been placed in a container designated by a Collector for recyclables or to take, remove, move, or otherwise appropriate the container that is placed for collection* ~~*the container in which recyclable materials are placed for collection and the matters contained therein*~~. The City and its duly authorized collectors shall have the exclusive right to collect recyclable materials placed for collection in public sidewalk and street areas.

Section 6. **Environmental Findings.** On December 9, 2008, the Planning Department determined that the actions contemplated in this Ordinance are categorically exempt under the California Environmental Quality Act (California Public Resources Code sections 121000 et seq.). Said determination is on file with the Clerk of the Board of Supervisors in File No. 081404 and is incorporated herein by reference.

Section 7. **Severability.** If any part or provision of this ordinance, or the application thereof to any person or circumstance, is held invalid, the remainder of the ordinance, including the application of such part or provision to other persons or circumstances shall not be affected thereby and shall continue in full force and effect. To this end the provisions of the ordinance are severable.

Section 8. **Operative Date.** The operative date of this ordinance shall be 90 days after its effective date.

APPROVED AS TO FORM:
DENNIS J. HERRERA, City Attorney

By: Cecilia T. Mangoba
CECILIA T. MANGOBA
Deputy City Attorney

City and County of San Francisco

Tails

Ordinance

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

File Number: 081404 **Date Passed:**

Ordinance amending the San Francisco Environment Code by adding Chapter 18, Sections 1801 through 1812, entitled "Mandatory Recycling and Composting Ordinance," amending the San Francisco Public Works Code by amending Section 173, and amending the San Francisco Health Code by amending Sections 291, 291.1, 291.2, 291.4, 291.7, 291.11, 291.12, 291.15, 291.17, and 293.1, and by repealing the current Section 291.16 and adding a new Section 291.16, all to: (1) require all persons located in San Francisco to separate recyclables, compostables and landfilled trash and participate in recycling and composting programs; (2) provide enforcement mechanisms and penalties for violations; (3) ensure that all properties subscribe to refuse collection service; and (4) authorize a Department of Public Health inspection fee of $167 per hour; and making environmental findings and setting an operative date.

April 7, 2009 Board of Supervisors — SUBSTITUTED

June 9, 2009 Board of Supervisors — AMENDED, AN AMENDMENT OF THE WHOLE BEARING NEW TITLE

Ayes: 11 - Alioto-Pier, Avalos, Campos, Chiu, Chu, Daly, Dufty, Elsbernd, Mar, Maxwell, Mirkarimi

June 9, 2009 Board of Supervisors — PASSED ON FIRST READING AS AMENDED

Ayes: 9 - Alioto-Pier, Avalos, Campos, Chiu, Daly, Dufty, Mar, Maxwell, Mirkarimi
Noes: 2 - Chu, Elsbernd

June 16, 2009 Board of Supervisors — FINALLY PASSED

Ayes: 9 - Alioto-Pier, Avalos, Campos, Chiu, Daly, Dufty, Mar, Maxwell, Mirkarimi
Noes: 1 - Chu
Excused: 1 - Elsbernd

File No. 081404

I hereby certify that the foregoing Ordinance was FINALLY PASSED on June 16, 2009 by the Board of Supervisors of the City and County of San Francisco.

Angela Calvillo
Clerk of the Board

6/23/2009
Date Approved

Mayor Gavin Newsom

Seattle Composting Requirement Frequently Asked Questions

Why is Seattle considering prohibiting food from the garbage?

Seattle sends approximately 100,000 tons of food waste 300 miles to a landfill in Eastern Oregon each year, resulting in higher costs and greenhouse gas emissions.

Based on the success of Seattle's existing recycling and yard waste ordinances, Seattle Public Utilities (SPU) projects that the food waste law will divert 38,000 tons of food scraps from the landfill via composting, thus helping the city achieve its goal of recycling and composting 60 percent of its waste by 2015.

When would Seattle's composting requirement ordinance take effect?

If this ordinance is passed by City Council, SPU would begin an education campaign in October, 2014. Food waste would be prohibited from commercial and residential garbage beginning January 1, 2015. SPU would start enforcing the law on July 1, 2015.

What items would be prohibited from the garbage under the composting requirement ordinance?

Recyclable items, such as paper, uncontaminated cardboard, bottles, cups, jars and cans are currently prohibited from the garbage. Starting January 1, 2015, no food and compostable paper, including food-contaminated cardboard, paper napkins and paper towels, would be allowed in the garbage.

How would Seattle enforce this composting requirement ordinance?

Starting January 1, 2015, all commercial establishments that generate food waste or compostable paper would have to subscribe to a composting service, compost their food waste on-site, or self-haul their food waste for processing. (Single-family and apartments are already required to have composting service.)

As of July 1, 2015 all commercial, single-family and multi-family garbage containers that would be found to contain more than 10 percent recyclables or food waste by volume would face penalties of Seattle municipal code.

Single-family properties whose garbage contains more than more than 10 percent recyclables or food waste by volume would receive a notice on their garbage container and a $1 fine would be levied on their bi-monthly garbage bill.

Multi-family and commercial properties whose garbage contains more than 10 percent recyclables or food waste by volume would receive a warning notice. Upon the third notice, the property would receive a $50 fine.

Doesn't Seattle already prohibit food and recyclables from the garbage?

Seattle prohibited yard waste from the garbage in 1988.

Seattle prohibited recyclables from the garbage in 2005.

Seattle began curbside food waste collection in 2005.

In 2009, Seattle required all residential properties to either subscribe to food and yard waste collection or participate in backyard composting. Seattle businesses that have customer dining area disposal stations where customers discard single use packaging must collect recyclable and compostable packaging in clearly labeled bins and send it to a recycling or composting facility for processing.

Since late 2011 multi-family buildings have been required to provide compost collection service for their residents.

More than 300,000 commercial, single-family and multi-family units participate in food waste collection. SPU estimates that businesses and residents have diverted nearly 400,000 tons of food from the landfill since 2005.

How do Seattle residents feel about this requirement?

In a recent survey, 74% supported it and 11% opposed it.

What effect have Seattle's recycling and composting laws had on the city's recycling rate?

From 2003 to 2013, the amount of compostable and recyclable material that Seattle has diverted from the landfill each year has increased from 38.2 percent to 56.2 percent, or 407,125 tons a year. However, the growth of recycling has slowed down in recent years. This composting requirement is a necessary step to meeting our recycling goals.

Will businesses be held accountable if their customers or the general public put food in their garbage?

Public litter cans would exempt from the ordinance.

Garbage containers in customer dining areas would be exempt from the ordinance when a business provides containers for food waste collection.

What will happen to the food that is collected?

Seattle sends more than 125,000 tons of food and yard waste to composting processers, where it is turned into compost for local parks and gardens.

Won't food waste collection make a mess and attract pests?

Like garbage, food waste is collected at least once a week from commercial and residential properties, thus minimizing vector issues. Businesses and residents currently utilize compostable bags and other compost containers in their kitchens to further reduce pests and odors.

How can I get help starting food waste collection?

Seattle Public Utilities offers free assistance to businesses and residents to help them recycle and compost, including providing education materials in multiple languages. Visit **www.seattle.gov/util** or call **(206) 684-3000**.

Will this food waste collection save me money?

Normally customers that divert a high percentage of their food waste to composting can reduce their overall solid waste bill.

Do any other cities have similar laws?

Seattle is the latest of several cities that have passed food waste requirements, including Vancouver, BC, Portland, OR, San Francisco, CA, and New York, NY.

THE WAY WE MANAGE OUR WASTE IS CHANGING

metrovancouver

SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Q & A on Metro Vancouver's Organics Disposal Ban

The way we manage our waste in changing. Together we are keeping food out of the garbage. In 2015, Metro Vancouver will introduce an organics disposal ban to support this change. These are some of the more common questions businesses in the region have asked.

1. What does this mean?

It means we will no longer throw food in the garbage. The ban is on disposal of the 'organic' waste. In this case 'organic' refers to things that can decay into compost, specifically food and yard waste.

Metro Vancouver, the regional government, manages all of the garbage produced from 2.3 million residents and businesses in the region (geographic range from Lion's Bay to Langley, in South Western British Columbia). Some businesses have been choosing to recycle their food waste for many years. Putting a disposal ban in place is a tool to encourage further reducing and recycling the food we waste.

2. Who is impacted?

The organics disposal ban applies to all waste generated in this region, whether that waste is residential, commercial, or institutional. Everyone needs to be separating food from regular garbage at home, work, school and public places.

3. Are we the first place to do this?

No, while our region is seen as a leader in waste management for having a firm commitment to recycling more of our garbage, we are not the first to put a disposal ban on organics. San Francisco, Halifax, Nanaimo, Portland, Massachusetts as examples. The upcoming organics ban is the latest change in the way we manage our waste, and like blue box recycling or cardboard-only bins, this practice will seem more normal over time.

4. What's wrong with putting food in the garbage?

In our region, about 20% of the garbage going to landfill or waste-to-energy is food; that's over 250,000 tonnes per year, and is similar to global numbers. When we throw away food all the nutrients, soil, water, money and energy that went into food production is lost. Further, food decaying under the landfill, where there is little oxygen, produces methane, a powerful greenhouse gas that contributes to global warming. In the right conditions, food that is separated from the garbage for proper processing can decay cleanly into compost or biofuel. So instead of wasting nutrients and producing greenhouse gasses, we can capture nutrients and produce soil to grow more food in or a biofuel to replace using fossil fuels.

5. What are examples of the types of food that are considered banned?

Food is thrown away all along the production line, from growing to processing, to retailing and into restaurants and homes. Restaurant and retail businesses might think of pre- consumer (in the kitchen before cooking) and post-consumer (plate scrapings and leftovers) foods. The disposal ban also includes packaged and frozen food, bakery, delis and cafes – any food you can think of.

6. How will my business separate food from regular garbage?

You're not creating more garbage, but separating the same garbage into different containers. You need to assess how you currently manage your garbage; including ordering, storage, kitchen preparation, staff rooms, bins and contracts. Metro Vancouver has a guide to getting started for restaurants. Visit metrovancouver.org and search 'Closing the Loop'. City websites have tips for residents, including apartments.

7. Is this going to cost me more money?

For many businesses, separating food from regular garbage significantly reduces the volume and service required for regular garbage. It also prompts us all to recognize and reduce waste. Some businesses already separating food from regular garbage find it cost-neutral, while others see slight decrease or increase in costs,

Q&A CONTINUED

depending on their bin sizes and hauling service contracts. In 2014 Metro Vancouver is working with small businesses to record and share examples and costs to separating food from regular garbage. Results will be shared by end of 2014.

8. Do I have to commit space and provide different access to store or haul away a separate bin for food?

You will need space for the food bin(s). Your garbage hauler may have solutions. You may be able to share a food bin with a neighbouring business or start to use smaller garbage bins.

9. Are there companies that provide services like hauling food to a compost facility, that can help me get started, or de-package food if required?

As more businesses start separating waste, more services are becoming available. The Recycling Council of BC Hotline at 604-REC-YCLE (604-732-9253) maintains a current list of service providers. Many hauling businesses that collect your regular garbage can also collect food waste. Other businesses only collect recycling.

10. Can I line the collection bins with plastic bags?

Nuisances like odour need to be managed in order to keep them from becoming a problem. Bins can be cleaned on the spot, or switched for cleaned bins at collection.

The facilities in our region make high-quality compost, and end users of that compost don't want product with plastics in it. Often plastic-looking bags labelled 'compostable', 'biodegradable' or similar often require very specific conditions to work. Also, it is difficult for employees to identify the bag type in large mixed waste piles. For these reasons plastic bag liners are generally not accepted.

There are some exceptions for commercial waste, which is high volume compared to residential waste. You need to clarify your options with your landlord or service provider. For home collection use a newsprint to line your bins, or tip and rinse regularly. In addition to plastic, examples of other contaminants to avoid are labels, wrapping, elastics, meat trays, plastic cutlery, and aluminum foil.

11. How will the ban be enforced and will there be fines once the disposal ban is in place?

Metro Vancouver has disposal bans on many other recyclable items like cardboard, paper and hard plastics. Enforcement is done when garbage loads are delivered to a disposal facility. There are fines associated with all disposal bans. Our priority is to keep food out of the landfill, not to develop an extensive fining process.

12. When does this start?

The organics disposal ban will come into effect in 2015. Initial enforcement will include warnings and information, and after a grace period surcharges will apply. Many households and businesses are separating food waste from regular garbage already.

Need more information? Visit Metro Vancouver.org and search 'Organic Disposal Ban'

1431_SW

File #: Int 1162-2013, **Version:** A

Int. No. 1162-A

By Council Members James, Brewer, Chin, Fidler, Gentile, Koo, Rodriguez, Van Bramer, Mark-Viverito, Gennaro, Koppell, Lappin and Ulrich (by request of the Mayor)

A Local Law to amend the administrative code of the city of New York, in relation to commercial organic waste.

Be it enacted by the Council as follows:

Section 1. Subchapter 2 of chapter 3 of title 16 of the administrative code of the city of New York is amended by adding a new section 16-306.1 to read as follows:

§ 16-306.1 Organic waste. a. When used in this section or section 16-324 of this chapter:

"Arena" means an establishment or facility that hosts live sporting or entertainment events.

"Capacity" means the combined capacity of facilities that are capable of accepting and processing, consistent with the terms of this section and exceeding a nominal amount, organic waste expected to be generated by and collected from designated covered establishments.

"Catering establishment" shall have the same meaning as set forth in section 20-359 of this code.

"Covered establishment" means:

1. any location at which a food manufacturer has a floor area of at least twenty-five thousand square feet ;

2. any location at which a food wholesaler has a floor area of at least twenty thousand square feet;

3. any location at which a retail food store has a floor area of at least ten thousand square feet, or any retail food store that is part of a chain of three or more retail food stores that have a combined floor area space of at least ten thousand square feet and that operate under common ownership or control and receive waste

collection from the same private carter;

4. arenas or stadiums having a seating capacity of at least fifteen thousand persons;

5. any food service establishment that is part of a chain of two or more food service establishments that have a combined floor area of at least eight thousand square feet and that: (i) operate under common ownership or control; (ii) are individually franchised outlets of a parent business; or (iii) do business under the same corporate name, provided that the requirements of subparagraph (i) of paragraph 1 of subdivision c of this section shall not apply to any such food service establishment when the building or premises in which such food service establishment is located is in compliance with such requirement pursuant to paragraph seven of this definition;

6. any location at which a food service establishment has a floor area of at least seven thousand square feet, provided that the requirements of subparagraph (i) of paragraph 1 of subdivision c of this section shall not apply to any such location when the building or premises containing such location is in compliance with such requirement pursuant to paragraph seven of this definition;

7. any building or premises where food service establishments having a total combined floor area of at least eight thousand square feet are located and where the owner of the building or premises, or its agent, arranges or contracts with a private carter for the removal of waste from food service establishments having no less than eight thousand square feet of such building or premises, provided that any such food service establishments shall comply with the requirements of subparagraphs (ii), (iii) and (iv) of paragraph 1 of subdivision c of this section, but such requirements shall not apply to the owner or agent of any such building or premises;

8. any location at which a food preparation establishment has a floor area of at least six thousand square feet;

9. any catering establishment that is required to provide for the removal of waste pursuant to section 16-116 of this code whenever the anticipated attendance for any particular event is greater than one hundred

persons;

10. any food service establishments located within and providing food to one or more hotels totaling at least one hundred sleeping rooms; and

11. sponsors of a temporary public event.

"Designated area" means within a one hundred mile radius of the city.

"Food manufacturer" means any establishment that processes or fabricates food products from raw materials for commercial purposes, provided that it shall not include any establishment engaged solely in the warehousing, distribution or retail sale of product.

"Food preparation establishment" means a business that is primarily engaged in providing food or food services for a temporary, fixed time, or based on contractual arrangements for a specified period of time at locations other than such establishment's permanent place of business.

"Food service establishment" means any premises or part of a premises that is required to provide for the removal of waste pursuant to section 16-116 of this code where food is provided directly to the consumer, whether such food is provided free of charge or sold, and whether consumption occurs on or off the premises. Food service establishment shall include, but not be limited to, full-service restaurants, fast food restaurants, cafes, delicatessens, coffee shops, and business, institutional or government agency cafeterias, but shall not include retail food stores, convenience stores, pharmacies, and mobile food vending units, as such term is defined in section 89.03 of the health code. Food service establishment shall also not include any premises or place of business where the sole or primary source of food is a refreshment counter where the available food is limited to items such as beverages, prepackaged items, and snacks.

"Food wholesaler" means any establishment primarily engaged in the wholesale distribution of groceries and related products including, but not limited to, packaged frozen food, dairy products, poultry products, confectioneries, fish and seafood, meat products, and fresh fruits and vegetables but shall not apply to establishments that handle only pre-packaged, non-perishable foods.

"Hotel" shall have the same meaning as set forth in section 27-2004 of the housing maintenance code.

"In vessel composting" means a process in which organic waste is enclosed in a drum, silo, bin, tunnel, reactor, or other container for the purpose of producing compost, maintained under controlled conditions of temperature and moisture and where air-borne emissions are controlled.

"Organic waste" shall have the same meaning as set forth in section 16-303 of this title, except that for purposes of this section, organic waste shall not include food that is donated to a third party, food that is sold to farmers for feedstock, and meat by-products that are sold to a rendering company.

"Private carter" means a business licensed by the business integrity commission pursuant to title 16-A of this code.

"Retail food store" means any establishment or section of an establishment where food and food products offered to the consumer are intended for off-premises consumption, but shall exclude convenience stores, pharmacies, greenmarkets or farmers' markets and food service establishments.

"Sponsor of a temporary public event" means the applicant for a street activity permit pursuant to chapter 1 of title 50 of the rules of the city of New York, or any successor provision, for any activity on a public street, street curb lane, sidewalk or pedestrian island or plaza with an anticipated attendance of greater than five hundred persons per day where the activity will interfere with or obstruct the regular use of the location by pedestrian or vehicular traffic. Such term shall not include activities conducted pursuant to a valid film permit, demonstrations, parades or block parties.

"Stadium" means an establishment or facility that hosts live sporting or entertainment events.

b. The commissioner shall, on a regular basis and no less than annually, evaluate the capacity of all facilities within the designated area and the cost of processing organic waste by composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule. If the commissioner determines that there is sufficient capacity and that the cost of processing organic waste consistent with this section is competitive with the cost of disposing of organic waste by landfill or incineration,

he or she shall designate by rule all covered establishments or a subset of covered establishments, based on any criteria, among such covered establishments, that generate a quantity of organic waste that would not exceed the evaluated capacity. All such designated covered establishments shall comply with the requirements of subdivision c of this section beginning no later than six months following such designation. In addition, the commissioner shall include in his or her evaluation the capacity of any facilities outside of the designated area that have arrangements or contracts with transfer stations or private carters to accept and process organic waste generated by and collected from covered establishments.

c. 1. Each designated covered establishment shall:

i. either (A) ensure collection by a private carter of all organic waste generated by such establishment for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule, (B) transport its own organic waste to a facility that provides for composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule, provided that the covered establishment first obtains a registration issued by the business integrity commission pursuant to subdivision b of section 16-505 of this code, or (C) provide for on-site in vessel composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule for some or all of the organic waste it generates on its premises, provided that it arranges for the collection or transport of the remainder of such organic waste, if any, in accordance with clause (A) or (B) of this subparagraph;

ii. post a sign, which shall be in addition to any other sign required to be posted pursuant to this code, that states clearly and legibly the trade or business name, address, and telephone number of, and the day and time of pickup by, the private carter that collects the covered establishment's organic waste, that such covered establishment transports its own organic waste, or that such covered establishment provides for on-site processing for all of the organic waste it generates on its premises, provided that:

(A) such sign shall be prominently displayed by affixing it to a window near the principal entrance to

the covered establishment so as to be easily visible from outside the building or, if this is not possible, prominently displayed inside the covered establishment near the principal entrance;

(B) catering establishments shall not be required to display on such sign the day and time of the pickup by the private carter that collects the establishment's organic waste; and

(C) this paragraph shall not apply to sponsors of temporary public events;

iii. provide separate bins for the disposal of organic waste in any area where such organic waste is generated and disposed of; and

iv. post instructions on the proper separation of organic waste where such instructions will be visible to persons who are disposing of organic waste, provided that this subparagraph shall not apply to sponsors of temporary public events.

2. Any covered establishment that arranges for the collection by a private carter of its organic waste pursuant to this subdivision shall not commingle such organic waste with other designated and non-designated recyclable material or solid waste, and shall place such organic waste out for collection by a private carter in a container or containers that (i) has a lid and a latch that keeps the lid closed and is resistant to tampering by rodents or other wildlife, (ii) has the capacity that meets the disposal needs of the covered establishment and its private carter, (iii) is compatible with the private carter's hauling collection practices, and (iv) is closed and latched at the time it is placed out for collection.

3. Any private carter that collects source separated organic waste from a covered establishment shall either:

i. deliver collected organic waste to a transfer station that has represented that it will deliver such organic waste to a facility for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule; or

ii. deliver such organic waste directly to a facility for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule.

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d. Any transfer station that receives source separated organic waste pursuant to this section shall deliver or have delivered such organic waste directly to a facility that accepts organic waste for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule. This subdivision shall not apply to waste that cannot be processed at an organic waste processing facility.

e. The provisions of this section relating to private carters shall be enforced by the business integrity commission. The provisions of this section relating to covered establishments shall be enforced by the department, the department of health and mental hygiene, and the department of consumer affairs.

f. The department, the business integrity commission, the department of health and mental hygiene, and the department of consumer affairs may promulgate any rules necessary to implement this section, including, but not limited to, rules establishing reporting requirements sufficient to demonstrate compliance with this chapter.

g. Any person who owns or operates two or fewer food service establishments may request, and the commissioner shall grant, a waiver of the requirements of this section if: (1) no single food service establishment has a floor area of at least seven thousand square feet; (2) the food service establishment or establishments are individually franchised outlets of a parent business covered by paragraph five of the definition of "covered establishment" set forth in subdivision a of this section; and (3) the owner or operator establishes that such food service establishment or establishments do not receive private carting services through a general carting agreement between a parent business and a private carter. Such waiver shall be valid for twelve months and shall be renewable upon application to the commissioner via the department's website.

§ 2. The opening paragraph of subdivision a of section 16-324 of the administrative code of the city of New York, as amended by local law number 77 for the year 2013, is amended to read as follows:

a. Subject to the provisions of subdivision b of this section, any person who violates this chapter, except section 16-306.1 of this chapter, subdivision g of section 16-308 of this chapter or section 16-310.1 of this

chapter, or any rule promulgated pursuant thereto, shall be liable for a civil penalty recoverable in a civil action brought in the name of the commissioner or in a proceeding returnable before the environmental control board, as follows:

§ 3. Section 16-324 of the administrative code of the city of New York is amended by adding a new subdivision e to read as follows:

e. (1) Any covered establishment that violates section 16-306.1 of this chapter or rules of the department, the department of health and mental hygiene, or the department of consumer affairs promulgated pursuant thereto shall be liable for a civil penalty recoverable in a civil action brought in the name of the commissioner or the commissioner of health and mental hygiene, or the commissioner of consumer affairs, or in a proceeding returnable before the environmental control board, the health tribunal at the office of administrative trials and hearings, or the administrative tribunal of the department of consumer affairs, in the amount of two hundred fifty dollars for the first violation, five hundred dollars for the second violation committed on a different day within a period of twelve months, and one thousand dollars for the third and each subsequent violation committed on different days within a period of twelve months, except that the department, the department of health and mental hygiene, and the department of consumer affairs shall not issue a notice of violation, but shall issue a warning, for any violation by a designated covered establishment that occurs during the first twelve months after the commissioner designates such covered establishment pursuant to subdivision b of section 16-306.1.

(2) Any transfer station that violates section 16-306.1 of this chapter or rules of the department promulgated pursuant thereto shall be liable for a civil penalty recoverable in a civil action brought in the name of the commissioner or in a proceeding returnable before the environmental control board in the amount of two hundred fifty dollars for the first violation, five hundred dollars for the second violation committed on a different day within a period of twelve months, and one thousand dollars for the third and each subsequent violation committed on different days within a period of twelve months, except that the department shall not

issue a notice of violation, but shall issue a warning, for any violation by a designated covered establishment that occurs during the first twelve months after the commissioner designates such covered establishment pursuant to subdivision b of section 16-306.1.

(3) Any private carter that violates section 16-306.1 of this chapter or rules of the business integrity commission promulgated pursuant thereto shall be liable for a civil penalty recoverable in a civil action brought in the name of the chair of the business integrity commission, or in a proceeding brought by the chair of the business integrity commission held in accordance with title 16-A of this code, except that the chair of the business integrity commission shall not issue a notice of violation, but shall issue a warning, for any violation by a designated covered establishment that occurs during the first twelve months after the commissioner designates such covered establishment pursuant to subdivision b of section 16-306.1.

§ 4. This local law shall take effect July 1, 2015.

JJH-12/18/13
LS 4466

RCAB – Zero Waste Update October 2014

Boulder County Land Use staff met to discuss the current state of construction and demolition debris management in the unincorporated area and whether any changes would help spur additional diversion. Site inspectors will consider increasing their monitoring of on-site containers. A meeting with county contractors and building officials is also pending: The County's construction codes are due to be updated in January 2015.

Following Jeff Callahan's retirement, Darla Arians, the County's Zero Waste Program Manager, will serve as Interim Manager of the Resource Conservation Division. A national recruitment is planned and Jana Petersen, Administrative Services Department Director will reach out to RCAB members for input and participation in this recruitment.

Boulder County Resource Conservation Advisory Board (RCAB) Meeting
October 22, 2014

Boulder County Recycling Center, Education Room, 1901 63rd Street, Boulder

AGENDA

1. Call to Order / Introductions	4:45 p.m.
2. Approval of Minutes – September 27, 2014	4:46 p.m.
3. Public Comment (Maximum Time Allocated 10 minutes)	4:47 p.m.
4. Special Introduction – Darla Arians, Interim Manager, Boulder County Resource Conservation Division	4:50 p.m.
5. Special Reports: Data Collection/Analysis a. Improved Tracking of Waste Diversion in Boulder County using ReTRAC – Darla Arians, Resource Conservation Division b. Boulder County Sustainability Program Impact Analysis (Zero Waste Component) – Nick Sterling, Natural Capitalism Solutions	4:57 p.m.
6. Priority Topic: Composting ACTION: Study Session to explore composting policy, program and infrastructure improvements needed to significantly increase organic diversion in individual municipalities and across the county. c. Subcommittee and Working Group Reports – Lisa Skumatz, Suzanne Jones, Hilary Collins d. Programmatic and regulatory options – Lisa Skumatz e. Compost Recommendations/Discussion	5:15 p.m.
7. Next Month's Meeting/Agenda topics • Re-schedule Nov. 26 meeting/combine with Dec. meeting? • Final recommendations on compost infrastructure, programs, policies, education, outreach, signage • Zero Waste Funding recommendation	6:15 p.m.
8. Any Other Business	6:16 p.m.
9. Community Reports - Questions on written reports only (Please remember to send your report in advance!)	6:17 p.m.
Adjourn	6:30 p.m.

Resource Conservation Advisory Board (RCAB)

The Resource Conservation Advisory Board (RCAB) was formed in 2002 to advise the Board of County Commissioners on major waste diversion policies and strategies.

The purpose of the Advisory Board shall be to assist the Board of County Commissioners in reducing the amount and toxicity of waste generated in the county; to research, review and recommend changes in policy related to waste reduction, reuse, recycling and composting; to provide input on the development and management of facilities and programs; and as a result of these efforts to help Boulder County and its communities and partners to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution.

Sustainability Office

Street Address: 1325 Pearl Street 13th Boulder, Colorado 80302
PO Box 471, Boulder, CO 80306 • Tel: 303-441-4565

Boulder County Resource Conservation Advisory Board Meeting
Sept. 24, 2014

Present:
Jack DeBell – CU Recycling
Tom Dowling – Lafayette
Juri Freeman – At Large
Lisa Friend – Boulder County
Bryce Isaacson – Western Disposal
Bridget Johnson – Jamestown (phone)
Suzanne (Zan) Jones – Eco-Cycle
Charles Kamenides – Longmont
Shari Malloy – At Large
Dan Matsch – Lyons
Lisa Morzel – At Large
Mark Persichetti – Louisville
Lisa Skumatz – At Large

Active Members Not Present:
Alexander Armani-Munn – Nederland
Shirley Garcia – Broomfield
Tim Plass – Boulder
Holly Running-Rabbit – Ward
Dan Stellar – Center for Resource Conservation
Martin Toth – Superior

County Staff:
Jeff Callahan – Boulder County Resource Conservation Division (BCRCD)
Hilary Collins – Commissioners' Office/Sustainability

Guests:
Kevin Afflerbaugh – Western Disposal
Dan Gudgel – Waste Connections
Jamie Harkins – City of Boulder
Matanya Horowitz – Cognitive Robotics
Elizabeth Montalbano – City of Boulder
Anne Peters – Gracestone Inc. (arrived for Special Event portion of the meeting)
John Shepherd – Shepherd Sustainability

Minutes:

1. **Call to Order by Chair, Mark Persichetti / Introductions (4:49 pm)**

2. **Approval of August 2014 Minutes** – Minor changes were recommended for the August minutes, including clarification that Bryce Isaacson had attended the July meeting and that Mark Wesson had provided the Spring Cleanup presentation. Lisa F. moved approval of the amended minutes; Tom D. seconded, and the minutes were unanimously approved.

3. **Public Comment** – Matanya Horowitz with Cognitive Robotics in Golden reported that his company is a start-up interested in sorting Construction & Demolition (C&D) debris. He hopes to have a prototype for demonstration later this year and wanted to introduce himself and the company. His contact information is matanya@cognitiverecycling.com; 720-470-0812

4. **Priority Topic: Composting**

a. Zan reviewed the key findings of the draft Compost Capacity Study commissioned by Boulder County, the City of Boulder, Eco-Cycle, and Western Disposal (the PowerPoint was provided with meeting documents). The capacity study predicts a doubling of compost in the county, which Zan thinks is a conservative estimate: tonnages will be much higher when the county achieves its zero waste goals.

- Lisa M. asked about the amount of organics not being collected. Zan reported infrastructure working group members will look at the capacity analysis to see whether they agree with the assumptions and the math.
- The study shows the County has access to sufficient physical capacity for organics processing in the region, but that Western's site is currently available only to Western Disposal customers. Bryce clarified that haulers of residential organics are allowed to access Western's facility but that some contractors don't choose to use it.
- The study also determined a new regional facility with capacity of 30,000 tons per year would cost about $4 million to build plus an estimated $1 million for site acquisition (10 acres) and estimated annual operating costs of up to $700,000 per year. If such a facility were to be constructed, there is no guarantee local tons would be delivered to it.
- Some discussion about anaerobic digestion options followed.
- Suzanne discussed the report's four recommendations, summarized below:
  1. There would not appear to be a compelling need to develop stand-alone compost capacity in the county at this time. Boulder County could explore avenues that expand access to the Western site.
  2. To increase participation in organics collection by the commercial sector, investigate means of providing increased financial incentives or developing a mandatory ordinance. These tools require significant public education and outreach.
  3. The City of Boulder could consider a feasibility analysis of anaerobic digestion for municipal food scraps at the wastewater treatment plant.
  4. Consider a targeted analysis of commercial organics generators to determine current composting participation levels and future potential volumes of organics.
- Next steps: The infrastructure committee will make recommendations.
- Lisa F. will send the report to RCAB members once the city of Boulder has approved the final draft. (Boulder County, Eco-Cycle and Western Disposal have approved release.)

b. Lisa reviewed the Existing Conditions Report provided in the packet.
   - Jack asked about the potential for intergovernmental cooperation including compost supply agreements. Dan M. suggested that planning would be a good cooperative opportunity. Hilary suggested agreements with organics suppliers and Western Disposal that could form the basis for a recommendation to the Board of County Commissioners.
   - Mark P. suggested some consistency in reporting could also be agreed upon

c. Lisa S. provided an update presented a review of program and regulatory options.
   - Lisa noted that a spectrum of options is available for "Aggressive" vs. "Less Aggressive" communities and that strategies include incentives, taxes, mandates and bans as well as facilities, lobbying, and expensive education.
   - She discussed "easy" options on the commercial side, including lobbying for better standards at the state level and adding space for containers. Additional commercial options were addressed. Clarifying notes are included below:
   - Require organics plans of businesses – recycling plans are common; why not organics, too?
   - Education on bidding and contracts helps businesses get the most effective and cost-effective diversion service.

- Business recognition programs – do these lead to any change? Lisa thinks they do but hasn't seen any measurement on it.
- Encourage cooperative agreements in neighborhoods – joint collection or pay a fine – the local jurisdiction could work with the hauler to arrange billing.
- Food scraps embedded in the cost for all consumers: Not just food-generating consumers. This makes the cost quite low. Is this getting into "rate regulation"? Bryce says such approaches are legal in Colorado. Lisa S. says this is how Boulder multifamily rates are designed.
- Charge taxes on trash but not on recycling or organics. This improves finances, and uptake with a trash tax is significant! Our trash bill is so low, however, that the tax would have to be quite high to be effective. City of Boulder trash tax is 85 cents a cubic yard.
- ABC for food: certain businesses generate all beverage containers (ABC); some programs require them to recycle or lose their liquor license. Perhaps this approach could also require food diversion.
- Disposal bans for food or organics is more aggressive, however a mandatory diversion program with enforcement might be easier.
- Contract incentives are paid to haulers to encourage them to get businesses beyond food waste collection: Haulers that meet a certain diversion percentage would get some type of financial incentive for meeting the goal.

- Differential tipping fees might work with a private landfill.
- Hilary and Zan would like to see a list sorted by ease of implementation and highest impact; let's get a menu of options.
- Jeff offered the county attorney to look at short-list initiatives in the light of powers that municipalities might have. We are not sure, for instance, what the legality of a ban might be.
- Jack: Do we know what municipalities are doing these? Very few are doing these in Boulder County, Lisa S. says. Can we plot who is doing what? Do we have the data to indicate what's effective?
- Next steps: Lisa S will come up with a commercial options package based on feedback. Maybe we can do the residential side next month.

d. Lisa S, Zan and Hilary provided subcommittee and working group reports

- Lisa S. The Recycling Center subcommittee met this week and discussed progress on 13 topics. The next meeting is scheduled for mid-October. The group has some data requests out. The numbers gathered thus far are interesting and need more drilling down.
- Zan: The infrastructure working group met to focus on infrastructure and talked about agreement on baseline numbers for the amounts of organics we produce and how much we think we can divert now and into the future. Will next look at the compost study numbers. The idea of the working group is to look at infrastructure options across many issues, not just compost.

  Discussion:
  - Looking at what infrastructure we think we need to have to process compostable materials. Dan from Eco-Cycle gave an overview of criteria we want to look at: distance to facility, tipping fee, and technology used to process the materials. (Including compostable ware and soiled paper in compost requires different processing than straight food.) We need to look at these variables. We are basically competing with the landfill, which offers some of

the cheapest disposal costs in the country at roughly $20 per ton plus travel. We need to find a compost situation that would be competitive.

- Let's look at what we have or would like to have. Had heard about A1 and Heartland. Discussed physical capacity at Western, and discussed access. Bryce will present on Western's facility next time.
- Kurt Kowar from Louisville discussed a roughly 10-acre site next to their waste water treatment plant not yet permitted for compost but historically used for bio-solids. Staff has permission to approach the county and offer the site as a zero waste infrastructure option. Longmont is interested in a closer transfer site.
- Joe Gierlach, the Mayor of Nederland spoke at the meeting about the town's decentralized composting approach idea – which would use beetle-kill wood and compost in a new system for forest management.
- The group also talked about comparing existing facilities and options with the cost of building a new facility but did not look yet at the cost of a transfer site.

- Hilary reported on the education working group. Initial accomplishments were to set boundaries of what would and would not be considered (education being a broad topic). The group looked at current conditions and will come up with a matrix to zero in on what is needed.
- Hilary will send out reminders about the working group meetings.

5. Next Month's Agenda – October's agenda lists continued study sessions on composting and questions about the flood report, the latter of which will be provided in writing for information and any necessary discussion.

Discussion:
Jack: Let's look at more work on the Lisa S. ideas to organize categories and advance techniques and tools.

We need to discuss the viability of the scenarios and make recommendations. Lisa S. and Lisa F. can work together on this. Would Lisa S. want to cover residential topics, too? The summary should go faster next time.

Bryce: Are we hoping to come out of the October meeting with recommendations? We had discussed after the two-month mark, moving out of each block with recommendations: Is this still feasible? It's a bit of a tall order: We are still working through some information and options.

Lisa S. can send out some ranked options before the next meeting. Let's have people come to the meeting knowing what they think would be most helpful in their communities. No dot voting. Let's get to a draft recommendation for the BOCC by the November meeting. This gives staff more time to work with Lisa S. and look at a menu of options. The Infrastructure work group, too, can look at some recommendations.

Zero Waste grant applications are due Nov. 4. Therefore, the Zero Waste grant subcommittee will bring recommendations to the November meeting. Charles K. will join the grant evaluation subcommittee.

6. Other Business – If your community is planning something for America Recycles Day, Nov. 15, let Lisa F. know. EPA Region 8 has offered to send a dignitary if anyone has an event planned. The County has no plans.

7. Community Reports – Prior to giving her report, detailed above, Lisa S. offered congratulations to RCAB members Jack DeBell and Juri Freeman, who join Lisa S. and the Colorado Association for Recycling's Marjie Griek as front-range residents elected to the board of the National Recycling Coalition.

Boulder County, Erie, Jamestown and Lyons sent written reports, copied below (following the notice of adjournment). Lisa F. added to hers that Boulder County and the city of Boulder are considering purchase of the Re-TRAC diversion tracking and reporting software, widely used in the U.S. Darla Arians from the BCRCD can be asked to present about this next meeting.

Lisa S. has finished entering this year's county report data and will distribute to all via email.

Longmont sponsored a household chemical collection day: 458 residents came through. It was a big event, though the data for tonnages and gallons collected is not back yet. Part of the diversion is latex paint recycled via Boulder County. Also, a Hard-to-Recycle event a few weeks ago was really well attended. No data is available yet to share with anyone. Like many communities, Longmont will benefit from a pharmaceuticals drop-off this coming weekend (Sept. 27). The city's will be at Longmont United Hospital.

On behalf of Superior, Lisa S. reported the town council was asked to support a bag fee but has asked for something bigger – not just the fee but a larger package, on which the committee is working. This recycling plan would be the first one in Superior.

A grassroots issues group in Lafayette has begun a door-to-door campaign for an energy futures tax, which will be on the city ballot this autumn for possible citizen approval. The tax would help reduce the city's carbon footprint.

8. Special event: Jeff Callahan's Retirement

Jeff is retiring from Boulder County on October 10. He was hired by the County after a national search and came from a successful career in waste management in New Jersey. Jeff began working for the county in 1996 and served as director of the Boulder County Recycling and Composting Authority, which was created after passage of a 1994 sales and use tax. Jeff managed design and construction of the Boulder County Recycling Center (BCRC) and procurement of its operator. When the new county Resource Conservation Division was created, he gained responsibility for the division and its many programs, including various transfer stations and the Hazardous Materials Management Facility.

Jeff retrofitted the BCRC for single stream, designed the county hauler ordinance that requires Pay-as-you-Throw pricing, supervised the zero waste program at the Boulder County Fair and saw many other county programs expanded and improved. Jeff also contributed expertise to other county capital projects, including the Eldorado Springs sewage treatment plant. He retrofitted buildings for the Boulder Emergency Squad headquarters and the new headquarters for the Longmont emergency unit. Jeff played a significant role in response to fire and floods and managed the debris removal program for the Town of Lyons after the 2013 flooding.

Jeff thanked and credited Hilary for her attention. He has worked with Hilary, Shari and Lisa Morzel from "day one." He cited a "very fun and rewarding career here in Boulder County" and said he was very proud of the BCRC, which he has operated for 13 years. He praised the work of Boulder County Building Services and Eco-Cycle in keeping the center well maintained and said he is happy to be able to turn it over to Boulder County "unscathed" and ready to go another 13 years.

After discussing the Eldorado Springs project, Jeff received a "Mountain Strong" hat from Hilary. Bridget conferred the thanks of Jamestown. Lisa M. spoke of changes since the recycling center was started: "Communities had a lot of different kind of visions," she said, adding "Jeff was not in the easiest place."

Anne Peters observed: "Your leadership has been great . . . You basically took this organization from nothing." She went on to detail Jeff's vision and actions to create the Recycling Center: "If Jeff hadn't been here, we wouldn't have been able to morph through all the stages that we've been through to get where we are today."

Additional recollections followed Lisa M's motion to adjourn at 6:34, seconded by Jack DeBell.

* * * * * * * * * * *

Text of Community Reports:

Boulder County Report

The Compost Capacity Analysis co-sponsored by Boulder County, the city of Boulder, Eco-Cycle and Western Disposal Services should be completed before the RCAB meeting. A copy of the study will be posted to the County's web site and reviewed by the Infrastructure Working Group. Ask Lisa for the final "Findings" and "Recommendations," which should be available by RCAB meeting time.

America Recycles Day will be November 15th. Boulder County programs are not planning anything special for the date, which falls on a Saturday this year. We can, however, promote local activities through our county outreach programs.

Staff will speak about the challenges of managing woody flood debris while under Emerald Ash Borer quarantine at the SWANA state conference in Estes Park and at the Colorado Association for Recycling annual meeting at Red Rocks, both in October. The ash borer infestation threatens neighboring counties, who are interested in learning from Boulder County's experiences.

The Colorado Product Stewardship Council (CoPSC) received the 2014 Nightingale Policy Advancement Award for its work on paint stewardship from the North American Hazardous Materials Management Association (NAHMMA) at its 29th Annual Conference in Orlando, Florida, in August.

CAFR poster contest winner: Congratulations to Boulder Kindergarten student, Elizabeth Brandt, of Eisenhower Elementary School, Boulder, who was a winner in the Colorado Association for Recycling's recycling poster contest. Colorado K-12 students and youth organization members showcase their artistic talent and their commitment to the environment by participating in this annual contest. Elizabeth's poster "Compost Your Food Waste" will be featured in CAFR's 2015 Calendar, and all 12 winning students received a copy of their artwork in a recycled-content frame. http://cafr.org/events/posterContest.php

Erie Report:

The Town of Erie Operation and Maintenance division hosted the 9th annual Spring Clean Up at the Denver Regional Landfill on Saturday, May 3, 2014. The event is offered as a service to the Town of Erie residents allowing disposal of a variety of items at no expense to them.

Town of Erie staff assisted residents with directions, confirming residency, and ensuring compliance with landfill regulations and assisted residents with unloading for the various services offered at the Service Center.

This year's clean up went very well with a lot of participation, at least 1,320 drop offs were made between the landfill and the Service Center. Total of 691 loads for the landfill and 629 loads for the Service Center recycling. Due to the amount of material received, vendors had to make more than one trip to the Service Center to haul off items.

- Landfill – There were 691 loads (66 autos, 468 pickups, 157 trailers) dropped off at the landfill in 6 hours. This compares to 339 loads dropped off in fall of 2013. Total savings to Town residents was $45,233.15.
- Goodwill of Denver – There were 85 loads dropped off at the Goodwill of Denver that filled a semi-trailer full. This compares to 19 loads dropped off in fall of 2013 for Habitat for Humanity.
- Electronics – There were 238 loads of electronics dropped off resulting in 6,509 pounds of electronic equipment being recycled. This compares to 10 loads in the fall of 2013.
- Paper Shredding – There were 136 loads for a total of 4,380 pounds. This compares to 3,600 pounds in the fall of 2013.
- Paint – This was a new service added this spring. There were 113 loads of paint received.
- Scrap Metal – This was a new service added this spring. There were 57 loads dropped off.

The Operation & Maintenance division will host the next 9th annual Fall Clean Up on September 13, 2014, and hopes to continue partnering with the same vendors for this event as well as possible additions.

Jamestown Report:

The 1 year flood celebration went really well last weekend. We had a Senator, two Boulder City Council members, State Representatives and other big-wigs up to see what the town had put together. There were many visitors to the Friday night presentation at the town hall. Local artists sold art & flood bowls made from flood debris to help raise money for the never ending town-rebuild efforts, there was a flood video playing throughout the evening of the destruction that ripped through Jamestown, there was a speech by Mayor Tara at 6 pm and lastly people were encouraged to take photos with the American Red Cross & their 1,000 faces project that was setup outside the town hall event Friday night.

Saturday there was a big celebration for just residents in the Big Park with a huge rock Labyrinth dedication (over 30 residents helped create the labyrinth including the whole green girl family)! It's located by the tennis court at the big park and is just amazing to walk through and experience. Many locals read poems, the JES school kids sang songs, there was a huge bonfire and end to the last year of stress and road craziness. The town is really excited to have built a temporary new fire house at the big park and is currently looking into the possibility of composting for residents.

- 95% of the town now has running water
- The Mennonites are still in town helping to rebuild at 3 different homes
- The old Fire Station was just ripped down and removed

Lyons Report

Hauler's Ordinance – Lyons' Sustainable Futures Commission has developed a draft hauler's ordinance that would require solid waste haulers operating within the town to apply for an annual operating permit and submit an annual report. The goal is to gather data on the volumes of trash, recyclables, and compostables being collected on residential and commercial routes in Lyons. The ordinance is modeled on Boulder County's ordinance. The SFC expects to send a final draft to the Lyons Board of Trustees in October.

Expanded Spring Cleanup – in an attempt to increase diversion options and community involvement in Lyons' annual spring cleanup event, the SFC is also developing a plan to set the schedule of the event for a specific weekend that can be repeated annually, and is considering adding a town-wide yard sale and/or free exchange event to be held either the weekend before or on the same weekend as the cleanup event

Re-TRAC Connect

Presentation to RCAB
October 22, 2014

Boulder County
Resource Conservation

By Darla Arians

Data Challenges

* Lots of staff time to collect & compile data
* Inconsistent data from haulers
* Varying categories of materials over the years
* Not all materials are being captured due to lack of requirement from the Ordinance
  * *Exemptions = landscapers, demolition companies*
* Challenges from haulers to collect accurate data:
  * *routes do not always match municipal boundaries*
  * *not easy to collect data without electronic record keeping*

Improvements

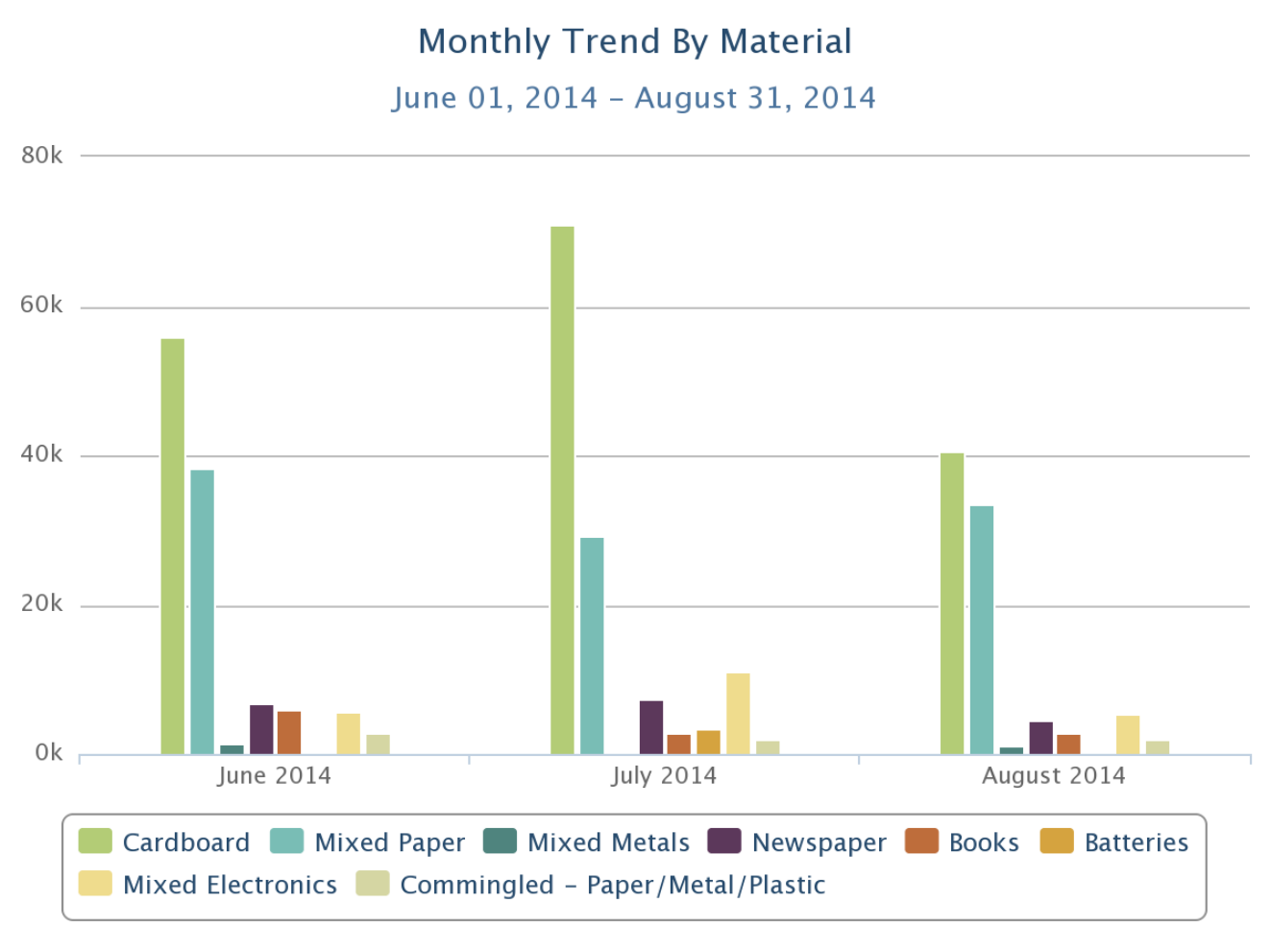
Boulder County and the City of Boulder have collaborated over the last several years to make reporting easier for haulers and more consistent with one another.

* In 2011 we combined hauler reports to be the same *(to cause less confusion for haulers and to collect matching data)*
* In 2014 we both began to offer online reporting for haulers

What is Re-TRAC?

Consistent data collection for Boulder County

Tracking Tool



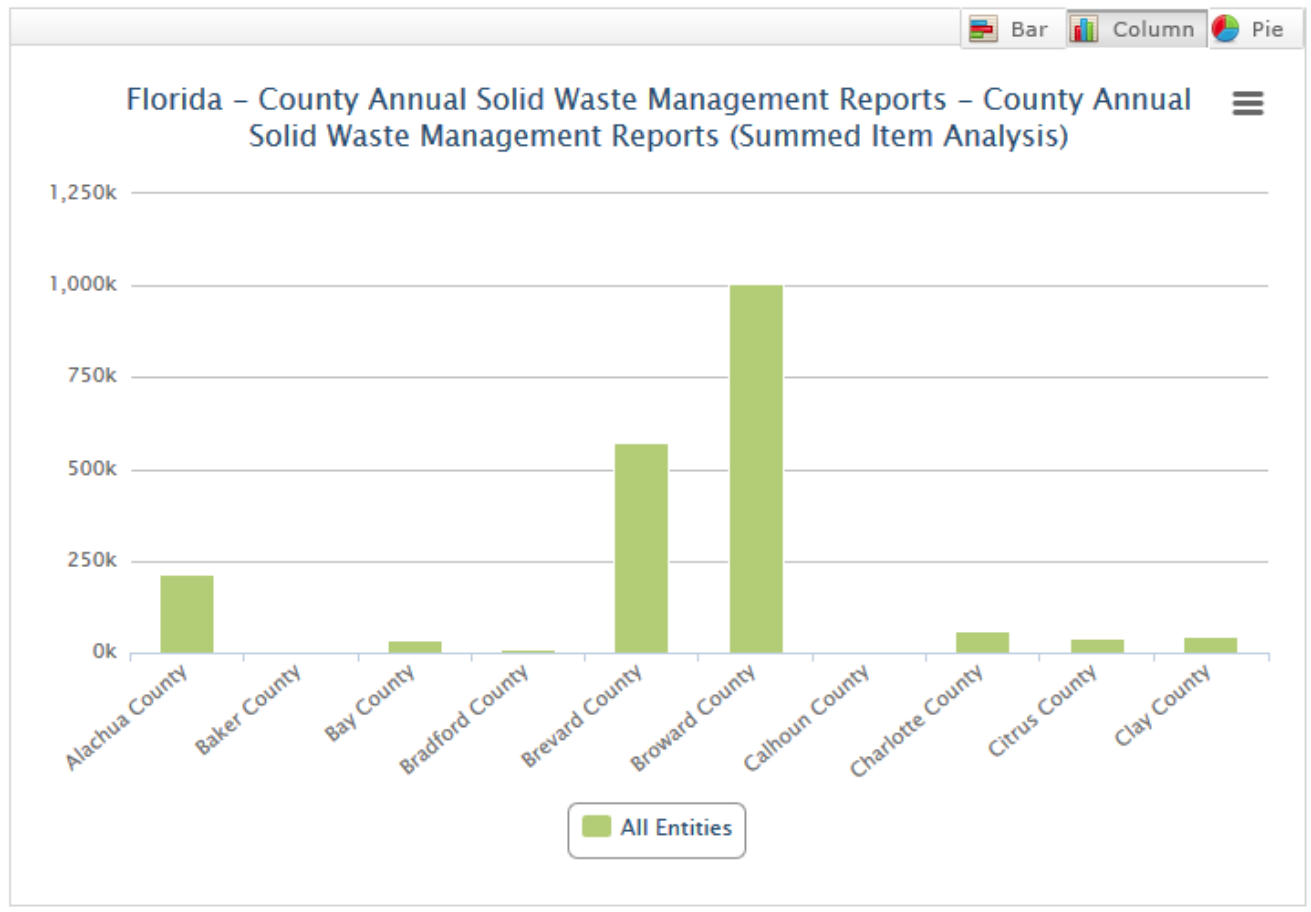
Reporting System

Monthly Trend By Material (Pounds)

June 01, 2014 - August 31, 2014

Material	June 2014	July 2014	August 2014
Cardboard	55,788.00	70,900.00	40,640.00
Mixed Paper	38,262.00	29,295.00	33,435.00
Mixed Metals	1,347.00		1,036.00
Newspaper	6,745.00	7,340.00	4,460.00
Books	5,945.00	2,835.00	2,835.00
Batteries		3,441.00	
Mixed Electronics	5,658.00	11,204.00	5,294.00
Commingled - Paper/Metal/Plastic	2,740.00	2,060.00	2,080.00
Total:	*116,485.00*	*127,075.00*	*89,780.00*

Streamlined



Trusted

The following agencies utilize and endorse Re-TRAC:

* Colorado Department of Public Health & Environment (CDPHE)
 **uses it as a tool to share Colorado's information with other states*

* EPA Region 8

* EPA National

**and 15,000 other users, including Portland Metro who uses it across multiple municipalities/counties/agencies similarly to how we'd like to*

Cost

$14,981

The purchase cost will be split by Boulder County and City of Boulder in 2015. Total cost to Boulder County is $7,491.00.

Annual subscription renewal fee is $3,606 – to be split by Boulder County and City of Boulder in 2015. Total cost to Boulder County in 2015 is $1,803.00.

Boulder County and the City of Boulder have agreed to pilot this new data collection tool in 2015, and we will work together to set up accounts for every hauler. We are providing group training sessions for the haulers.

Request from RCAB

We are interested in finding out if our community partners would like to collaborate with us in utilizing ReTRAC for consistent data reporting for all of Boulder County.

We request that RCAB members check in with their respective community to see if there is interest in purchasing a share of ReTRAC.

Please report back at the November/December meeting.

Boulder County
Resource Conservation

If you have additional questions about ReTRAC, please contact Darla Arians at 720-564-2223 or darians@bouldercounty.org.

ORGANICS PROGRAM CONCEPTS FOR CONSIDERATION IN BOULDER COUNTY - DRAFT

sa Skumatz, SERA, for use of RCAB planning - not to be circulated / used beyond, please.

Concepts - relative costs and impacts not included (yet); to spur discussion...

10/22/2014

	RESIDENTIAL PROGRAMS	Recommended/Suitable for...		COMMERCIAL STRATEGIES	Recommended/Suitable for...		
		Aggressive	Less Aggressive		Aggressive	Less Aggressive	
EDU	24. Social marketing	Yes	Yes	20. Education on bidding / contracts	Yes	Yes	EDU
EDU	R134. MF concentrated outreach	No?	No	22. Business recognition program	Yes	Yes	EDU
EDU	R144. Insink disposals program	Yes if suited	Yes if suited	91. Free waste audits / visits	already	Yes ltd?	EDU
FAC	48. Dropoff at transfer station or other location.	No?	Yes (bears?)	23. Com'l outreach / social marketing	Yes	Yes?	EDU
FAC	R214. Wet dry collection system	?	?	24. Outreach on food scraps diversion - door to door	Yes	?	EDU
INC	14. Food scraps (organics) costs embedded for all res customers	Yes/2nd stage	No	48. Dropoff at transfer station or other location.	No?	Yes (bears?)	FAC
INC	17 & 38. Taxes on some material streams	Yes if possible	?	X. Facility development / partnerships, etc. - regional / area	Yes		FAC
INC	18. Require incentive rates for Composting service	Yes	Yes	17 & 38. Taxes on some material streams	Yes if possible	?	INC
INC	R221. Change contract payments to favor food / organics tons	?	?	18. Require incentive rates for Composting service	Yes	Yes	INC
INC	R223. Contract incentives to meet goals	Yes	?	R223. Contract incentives to meet goals	Yes	?	INC
INC	R225. Differential tip fees for meeting goals	Authority?	Authority?	R225. Differential tip fees for meeting goals	Authority?	Authority?	INC
PGM	85. EOW Trash	Yes	Opt?	14. Food scraps costs embedded for all com'l customers	Yes/2nd stage	No	PGM
PGM	34. PAYT / embedded food scraps (organics) col'n	Already	?	27. Small businesses added to residential composting program	Yes	Yes	PGM
PGM	R84. Consider EOW Recy to help fund organics coll'n	Yes	Yes	30. PAYT composting bag program for small com'l	Yes?	?	PGM
PGM	R118. Rebate for food / organics bin	No?	No	34. PAYT / embedded food scraps col'n with ratio...	Yes	?	PGM
PGM	R150. Micro can for trash	Yes	No	42 & 43. Establish limited targeted com'l food scraps program or partner or pilot	Yes	Yes	PGM
PGM	86. Pay more for NOT composting	Yes	?	88. ABC for food	Yes?	No	PGM
PGM	88. No bin no barrel	Yes	Yes?	92. Encourage cooperative agreements in neighborhoods / joint coll'n / pay?	?	?	PGM
POL	3. Measure / estimate current diversion in community and set goals			3. Measure / estimate current diversion in community and set goals	es if not alread	?	POL
POL	10. Procurement - require use of local compost material - city & maybe bldg codes, etc.	Yes	Yes	10. Procurement - require use of local compost material - city & maybe bldg codes, etc.	Yes	Yes	POL
POL	85. Consider contracts for collection to get desired services at desired incentives	Done	?	31. Mandatory composting for selected generators	Yes	Yes?	POL
POL	R77. City-wide ordinance requiring all MF >x units to get service	No?	No	45 & 46. Contracting for collection - community or business association or muni	?	No?	POL
POL	R101. Mandatory food (organics?) for all HHs	?	No	90. Disposal ban - food / organics	Yes?	?	POL
POL	90. Disposal ban - food / organics	Yes?	?	91. Mandatory program - enforcement options...	?	?	POL
POL	91. Mandatory program - enforcement options...	?	?	0. Lobby for better standards at state	Yes / CML	Yes	REG
POL	R233. Stop spring clean-ups	Yes	Yes	102. Space for containers ordinance	Yes	Yes	REG
REG	0. Lobby for better standards at state	Yes / CML	Yes	7. License with reporting required as part of license	Yes	Yes	REG
REG	7. License with reporting required as part of license	Yes	Yes	12. Com'l hauler license requirements to offer food scrap coll'n	Yes	?	REG
REG	12. Hauler license requirements to offer food / organics scrap coll'n	Yes	?	98. Require organics plans	Yes	Yes	REG

RCAB OPTIMIZATION SUBCOMMITTEE -- INTERIM RESULTS (DRAFT)

DATE: October 22, 2014

TO: RCAB

FROM: RCAB Optimization Subcommittee: Lisa Skumatz <skumatz@serainc.com>; Bridget Johnson <greengirlrecycling@yahoo.com>; tim.plass@gmail.com; Charles.kamenides@ci.longmont.co.us; Suzanne Jones <zan@ecocycle.org>; lisa friend <lfriend@bouldercounty.org>; malloy_sharon@stvrain.k12.co.us; Malloy, Sharon <malloy_sharon@svvsd.org>; Collins, Hilary <hcollins@bouldercounty.org>; Arians, Darla <darians@bouldercounty.org>; 'debell@colorado.edu'; Callahan, Jeff <jcallahan@bouldercounty.org>;

SUBJECT: Memo on Interim Results of the BCMRF Optimization (Tons & Costs) Subcommittee

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The Subcommittee was established to further explore questions that arose in the RCAB around the costs / budgets and tonnage levels associated with the Boulder County MRF, which drew out of a detailed discussion in the Spring regarding why the BCMRF paid relatively low incentives to haulers bringing tons to the facility. The main objective of the subcommittee was to investigate:

How can tonnage to the facility be increased (assuming sustainable economics)?

And the corollary questions that came with that overarching mandate (affecting tons or economics) included:

1. How do BoCo's hauler incentive compare to other regional facilities – in level and other factors?
2. Have haulers bringing tons (or who used to bring tons) been bringing more or less, and why? Are there opportunities or barriers?
3. Are there specific opportunities to increase the tons at the facility? How much?
4. Are there regulatory ways to drive more tons to the facility? Can the facility handle that?
5. How do BoCo MRF costs compare with other facilities? County? Operations? Are there changes that would improve the economics?
6. Are there changes to incentives or contracts that should be considered for future MRF operations?
7. Are there opportunities / places to achieve higher revenues?

The Subcommittee's work is "high level". The issues associated with the BCMRF seemed to be at a policy level, and that is borne out by our analysis thus far. A few issues remain, but this memo summarizes our interim, high level findings.

1. **How do BoCo's hauler incentive compare to other regional facilities – in level and other factors?**

A great deal of the tonnage at the BoCo MRF comes from municipalities or and from private haulers. Haulers in particular, are sensitive to the role that the gate fee paid for bringing material, as it is an important component of their operational revenues. In June and July, Bridget Johnson of Green Girl Recycling provided data (see attached information) to the larger RCAB committee that demonstrated three things about Boulder County's facility:

- It pays substantially less per ton to haulers than do other regional facilities (and it does not reflect market conditions, at least on the up-side).
- It pays an uncertain amount – the amount haulers will be paid is unknown at the time they bring the materials.[1]
- It pays late – more than a month after the materials are brought.

These factors lead the facility to be relatively unattractive to haulers. Although the facility has generally hoped that the contributions that Boulder County communities made to the facility would lead to its use (regardless of on-going gate fees), haulers have difficulty maintaining a sustainable business when it is made impossible to know what your revenues will be from a given load. This has, based on interviews, caused some haulers to bring materials to other facilities that 1) pay better fees, 2) publicize these fees, and 3) pay in a timely way.

We understand the County has recently decided to revise these policies.

Recommendations:

- Prioritize payments to haulers in the budget. This seems to be a crucial link in getting tons to the facility and should not be treated as a "residual", but more like an operating cost, or cost of doing business.[2]
- Other public facilities publish the gate fees they pay, and we understand Boulder County is doing this or considering it. The committee reviewed the policies at other MRFs and would be happy to weigh in on the process devised for the publication and computation. Other public facilities pay promptly within a month or so, Boulder County should do the same (current data suggest BC payments lag from 1-3 months after delivery)
- Boulder County should consider paying separately for separated (non-single-stream) streams. We are losing commercial tons because it is cost-effective for haulers to run targeted routes and do basic separation and market outside the County's MRF.
- The County may need to consider identifying whether arrangements should be made with some haulers.

[1] We understand the County has recently been working on this and a process is being / has been developed to publish rebates; this was raised aggressively in the Spring and we are glad to see action on this topic.
[2] Dedicated dollars should be put to this, with a budget of $x per ton set aside as an operating cost (perhaps specified as a share of the revenue line), and it should vary to some degree to reflect the market.

Figure 1: Comparison of Area MRF Prices Per ton (Source: Green Girl)

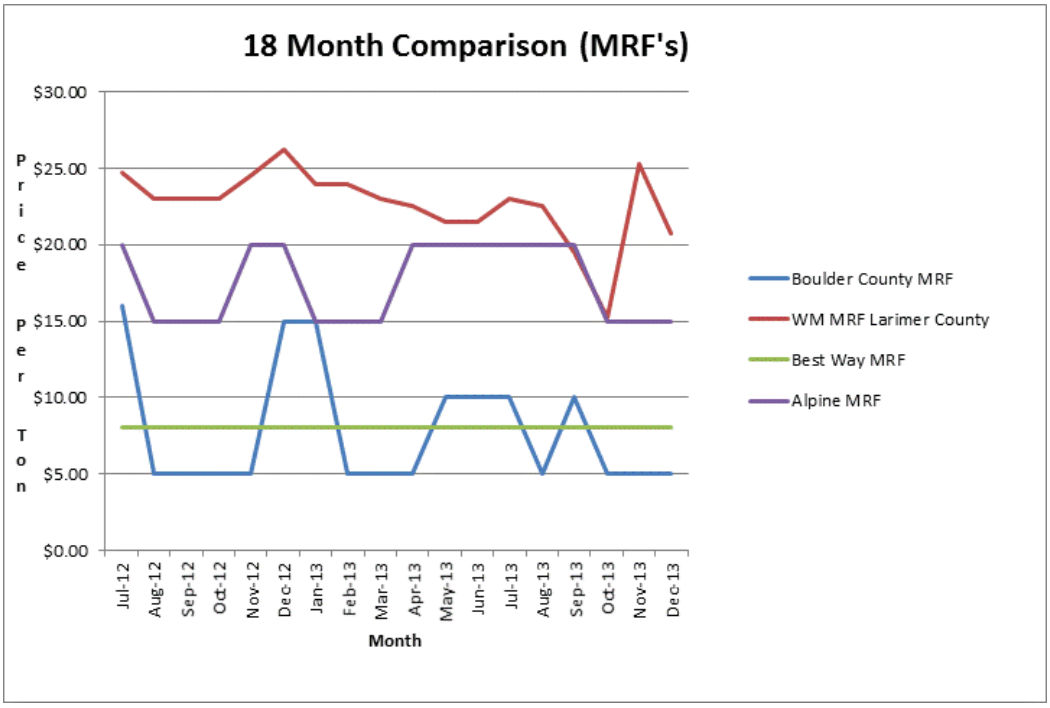

Figure 2: MRF Payment Practices Summary (Source: Green Girl)

MRF Payment Practices Comparison Chart 2014

updated Sept 22nd, 2014

	MRF	Payment Procedure	When they Pay for Materials	Payment Information	Posted Payments July:	Contact:
1	Boulder County MRF (1901 63rd Ave in Boulder)	Check to Haulers via Mail	On average: payments come 1-3 months after delivery	Boulder County does not post what they are paying for materials anywhere. Haulers do not know what they will expect for material.	As of September 2014: posted SS payments on Website: www.bouldercounty.org/env/recycle/pages/recyclingrebates.aspx	Jeff Callahan: 720-564-2221
2	WM: Larimer County MRF (5887 S. Taft Hill Road in Fort Collins)	Check to Haulers	They pay 1 month after receiving materials from haulers	They post Gate Payments on a phone line (970) 226-1101 and at the scale house.	commerical/residential SS= 20.50/ton, OCC=45/ton, Loose OCC=30/ton, News=10/ton, OP=80/ton, Aluminum=.35/lb	Connie: 970-226-1101
3	International Paper (500 Oak Street Wheat Ridge)	Check to Haulers	They pay 1 month after receiving materials from haulers	Each customer would call a 'rep' and get a quote for materials. Payments depend on volume and quality and grade of material. Is it picked up or delivered.	A call to main office to get pricing for that month.	Tameem Kaizer: 720-237-7353
4	Best Way Disposal MRF (650 Santa Fe St Colorado Springs)	Check to Haulers	They pay 1 month after receiving materials from haulers	They post to come in to get a 'scoop test' - section of material dropped that is analyzed for pricing	SS=$6-$8ton based on a scoop test of the material brought that month, OCC=scoop test based off 50% SW low)	Alica Archbald: 719-661-4844
5	Rocky Mountain Recycling (4744 Forest Street, Unit L Denver CO 80216)	Check to Haulers	They pay 1 month after receiving materials from haulers	Each customer would call a 'rep' and get a quote for materials. Payments depend on volume and quality and grade of material. Is it picked up or delivered.	Phone call to Rep for pricing - they follow OBM pricing. They follow the market very closely.	Tameem Kaizer: 720-237-7353
6	Alpine Waste MRF (7475 E 84th Ave Commerce City)	Check to Haulers	The pay 5 weeks after the month materials are received.	Contracts established with each hauler depending on grade of material and volume dropped.	Phone call to Kim to determine what they are paying this month:Brent quotes materials. Based on PPI SW #.	Kim Cameron: 303-656-6773
7	Waste Management Denver (Greenwood Village CO)	Check to Haulers	They pay 1-2 months after depending on contract	Contracts established with each hauler depending on grade of material and volume dropped.	You can call them to get pricing if you haul over a certain tonage to them monthly.	Scott Hutchings: 303-917-7068

2. **Have haulers and communities bringing tons (or who used to bring tons) been bringing more or less, and why? Are there opportunities or barriers?**

Interviews with a number of haulers and some communities has identified a number of opportunities and barriers.

Figure 3: Key Results Summary of Hauler and Community Interviews

Opportunities / Pros	Barriers / Cons
• **More tons available**: Some haulers outside Boulder County might be interested in bringing tons to the facility because it is not run by a competitor hauler. (As a corollary, it was hypothesized that more tons might come to the facility if it wasn't run by a potential competitor in the Boulder area). • **More tons available**: The MRF has arrangements with some other facilities to have tons come when they are busy – could that be extended?	• **Economics**: The payments (level, uncertainty, and delays) are a real barrier to bringing tons • **Commercial**: no incentive to bring separate / semi-separated commercial tons because they only pay the mixed single stream gate fee – the stream is worth more. The County should consider the lower marginal processing cost. • **Finances / Costs**: The facility costs are higher than industry average (industry $60-70/ton; BoCo about $95-$100). • **Finances / costs**: The finances – with operator, County, etc. are a bit unclear, and it is unclear if the County transfers funds or takes overhead fees beyond what might make sense. • **Finances / Costs**: Operating a facility with one shift may not be optimal; they could probably improve the economics with two shifts (some in Denver operate 2 shifts at 10 hours each).

Recommendations:

- Improve the payment situations as mentioned in Question 1
- Advertise to independent haulers in the near-county area that might currently only have an option to bring materials to a competitor
- Consider making overflow arrangements with additional MRFs if possible.
- Identify why operational costs are about $30/ton too high for the market.
- Review all costs in the operation of the MRF and make them transparent whether it is attributable to the direct operation of the MRF or has some other purpose. . Where possible, limit costs to those actually attributable in order to 1) attract more tons, and 2) improve the economics
- At a point at which additional tons can be attracted to justify a second shift, initiate a second processing shift.

3. **Are there specific opportunities to increase the tons at the facility? How much? Are there regulatory ways to drive more tons to the facility? Can the facility handle that?**

We identify several possible sources for substantially increasing tons:

- Boulder County Tons: Improve the economics and pay better gate fees to attract Boulder County haulers not currently bringing materials to the facility.
- Outside Boulder County Tons: Improve the economics and pay better gate fees to attract outside Boulder County haulers that might prefer to bring tons to a non-competitor's facility
- Current Commercial Tons: Improve the payments for non-residential (commercial) streams to attract those tons from haulers in the area.
- Mandatory Commercial: Encourage the City of Boulder (and potentially other Boulder County communities) to mandate commercial recycling.
- Directed tons: Communities in the County could direct tons to the facility if they undertake widely-advertised competitive contracts for collection service (most easily, residential).[3] We have not finished investigating whether there are other ways to get tons directed to a facility.
- More from Current streams: To get more from the current (residential) recyclers, Boulder County could either encourage (or conduct) cost-effective social marketing, or continue to encourage communities without PAYT to adopt it, increasing recycling.

We did not feel we could count "moral suasion" (communities or haulers bringing tons out of the goodness of their heart instead of based on economic decisions) as a realistic and lasting method of getting tons to come to the facility.

We have not had the ability to estimate these tons, with the exception of the last three sources.

- Mandatory Commercial: If the City of Boulder mandated commercial recycling, the facility might see as much as 10,000-15,000 new tons.[4] If they mandate it for the top business sizes, the tonnage could be estimated from the share of employment covered by those firms. For every town of 10,000 that mandates recycling, it could bring an additional 1,500 or more tons (assuming the firms did not self-haul directly, and assuming they do not recycle as aggressively as Boulder's commercial sector currently).
- Directed tons: For every community of 10,000 persons, the additional tons to the facility could be 2,700 tons / year.[5]
- More tons from current: If PAYT is adopted in a community of 10,000 persons, the recycling should increase 300-400 tons / year.[6] Naturally, those tons would have to be directed to BoCo to have a substantial impact on BoCo's tonnage.

We were told that the facility was built to manage about 50,000 tons with one shift (there was some debate, and the figure may be as high as 72,000 tons), and the facility is currently processing about 45,000 per year. If capacity is the higher figure, there is space for more tonnage. If the lower figure is the capacity threshold, there may be other options. There was strong concern expressed about staffing

[3] NOTE that under the current gate fee system, this will likely result in higher rates or bids, because haulers would be able to get higher revenues from their own facilities or other area facilities.
[4] City waste composition, City commercial tons estimate, times 90% capture. Excludes tons already recycled from the commercial sector. Pulled from computations from a zero waste modeling exercise by SERA for Boulder.
[5] This assumes 0.9 tpy per capita (from RCAB survey) times about 30% recycling in Boulder County excluding Boulder, times a population of 10,000.
[6] This assumes 0.9 tpy per capita (from RCAB survey) times .6 (accounting for 40% recycling county wide already), times 0.06 for 6% recycling induced by PAYT, times 10,000 persons.

for 10 hour shifts (fatigue was stressed) although at least one private facility in the region uses that method (presumably that could handle about 12,500 tons at current production) without substantially affecting concerns about O&M time, etc. It was indicated that adding a second shift would be do-able.

One concern that was strongly expressed is that operations are currently being negatively affected by increased cardboard in the system. The cardboard piles up and needs to be addressed after-shift, complicating scheduling of a second shift.

Recommendations:

- Undertake efforts for each of the methods for increasing tons listed above.
- Consider investing in the baler to reduce the cardboard problem, making commercial a more viable option, and eliminating its role in making two shifts difficult.
- Be ready to embrace a second shift, which can process more tons, and should spread overhead costs over more tons, lowering the cost per ton.
- Before considering whether to add additional optical sorters in the plastic lines, consider the costs, benefits, and sales value of the materials, and compare to the ROI from other investments. If it passes, this may allow for additional material streams to be accepted and reduce worker fatigue.

4. **How do BoCo MRF costs compare with other facilities? County? Operations? Are there changes that would improve the economics?**

Based on figures provided by an update in the RCAB meeting, Boulder County's annual budget for the MRF, divided by the tons processed, results in a cost-per-ton of about $95-$100 / ton.

We interviewed a number of facilities around the country, and talked to MRF operators. The "going" cost-per-ton for single stream MRFs is $60-$70/ton, with some less.

These figures indicate the operating costs at BoCo MRF are 50% higher than market.

When we asked for more detailed information about the MRF costs, Eco-cycle and the County did not provide the information.

Recommendations: The goal is to find and eliminate $30/ton in cost savings or revenue augmentations to bridge the gap between current costs (about $95/ton) vs. market standard (about $65/ton)..

- Provide the committee with detailed budget data from the County MRF and Ecocycle MRF operations so we can analyze costs of operation
- Work with the subcommittee to conduct a line analysis of the budgets (County and Ecocycle)
- Define each line item for the BCMRF's budget and identify which are actually attributable to the facility's operation. Identify what isn't, and translate it into cost per ton, and determine if it can and should be eliminated. Any that remain – based on policy – should be clearly identified and discussed with the RCAB, for transparency.

- Operational considerations: Consider changing the operations – if cleanest material doesn't capture a premium on the market, do not process to "cleanest", but to spec. If a new piece of equipment will make things run better but will not provide a sufficient ROI, do not invest. The Baler for cardboard may be a critical production point; but the additional processing upgrades should be carefully examined.
- Contractual considerations are addressed below.

5. Are there changes to incentives or contracts that should be considered for future MRF operations?

The contract should be closely examined for incentives, revenue-sharing, price floor, transfers, payments for things other than operation (education, etc.) to make sure all elements are in the best interest of the County – with a goal to identifying the least expense for the facility. If the County opts to pay for education and other elements beyond operation, that can be done if there is policy concurrence, but should be identified explicitly in the contract.[7]

Most importantly, the next contract should be revised and updated to include clauses that are in the County's interest, and it should be widely and publicly bid. We interviewed public entities with operational contracts for facilities (mostly MRFs), but we have much more work to conduct to develop recommendations. Initial feedback suggests the types of considerations shown in Figure 4. Note that we have not yet assembled the recommended clauses from other contracts.

Figure 4: Considerations in MRF Operating Contracts – partial list

• Review of revenue and risk-sharing options available. Whichever type of revenue calculation selected, the City should be certain that all of the details are clearly defined in their agreements. Operators typically turn over 50-80% of the revenue to the agency. • Whether the processing fee should be reduced because of the depreciated facility value; • Whether additional educational activities, such as an educational center at the facility, will be paid for by the operator; • Whether to reduce residual levels below the 5 percent standard used in many older contracts; • Will contract provisions allow for future material additions or changes in how recyclables are delivered to decrease community program costs (e.g. if a community implements single-stream collection to reduce collection costs); and • Which party should pay for repairs and upgrades — the existing facility operator or the community? • Are repairs necessary because of normal wear and tear or a result of relaxed maintenance? • Have adequate records been kept on maintenance and repairs?	• Knowing the composition of a municipality's recyclable stream is important in single stream systems. Consider requiring physical sorts of random loads delivered to the MRF. In these composition sorts, • Calculating the volume contamination or residue is important to ensure the municipality a greater degree of cost control. • How residue is allowed to factor into the commodity calculation can significantly impact the municipality's revenue received or payment expected. The City should establish this element in advance and ensure that residue has no monetary value in the rate calculation. • If a fixed rate option is used, the City should build in some protection measures. Short term contracts with mutually renewable options are one way of safe guarding the jurisdiction and being fair to the contractor. • In sliding scale agreements, the rates may be tied to published sources of market activity for the geographic region or on actual prices negotiated by the local processor. It is recommended that the City opt for published rates to ensure full disclosure and to provide an incentive to the local operator to obtain the best prices possible for the material delivered.

[7] A couple committee members felt that if tight times mean budgets are lower, and paying for education efforts is at the expense of, for instance, hauler incentives that will decrease tons, these tradeoffs should be able to be considered explicitly.

• MRF contracts also should examine revenue sharing. This allows MRF operators to "lock in" future material prices using financial hedging futures. When negotiating the contract, community decision-makers should understand how hedging contracts can translate into better revenue sharing for the community. • Should the contract allow for ownership facility purchase and operator ownership options • Establish material recovery preferences (if any) in the operating agreement	• A hybrid rate agreement includes components of fixed/flat rates and also the sliding scale approach. This is one of the fairest approaches to revenue sharing. It offers the MRF assurance that it can cover the cost of processing during the course of the contract. It also provides the municipality with a greater direct share of the revenues. • Establish MRF operator compensation with agency goals in mind • Prepare for changes in composition and quantities / build it in

The committee looks forward to reviewing the contract clauses, and will continue to interview other facilities to find the best practices in contracts.

6. Are there opportunities / places to achieve higher revenues?

One subject we discussed in this topic area was bulky metal recycling. The Boulder County drop—off used to take this material, but stopped due to liability, safety, and other concerns. The tons are fairly high,[8] and the revenues are strong, but we recognize the problems and respect the County's decision, even though it is a revenue loss to the County. Longmont undertook efforts to collect these materials at their site (staffed) and that option seems to work well. Ecocycle has taken this material at ChaRM for some time, and presumably those tons increased when Boulder County's drop-offs stopped.

The county may wish to consider the change mentioned above – taking commercial tons at a higher gate fee.

Summary:

There are multiple opportunities to increase tons at the facility. One core commitment must be to recognize that the facility must make it attractive for haulers to bring materials to the facility by providing a competitive gate fees. This should be a core part of the budget, not treated as a residual, or the facility cannot count on the tonnage it needs to operate.

Second, the costs per ton to operate the MRF do not compare favorably to other facilities, and seem to be perhaps 50% too high. Finances must be made more transparent, and costs that are not part of the operation of the facility need to be identified and separated, and policy decisions made. As part of lowering costs, the contract should be closely examined to make sure the next version includes the "best practices" in operating contract language and is crafted in the best interest of the county. The RCAB would very much appreciate weighing in on those elements early, and the contract should be explicitly bid and let competitively in the future.

Finally, if these issues are addressed, we see many opportunities for new tons to the facility. We will work as fast as possible to complete the outstanding analyses and report back to the RCAB.

[8] We do not currently know the tons and revenues, but will continue to follow-up on this.

Boulder County
Composting Capacity Analysis

FINAL REPORT

October 2014

Prepared for
Boulder County, Office of Sustainability
Boulder, CO

Prepared By:
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INTEGRATED WASTE MANAGEMENT CONSULTING, LLC
Nevada City, CA

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EXECUTIVE SUMMARY

The following report presents findings of a compost capacity analysis conducted by IWMC for the County of Boulder. The primary objective of the report was to document the capacity of the compost facility being operated by Western Disposal (Western) at a site in the City of Boulder. The report also looks at the existing waste characterization, at waste reduction programs which would potentially reduce available feedstock, analyzes the potential for the City of Boulder Wastewater Treatment Plant to accept municipal organics for digestion, and presents an order-of-magnitude cost estimate for a stand-alone compost site.

Compost Capacity

Based on an analysis of the physical composting capacity of the Western site, there is additional capacity, both existing and potentially available with minor pad improvements (the operating pad would need to be improved to meet stormwater and drainage requirements). Western currently operates on an improved pad of approximately 6.41 acres. They processed almost 10,000 tons on this pad in 2013. The entire site is 10.71 acres, so were Western to expand the pad, they could expand the site's capacity. Also, Western currently manages the facility relatively moderately (2 complete compost cycles per year). Increasing the management intensity of the operation would also increase the site's capacity. IWMC has independently verified the available compost capacity based on windrow shape and retention time (see Appendix A).

However, while there is sufficient physical capacity at the Western Disposal site, that capacity is only available to Western's customers. Currently the majority of yard trimmings and food scraps from residential and commercial sources are hauled to the Western Disposal composting site located near Butte Mill Road in Boulder. Because the facility is privately owned and operated, Western Disposal can dictate who has access to their facility. Other haulers, like Eco-Cycle, which collects roughly 3,500 tons of commercial food scraps in Boulder County, does not access the Western site and instead hauls material to a transfer facility located at the old Stapleton airport (approximately 24 miles), where it is consolidated and hauled to a site outside of Keenesburg (approximately 41 miles) for composting. The City of Lafayette recently went out to bid for collection of residential organics and selected Republic Services. However, rather than hauling the material to the Western Disposal site, Republic will be hauling the same route that Eco-Cycle now hauls, to Stapleton, followed by a transfer to A-I in Keenesburg. A map showing the relationship of existing organics processing facilities in the project area is shown as Figure 1. Clearly there is an abundance of organics processing capacity in the region.

Waste Characterization

The Waste Characterization completed in 2010 identified significant organics remaining in the waste stream. This is consistent with similar studies IWMC is familiar with across the US. Data provided by Western Disposal (and to the extent possible verified by IWMC) indicates that

there is some potential growth in organics diversion expected in Boulder County in the next 3 to 5 years. Tables ES-1 and ES-2 show an estimate of the current and potential future organics collected in Boulder County. Table ES-2 provides an estimate of those tons that will be directed to the Western site. By Western's own estimates, the volume of material needing to be processed may double in the next three to five years.

The least reliable data are estimates of commercial organics growth. Currently both Western Disposal and Eco-Cycle (the two biggest, though not the only, haulers of commercial organics in Boulder County) average about 8 tons per commercial food scraps account per year. Volumes of organics generated per commercial account vary widely. However, the City of Boulder is planning on implementing mandatory commercial and multifamily organics, which will have an impact on the volumes of organics collected in Boulder County.

Waste Reduction

There are a number of non-centralized ways to manage organics (backyard and on-site composting); while these are excellent and cost-effective ways of managing municipal organics, they rarely have significantly high participation rates to affect municipal collection programs. Further those individuals or entities that might be backyard composting may have been doing so prior to the 2010 waste characterization, so the tons they are managing may already be excluded from those estimates.

No significant on-site composting projects were identified in this study. Were a large generator to adopt an on-site digestion project, those tons might be removed from the capacity equation, but this does not seem to be a popular option in the Boulder region (and this would further reduce the capacity requirements of the Western Disposal Compost Site).

Table ES-1. Current and Potential Tonnage of Organics Collected in Boulder County.

Jurisdiction	Currently Collected (tons)	Potential Future Collections (tons)
Residential		
Boulder	4,035	5,086
Lafayette		1,849
Longmont		5,457
Louisville	1,126	1,423
Superior		781
Boulder County Unincorporated & Towns	2,253	4,640
Subtotal	7,414	19,236
Commercial	5,431*	6,593
TOTAL	12,845	25,829

*This includes all commercial food scraps currently collected by Western Disposal and Eco-Cycle, (including the University of Colorado).

Table ES-2. Current and Potential Tonnage of Organics Collected by Western Disposal.

Jurisdiction	Currently Collected		Potential Future Collections	
	Residential (tons)	Commercial (tons)	Residential (tons)	Commercial (tons)
Boulder	4,035		5,086	
Lafayette	0		0	
Longmont	0		5,457	
Louisville	1,126		1,423	
Superior	0		781	
Boulder County Unincorporated and Towns	2,253		4,640	
TOTAL	7,414	1,906	17,387	2,307**
TOTAL TONS TO WESTERN	9,320		~20,000	

*This includes the maximum tons that potentially could be delivered to Western Disposal only. There is no guarantee, for example that the City of Longmont's tons will eventually be delivered to Western Disposal once Longmont implements a separate collection program. Longmont's tons are included to show a likely maximum.

**This number assigns the estimated commercial tons potentially collected in Boulder County @ 8 tons per account, per year and proportionally assigns them to Western based on the current proportional split with Eco-Cycle.

Co-Digesting Food Scraps At The City Of Boulder WWTP

Although the City of Boulder Wastewater Treatment Plant (WWTP) is interested in potentially co-digesting food scraps in one of their digesters, the fact that there is little to no excess capacity (i.e., an existing, vacant digester) at the facility would mean that costs to implement this alternative would be significant; the existing energy production infrastructure would also likely need to be upgraded to accommodate municipal food scraps. In addition, WWTPs are limited as to the type of food scraps they can manage, which may be incompatible with how (and what types) of food scraps are currently collected (specifically food-soiled paper and compostable service ware).

Potential New Facility Costs

Capital

An order-of-magnitude estimate of capital costs associated with developing a roughly 30,000 tons per year composting facility was created. Developing a new, stand-alone compost facility might require capital in excess of $4 million, not including site acquisition costs. These costs are meant to be an order-of-magnitude estimate of capital costs. Other site development work, different equipment choices and other site development costs (like stormwater management, fencing, initial permitting, etc.,) are not included in this estimate.

Operating and Maintenance

Estimating operations and maintenance costs for a hypothetical facility is more challenging than developing capital costs. Many of the key operating costs like labor, fuel, and maintenance can be highly variable. Labor costs (particularly benefits and worker's compensation) will vary whether the facility is privately operated or publicly operated. For this order-of-magnitude estimate a range of $400,000 to $700,000 per year is presented. Operating and maintenance costs will vary substantially based on the feedstock, for example, if the City of Boulder implements mandatory commercial and multi-family organics collection as proposed in the 2014 Zero Waste Evaluation Study the facility will likely need to add an elevated picking station, additional labor to sort contaminants, and most likely a building to conduct the sorting in. None of these costs are included in this estimate, but would increase both capital and operating costs.

Figure 1. Relationship of Available Organics Facilities near Boulder, Colorado.

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INTRODUCTION

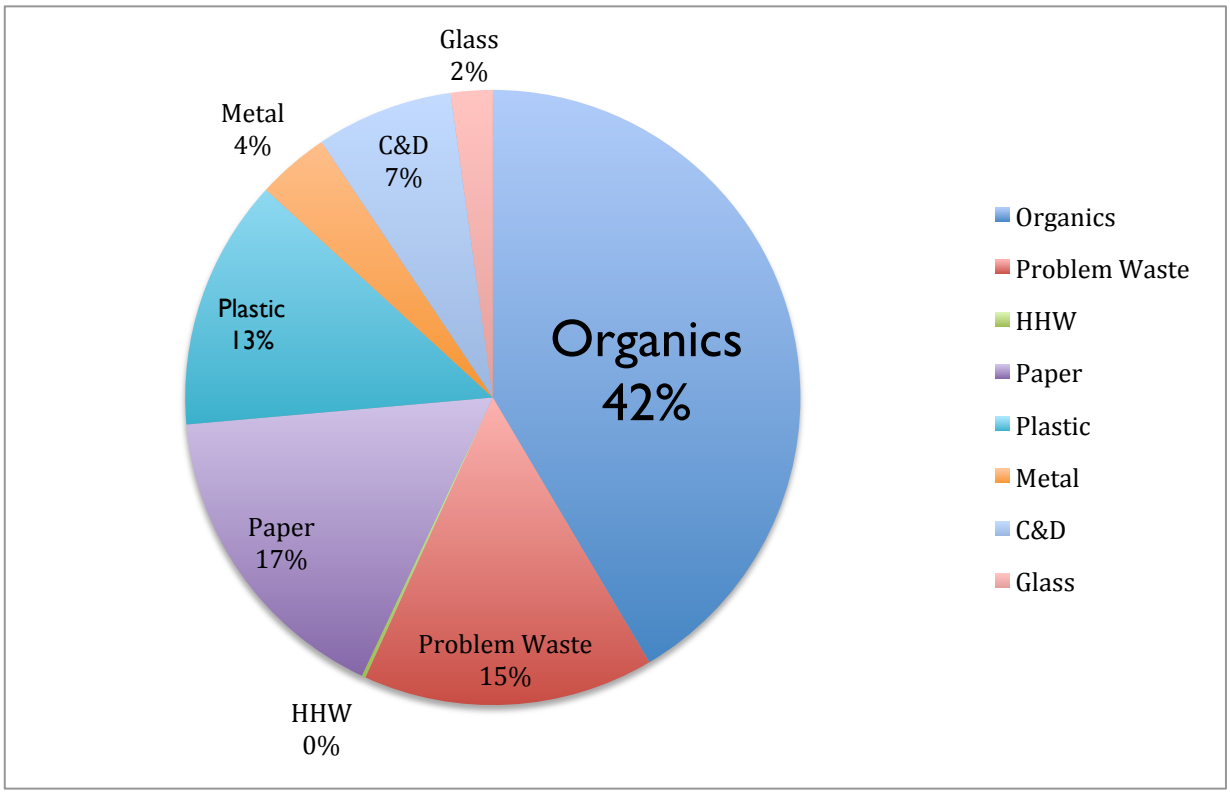
Boulder County has a number of organics processing facilities within a reasonable hauling distance of the centroid of Boulder County. The primary facility is a composting facility operated by Western Disposal. This facility handles the majority of the organic materials generated in the City of Boulder and in Boulder County. Because this facility is privately owned and operated, it is not available to some haulers. Those haulers not utilizing the Western site are currently hauling materials to a transfer facility near the old Stapleton airport (outside of Denver), before the materials are transferred to a composting site near Keenesburg. However, there is new and expanding capacity in the region which will also draw organics from Boulder County. A-1 Organics' Keenesburg facility is already receiving organics from Boulder County. Their Eaton site was recently permitted to accept food scraps and is a new option for commercial organics, particularly in the northern part of the County. Finally, a large manure and food scraps digester is currently being constructed near LaSalle, which is also expected to compete for Boulder County organics.

This report examines the waste characterization for Boulder County, makes estimates of the likely volumes of organic materials being separated for composting by various entities, and looks at the capacity of the only in-county composting option. The report also briefly examines waste reduction techniques which may impact the need for compost capacity in Boulder County. Finally, the report looks at the cost of duplicating the in-county compost capacity of the existing site (as a stand-alone site).

WASTE CHARACTERIZATION REVIEW

A countywide waste characterization study was conducted in 2010[1]. This study estimated Boulder County's waste generation at 221,000 tons per year (Based largely on data reported from the City of Longmont, extrapolated for the entire County). The study further estimated that organics (a combination of yard trimmings and food scraps) comprised 42 percent of waste, or 91,692 tons. Clearly organics comprises a significant fraction of the Boulder County waste stream. Indeed food scraps and yard trimmings were the two most prevalent items in the residential waste stream and food scraps and compostable paper were the two largest categories in the "Industrial, Commercial, and Institutional" (ICI) sector. Figure 1 shows the relative percentages of each category, highlighting the organic fraction.

Figure 2. Waste Characterization for Boulder County.



[1] 2010 Waste Composition Study, MSW Consultants, December 2010.

The waste characterization is consistent with other, similar waste characterizations IWMC has reviewed. We echo the need for ongoing waste characterization studies to understand variations and to start from a benchmark. These types of studies tend to get better (more accurate) and more useful the more frequently they are conducted.

Table 1 shows the populations of the major communities in Boulder County. Table 2 shows a rough estimate of the percentage of organics attributed to each community. These are estimates of waste disposal, all based on the 2010 waste characterization.

Table 1. Population of Boulder County Communities.

Community	Population
Incorporated	
City of Boulder	101,808
City of Lafayette	25,733
City of Longmont	88,669
City of Louisville	19,074
Unincorporated & Towns	
Town of Erie	19,722
Town of Jamestown	281
Town of Lyons	2,092
Town of Nederland	1,478
Town of Superior	12,782
Town of Ward	154

Table 2. Proportional Organics Generation (Residential).

Jurisdiction	Residential Generation (tons)	Percentage of Population	Estimated Residential Organics Disposal (tons)	
			Yard Trimmings @ 12.9%	Food Scraps @ 13.1%
Boulder	~44,552	43%	5,747	5,836
Lafayette	~11,261	11%	1,453	1,475
Longmont	~38,803	38%	5,006	5,083
Louisville	~8,347	8%	1,077	1,093
Total	102,963	100%	13,282	13,488

Extrapolating from the 2010 waste characterization, there may be roughly 27,000 to 34,000 tons of residential organics potentially available for composting in the four largest cities in the County. However, no collection program is 100 percent effective at capturing these organics. Looking at the numbers a different way (and including the commercial organics), there may be as many as 61,500 tons of organics *potentially* available in the entire County for composting (or digestion) (see Table 3). The table pulls out the total *potentially* compostable or digestible organics from the 2010 waste characterization. However, some of these tons will be very difficult to divert (it is not expected that any of the towns will be developing source-separated organics collection programs in the near future).

Table 3. Estimate of Total Potential Organics, Boulder County.

	Residential Tons	ICI Tons	TOTAL
Mixed Yard Trimmings	13,284	3,956	
Branches	1,624	1,140	
Leaves	5,366	5,105	
Food Waste	13,539	17,415	
TOTAL	33,813	27,616	61,429

So the total volume of organics potentially available needs to be to be measured against realistic participation and capture rates, available programs, and competing disposal alternatives. The following is a summary of programs in local communities. Western Disposal has estimated residential organics collection based on their records collecting this material in the City of Boulder, unincorporated Boulder County, and in Louisville. The volume collected ranges from 437 to 607 pounds per service address per year.

A recent study in Alameda County (California) looked at participation rates in commercial organics programs. Participation rates among commercial generators varied from 0% to 88% participation. This data is presented in Table 4. The large range of experience highlights the challenges of predicting participation among commercial generators. It is important to note that while commercial organics collection is not currently mandatory in Alameda County almost every jurisdiction in the county offers some type of a financial incentive to encourage participation. Both Boulder County and the City of Boulder offer modest incentives to encourage organics collection and zero waste practices. These incentives are summarized in Table 5. The other challenge is the range of food-generating businesses in Boulder County from small sandwich shops to large grocery stores. This makes it extremely challenging to generalize regarding volumes to be set-out. It is unknown exactly how much suitable, currently uncollected, commercial organics may be available.

Another recent study[2] reported commercial organics participation rates in EPA Region 5. The reported average commercial diversion rate was reported to be 21 percent, with the highest being 42% and the lowest 8%. Table 4 highlights the Alameda County data.

Table 4 Commercial Organics Participation Rates in Alameda County, CA

Jurisdiction	Number of Food-Generating Businesses	Participating Food-Generating Businesses	Percentage of Participating Food Generating Businesses
Alameda	308	218	71%
Albany	98	42	43%
Berkeley	707	241	34%
Dublin	177	104	59%
Emeryville	153	Unk.	Unk.
Fremont	655	70	11%
Hayward	725	94	13%
Livermore	342	119	35%
Newark	233	4	2%
Oakland	1,903	Unk.	Unk.
Piedmont	16	14	88%
Pleasanton	381	0	0%
San Leandro	243	120	49%
Union City	239	45	19%
Castro Valley SD	151	45	30%
Oro Loma SD	277	9	3%
TOTAL	6.608	1,125	17%

Other sources use a range from 20 percent to 75 percent. The City of Seattle expects to reach 75 percent commercial organics participation once their (soon to be approved) mandatory organics program is fully implemented.

[2] *"Best Management Practices in Food Scraps Programs"*, Econservation Institute, February 2012.

Table 5. Incentives for Organics Collection and Zero Waste in Boulder City and County.

City of Boulder Compost Incentive
Organics collection is available for businesses through local haulers. The City offers businesses an incentive of $2.50 per subscribed cubic yard of organics collection.

City of Boulder New Business Zero Waste Start-Up $250 Rebate
For any new commercial recycling and/or organics collection, the City will rebate up to $250 towards the purchase of interior bins, compostable bags, compostable service ware, and related items. An advisor is available to review a businesses needs and assist in the ordering process.

Boulder County $150 off of Zero Waste services coupon
Boulder County Resource Conservation Division reimburses businesses $150 towards new "Zero Waste Services" (which could include organics collection). This is done by providing a $150 "off" coupon, the coupons are redeemed by establishing new zero waste services.

City of Boulder. The City of Boulder (Population 101,808) has the most extensive organics collection program, with an estimated 23,261 single-family homes currently having curbside organic collection. An unknown number of commercial establishments also participate in food scraps collection, either via Western Disposal or Eco-Cycle. It is challenging to estimate the actual numbers of businesses participating, because many businesses in Boulder County share a trash, recycling or organics bin (i.e., there can be multiple businesses, but only one "account"). According to City of Boulder records for 2013, Western Disposal collected commercial organics (not including Multi-Family accounts) from 201 commercial accounts for a total of 1,589 tons; in the same period, Eco-Cycle collected 1,151 tons from 147 accounts. Both of these average out to slightly less than 8 tons per account. The City of Boulder has developed a Zero Waste Plan and a recent evaluation of that plan recommended implementing mandatory commercial and multifamily organics collection. If fully implemented, this will have an impact on the amount of food scraps collected in the County.

Boulder County. Boulder County (Population 61,982) represents residents in areas that Western characterizes as North, South, and Mountain. According to Western, approximately 19,346 single family homes in the unincorporated area (and townships) have curbside organics collection, with the majority of this being in the designated area of "Boulder County South", which surrounds the City of Boulder.

Table 6. Current Tonnages of Material Collected for Composting, Boulder, Colorado.

	Residential (tons)	Commercial (tons)
City of Boulder	4,035	
City of Louisville	1,126	
Boulder County Unincorporated	2,253	
Western Disposal		1,906
Eco-Cycle		3,525
TOTAL	7,414	5,431

City of Longmont. Longmont (Population 88,669) is the largest city in Boulder County with no curbside organics collection (they do offer brush and food scraps drop-off). The City provides municipal garbage collection and has plans to offer residential organics collection in the near future. The City of Longmont does not collect commercial waste and does not have any plans to provide commercial organics collection.

City of Lafayette. The City of Lafayette (Population 25,733) recently went out to bid for a hauler to collect residential organics. However, this bid will only cover those residents not within a Homeowners Association. In the short term, Western estimates that approximately 5,434 homes will have access to curbside organics, with an additional 3,023 homes coming online in the next 5 to 10 years.

City of Louisville. The City of Louisville (Population 19,074) currently provides approximately 5,138 single family homes with curbside organics collection. Western Disposal believes an additional 1,168 homes may come on board with curbside in the next 5 to 10 years.

Town of Superior. Superior, (Population 12,782) does not currently provide organics collection, nor were any plans identified to add this service in the future. However, Western assumes 781 tons might be collected (predominantly via commercial accounts) in the next 3 to 5 years. Superior has been promoting the use of under sink disposers, which could potentially reduce the volume of food that needs to be collected.

University of Colorado. One of the major generators in Boulder County is the University of Colorado (CU), which collects organics from its three main food service establishments (the residence halls/housing department, the student union, and the athletic department) and also collects wood from campus operations. The woody material tends to go to Western Disposal,

whereas the approximately 700 tons of food scraps goes to A-1 Organics via the transfer facility near Stapleton.

Tables 7 summarizes the current and the projected tonnage of organics collected in Boulder County. According to Western's records, they collected 7,432 tons of organics from the residential sector and 1,906 tons from commercial (52 businesses) for a total of 9,454 tons. In 2013, they produced roughly 20,000 yards of compost (from slightly less than 10,000 tons incoming).

Table 7. Projected Tonnage of Material Collected for Composting, Boulder, Colorado.

Jurisdiction	Projected Residential* (tons)	Projected Commercial (tons)**	
		Food Service Establishments***	Tonnage (@8 tons per account)
City of Boulder	5,086	402	3,216
Longmont	5,457	183	1,464
Lafayette	1,849	56	448
Louisville	1,423	51	408
Superior	781	24	193
Boulder County Unincorporated & Towns	4,640	108	864
TOTAL	19,236	824	6,593

* Residential Projections from Western Disposal.
** Commercial projects are based on reported collection tons per account from Western and Eco-Cycle. The University of Colorado (a major generator) may be inflating these numbers.
***These numbers may be food service "accounts" versus "food service establishments" as some food service businesses in Boulder County share one service account for multiple businesses.

The 2010 waste characterization may contain the most reliable waste characterization data for the entire county. This report has been supplemented with actual 2013 tonnage reports from the City of Boulder, the Zero Waste Program Evaluation and Western Disposal's Summary of Waste Sort Results (2013). In other cases estimates of capture rates have been made. However, based on the 2010 characterization, the total tonnage of organics disposed in Boulder County was 91,692 tons. Waste characterizations necessarily make generalizations about material types and include materials as "organic" which are nonetheless not typically accepted at commercial composting or anaerobic digestion facilities. By adding the tonnages of "mixed yard waste" (17,721 tons); "branches, limbs, etc." (2,765 tons), "leaves" (10,471 tons); and "food waste" (31,055 tons), there are a total of 51,562 tons of organics potentially suitable for processing in Boulder County. Breaking these numbers down further, the 2010 study estimated that residential organics comprised a total of 49,394 tons and commercial comprised 42,104 tons. If you break the residential organics stream down into its potentially *capturable* component parts you get (mixed yard waste, 13,284 tons; branches and limbs, 1,624 tons; leaves, 5,366 tons; and food scraps, 13,539 tons) there are 33,813 tons of residential organics available. If we break down the total commercial "organics" into categories potentially recovered for processing (i.e., mixed yard waste, 3,956 tons; branches and limbs, 1,140 tons; leaves 5,105 tons; and food waste 17,415 tons) there are 27,616 tons of commercial food being disposed that could *potentially* be recovered for composting.

As shown in Table 7, Western Disposal has projected their expectations for additional residential organics diversion. Western expects an additional 19,236 tons. If in fact there are an additional 33,813 tons of disposed organics, then Western expects an additional 56 percent of diversion from the residential sector. As mentioned elsewhere in this report, estimating organics collection participation within the commercial sector is more challenging. Table 7 shows one method of projecting additional organics tons. The average tons collected per account by both Western Disposal and Eco-Cycle is slightly less than 8 tons per account, per year. Multiplying this number by the number of accounts provided in Western's estimate, Boulder County might expect an additional 6,593 tons. If there are 27,616 tons of potentially available commercial organics tons then this methodology is projecting an additional 24 percent recovery. Which is close to what the City of Seattle is projecting to collect based on implementation of their mandatory commercial food scraps collection ordinance.

SURVEY OF COMPOSTING CAPACITY

To begin the process of understanding both existing and needed composting capacity in the Boulder County region, IWMC surveyed key stakeholders to assess opinions and subjective impressions of the need for additional composting capacity. Surveys included:

Western Disposal Staff
A-1 Organics Staff
Eco Cycle Staff
City of Boulder
City of Longmont
City of Lafayette
City of Fort Collins
University of Colorado Recycling staff

In general, most interviewees were well aware of the current status of organics collection in and around Boulder County. Some of the entities were in favor of Boulder County siting a new compost or transfer facility to handle the volume that Western was not managing in the County. Others understood the nature of competition and realized there might not be a significant need for additional compost capacity in Boulder County at this time.

The following is a summary of the existing compost and future digestion capacity in the project area. The relative location of these facilities is shown in Figure 1.

Western Disposal. Western operates a 10-acre windrow composting facility in the City of Boulder. The facility is primarily accessed by Western for its residential and commercial customers. A discussion of the capacity of this site starts on page 15.

A-1 Organics, Keenesburg. A-1 Organics – a regional composting company, has two composting operations in the area. The Keenesburg facility is a very large site, with the ability to process a wide array of organics. Material delivered to this site from Boulder County is typically transferred at a site near the Stapleton Airport before being trucked to Keenesburg. The use of a Doda "bio-separation" system (or similar) to remove contaminants may also have the unintended consequence of removing compostable bags and service ware delivered to this site, causing concern for some.

A-1 Organics, Eaton. The Eaton facility is the corporate headquarters for A-1 Organics was recently permitted to accept food scraps. This site now offers additional capacity, especially for organics originating in the northern part of Boulder County.

Heartland Biogas. Heartland Biogas is a large manure and food co-digester currently being constructed on a site near LaSalle, Colorado. While the facility is still being constructed, it is anticipated that it will target large generators of clean source-separated food scraps. A-1 Organics is under contract to supply food scraps to the facility. It is likely that this facility will source appropriate commercial food scraps from Boulder County and the surrounding area if possible, further diminishing the need for compost capacity in Boulder County. It is estimated that this facility will require 600 tons per day of suitable food scraps materials, or approximately 200,000 tons per year.

Colorado regulations for these types of facilities do not typically contain a specific capacity for a site, subject to limitations that may be imposed by a Certificate of Designation.

BACKYARD AND MID-SIZED ON-SITE COMPOSTING

While backyard composting is the most cost-effective and climate friendly manner in which to deal with residentially-generated materials, experience has shown that while a small percentage of residents will participate, not all residents will, making centralized collection and processing a necessity.

Some generators of organic materials choose to compost their own materials at their own site. While there are many benefits to this, there are also challenges. Many large generators who have considered mid-sized, on-site composting have not moved forward due to operational concerns and economies of scale. A recent study in King County, Washington found that although both schools and businesses were good candidates for on-site composting, though most businesses did not keep it up, especially if food scraps collection was available or would be available in 3 to 4 years. Schools were good candidates, but required ongoing training. Both types of generators reported a 7-year payback on purchase of the composting unit.

All of the entities interviewed for this report were asked if they were aware of any existing or planned mid-size on-site composting or anaerobic digestion operations. None were identified (though CU is, in the long-term, contemplating the possibility of on-site processing). This is important because there are a number of options available to food scraps generators and were a mid or large generator to implement an on-site program, it would reduce the volume of material potentially available to a Boulder County facility.

However, it is unlikely that any mid-size, on-site, or backyard composting efforts will significantly affect the need for curbside organics collection. Any projects that do develop will decrease the need for expanded capacity in the County.

ANAEROBIC DIGESTION AT THE CITY OF BOULDER WASTEWATER TREATMENT PLANT

There are a number of efforts across the country at select wastewater treatment plants (WWTPs) to accept both high strength liquids and/or municipal or industrial food scraps as a means of utilizing excess digester capacity while producing additional bio-gas. One of the most well-known of these projects is the East Bay Municipal Utility District's (EBMUD) project in Oakland, California. EBMUD receives food scraps from the City of San Francisco (and other sources) and co-digests them in one of their digesters. EBMUD originated this project as a way to utilize excess capacity in their digesters. Perhaps the key to this project (which is still considered a pilot project) is the existence of significant, built-but-currently-unused, digester capacity. Having the capital for the digesters already spent is one of the key factors in the economics of the project.

Since this ground-breaking project, a few other WWTPs have also entered into pilot projects to co-digest high strength liquids and food scraps, these include the Hyperion Treatment Plant run by the Sanitation Districts of Los Angeles County near Carson, California, and the Central Marin Sanitary District, near Novato, California. Other WWTPs have been developing capacity to take high strength liquids, like Fats, Oils and Grease (FOG) which is also seen to increase both revenues and gas production.

The challenges with accepting municipal food scraps at a WWTP are many. First, the plant must have available digestion capacity. Many observers believe that for this approach to work, there must be a dedicated digester, but most of the current pilots are working with existing digesters and co-digesting the food and biosolids.

The City of Boulder WWTP currently has two digesters, neither of which has "excess" capacity. A third digester was envisioned, but never built. Thus, there are a number of infrastructure improvements that would need to be made in order for the WWTP to be able to accept, process, and digest any locally generated food scraps or high strength liquids. One of the critical factors of the current co-digestion projects around the country is taking advantage of existing excess capacity. This was the primary motivation behind the EBMUD project. The economics of co-digestion at a WWTP become much more favorable when the hard infrastructure is already paid for. In the City of Boulder's case, in addition to the need to capitalize and construct a new digester, it is likely that the cogeneration equipment would need to be both upgraded and expanded to handle the increased gas load.

Also, it is unknown how much work is required to "clean-up" and change solid food scraps into a slurry that is suitable for co-digestion. This typically involves manual and mechanical sorting,

screening, and filtering to make a suitable co-digestion feedstock. Depending on the scale, the investment in the receiving and pre-processing technology could be significant. It is unknown whether or not residents would accept trash trucks hauling what is perceived as municipal solid waste to the WWTP. Certainly there would be an increase in traffic at the WWTP.

Acceptable Materials

One of the challenges of receiving municipal food scraps at a WWTP is that most food scraps programs allow residents or businesses to include many items which are compostable, but are not food (and may not be readily "digestible"). For example, paper products, like napkins and pizza boxes, and compostable service ware like PLA cups and plates. The current education materials used by Western Disposal and Eco-Cycle in their food scraps collection outreach programs include a large number of materials which would be challenging in a "low solids" digester environment (such as the one conducted by the City of Boulder WWTP). While the technology to remove these materials exists, it is unclear how residents (and program managers) might feel about encouraging residents and/or businesses to include items for recycling which are ultimately pulled out of the waste stream and disposed. The City of Portland (Oregon) is currently experiencing some growing pains along these lines as they switched from a composter to a digester for their municipally collected food scraps; the digester was not designed to handle large amounts of paper, cardboard, or compostable plastics. Many of these items are now excluded, causing confusion and frustration among some generators[3].

Compost Quality

Some observers are concerned that adding municipal food scraps to WWTPs and co-digesting the material with sewage sludge degrades the quality of the resulting product(s). While there can be perception issues regarding the disposal and use of biosolids, there may be no significant agronomic difference between food that is digested and put on agricultural ground and food that is co-digested with biosolids and put on similar agricultural ground. There are also some observers that believe that the energy inherent in food scraps should be put back on the soil, continuing the nutrient cycle, rather than being used for energy.

Summary

A feasibility analysis of adding municipal food scraps to a future digester at the City of Boulder WWTP could be completed as there may be some benefits of a co-digestion project, however it is clear from discussions with plant staff and IWMC's experience with similar programs (predominantly in CA) that because there is no significant digester capacity (i.e., no existing,

[3] *"Agency Shifts to Food-Only Commercial Organics"* BioCycle Magazine, July 2014 Pgs. 30 – 32.

vacant digester), the primary benefit of these programs (taking advantage of existing capacity, thus lowering production costs) do not currently exist at this plant. The challenges of accepting, cleaning, and processing food scraps in order to co-digest at a yet-to-be built digester, as well as the impact on the existing food scraps collection programs, would seem to present significant obstacles both in terms of project economics but also in terms of the impact on existing collection programs.

GRASSCYCLING AND WASTE REDUCTION

Grasscycling, the practice of leaving grass clippings on the lawn rather than collecting them, is by all accounts, a cost-effective and environmentally friendly practice. Numerous state and local programs across the country strive to promote this practice via brochures, trainings and providing low-cost "mulching" mowers. Grasscycling has the potential to divert significant amounts of grass from municipal collection programs (whether destined for landfill or composting). It is unknown exactly how much grass is contained within the overall organics waste stream in Boulder County, but it is not insignificant. The challenge with grasscycling is quantifying the actual impact of an outreach program promoting it. The City of Seattle estimated that a homeowner aggressively grasscycling could perhaps divert as much as 500 pounds per 1000 square feet of lawn. However, grass generation varies significantly based on climate and soil type and the Seattle estimate probably overstates what one might expect in Boulder. In order to properly quantify the effect of a grasscycling outreach program, one would need to establish a baseline (How many people are already grasscycling? What is the total area of managed turf within the study area?). Any individuals already grasscycling might not have had their tonnage show up in the 2010 waste characterization.

So, while encouraging grasscycling is an excellent practice, one that promises reductions in greenhouse gasses, and potentially the need to collect less yard trimmings, no studies were identified which reasonably quantified the impact grasscycling might have on the needed compost capacity in Boulder County.

Colorado is an arid climate and some homeowners and businesses have begun to recognize this in their landscaping and have promoted "xeriscaping" which includes drought tolerant, low water using, and native plants. These are all positive developments and to the extent possible, could be encouraged by Boulder County. However, as shown in the 2010 Waste Characterization, there are still significant yard trimmings and organics heading to area landfills. Thus, whatever impact xeriscaping or drought-tolerant landscaping may be having on the generation of yard trimmings is very hard to measure.

COMPOST CAPACITY

It is important to understand that there are many factors which go into calculating a given site's capacity (and many management techniques an operator can use to manipulate that capacity). First and foremost might be that Western Disposal does not compost 100 percent of what is delivered to the site. According to *"Organics Processing Capacity Requirements for Boulder County"* (see Appendix B) Western processed 20,000 cubic yards of compost, 31,500 cubic yards of mulch, and 7,650 cubic yards of ground wood in 2013. Thus, out of 59,150 cubic yards processed, only about a third was made into compost. Most compost operators have this flexibility and use it to manage material and market fluctuations.

Existing Capacity at Western Disposal

IWMC conducted interviews with facility staff and toured the compost operation run by Western Disposal located in the City of Boulder. Western Disposal operates a traditional windrow operation, largely serving the needs of Western's customers who contract with Western for organics collection services. The facility receives both yard trimmings commingled with residential food scraps as well as commercial food scraps. In addition to discussing the site and capacity issues with Western Disposal Staff, IWMC reviewed the *"Organics Processing Capacity Requirements for Boulder County"* document prepared by Western. Using assumptions provided in that document and from Western staff, IWMC created an estimate of the facility capacity based on the available land at the site and assumptions about size of windrows and residence time. These calculations are contained in Appendix A. It is estimated by Western that they are currently processing roughly 10,000 tons per year (9,454 tons processed in 2013) on the current pad which is 6.41 acres. Western believes that a total of 10.73 acres of "pad" could be permitted at this site. Western estimates the current pad (6.41 acres) could accommodate 14,500 tons of material per year. If the "full" pad were used, Western believes they could accommodate 24,272 tons per year (more than they believe is available in the waste stream).

Although IWMC's on-site investigation only included a short site visit, the existing site does not appear to be anywhere near its capacity. IWMC observed quite a bit of additional windrow area and very small stockpiles of material. Also, the site is managed moderately, with a relatively long retention time (2 cycles per year, or a 6 month retention time). Decreasing the retention time from two turns per year, to three (or four) would have a significant impact on both production and capacity.

Estimate of Additional Capacity at Western Disposal

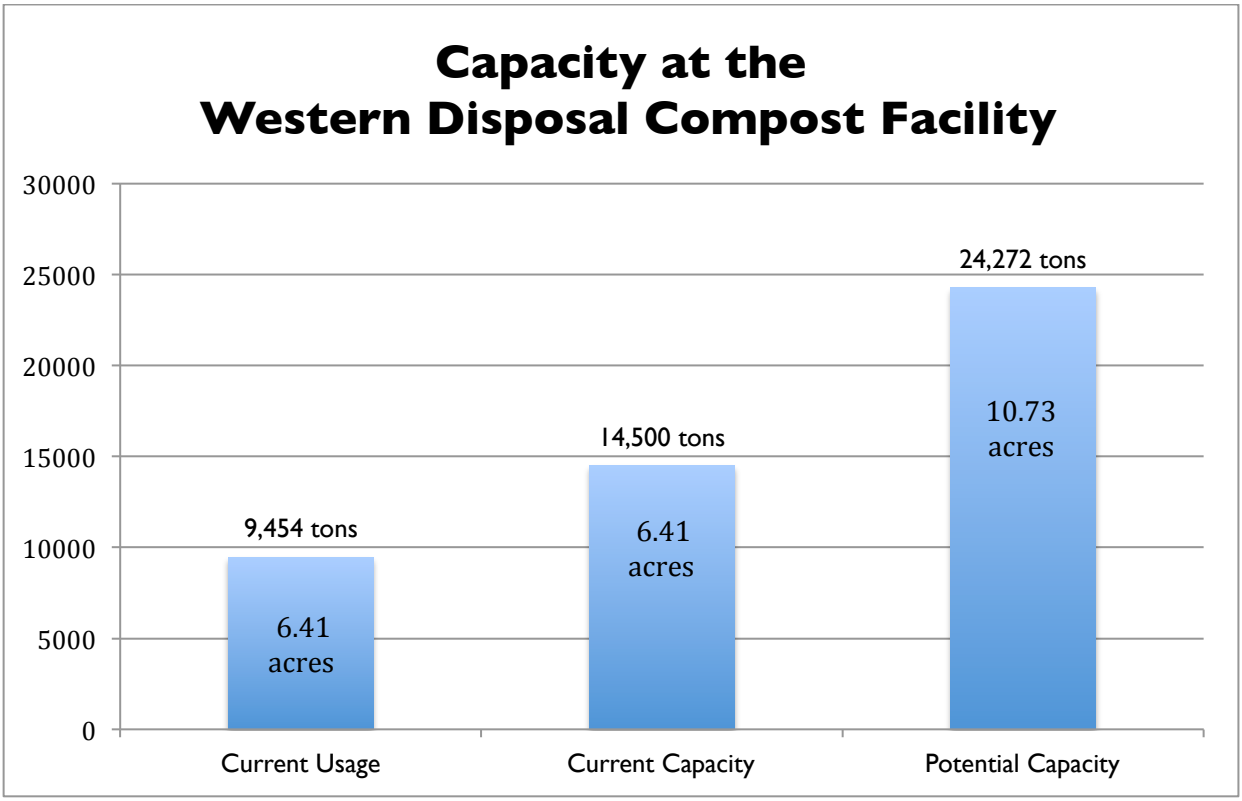
Western Disposal provides two estimates of the capacity of the composting site in their *"Organics Processing Capacity Requirements for Boulder County"* document. This document looks at the current permitted pad (6.41 acres) and assumes that the amount composted on it today is

the "Actual" (9,454 tons) and that a larger amount is the "Capacity". By increasing the pad size by 4.32 acres (a 67 percent increase), Western believes they can also get a concurrent 67 percent increase in the "Capacity". Western further believes that the addition of nitrogen (needed to reduce the carbon to nitrogen ratio) would allow them to increase the speed of the composting process (or decrease the retention time). Nitrogen is more plentiful in food scraps than in yard trimmings. One way to reduce the carbon to nitrogen ratio would be to accept more food scraps - though not all materials covered under the term "food scraps" are low in carbon (cardboard from a supermarket, for example). The Western analysis appears to be saying that they could double the tonnage received at the current pad (from 7,548 tons to 15,825 tons), and by increasing the available pad they could go from processing 12,594 tons, to 24,273 tons. Further, by decreasing the retention time, (from 2 turns per year to 2.5 turns) they could process up to 30,340 tons per year. Earlier in the document, Western estimates a total of 19,190 tons available within the entire Boulder County waste stream, including those cities which do not currently have organics collection. It is unclear whether or not this analysis includes additional commercial organics. However, what Western is saying is that they have more than sufficient capacity for all of the projected organics in the County. Figure 3 shows graphically the representation between the current utilization of the compost facility operated by Western Disposal, its potential utilization (both on the 6.41 acre pad) and the potential future capacity on the expanded 10.73-acre pad.

IWMC Estimate of Compost Capacity

As shown in Appendix A, using simple calculations of windrow size and retention time, the 10.71 acre site could accommodate approximately 30,000 cubic yards at any one time, or per cycle. Thus, if aggressively managed the site might be able to produce three or four times that volume on the 10-acre site. Conversions of yards to tons varies, but using a conservative estimate of bulk density and a conservative estimate of volume reduction during composting the site could be managed to accommodate 30,000 cubic yards per cycle. How many cycles are completed in a year makes a significant impact on the capacity of the site. Western currently completes two cycles per year. They believe with additional nitrogen (to decrease the carbon to nitrogen ratio) they could accommodate 2.5 cycles per year. However other management techniques could be employed (including more frequent turning, different turning equipment, closer attention to process variables and overall increasing management intensity) that would increase the site's capacity well beyond 2.5 cycles.

Figure 3. Capacity at the Western Disposal Compost Facility in Boulder Colorado.



IWMC's analysis is based on using assumptions of existing equipment and operating practices. The site currently uses a Resource Recycling Systems KW 616 compost turner. This machine can accommodate a windrow of approximately 6 feet high by 16 feet wide. In practice, this makes a windrow of approximately 2.2 cubic yards per linear foot[4]. The formula for calculating the area of a trapezoid is A = h x (b-h), where b is the base and h is the height. Thus 6 x (16 - 6) = 60 cubic feet. To convert this to cubic yards, divide by 27 (the number of cubic feet in a cubic yard), thus the KW 616 creates a windrow profile of approximately 2.2 cubic yards per linear foot. This value can then be multiplied by the available area, minus the area needed for aisles and related space. Assuming a 15-foot aisle between piles, the 10.73-acre site could accommodate approximately 38 windrows at one time. The other major factor influencing site capacity is the retention time and management intensity. Currently the facility is managed rather moderately, with two "turns" per year. By increasing the management intensity of the facility (decreasing the carbon to nitrogen ratio, and more actively managing the site) the number of turns could be increased. Also it is important to note that a site that is

[4] The manufacturer of this machine uses a slightly different formula (2/3(6*16)/27 which gives a slightly larger yardage per linear foot (2.38), making our assumptions slightly more conservative.

predominantly managing yard trimmings may have more capacity for food scraps than would seem apparent. This is because food scraps are predominantly water and do not add a significant amount of volume, the way adding a similar volume of yard trimmings might. Thus adding a cubic yard of food scraps to say, 5 yards of yard trimmings does not necessarily equal six yards; the bulk density of the piles increases, but the volume does not increase commensurately. This is especially true over time as free liquid in the food scraps replaces the moisture required for composting.

Additional Capacity Needs

At this point, there is not sufficient evidence that additional capacity (beyond expanding the permitted pad area to 10.7 acres) is needed at the Western Disposal site. Recent bids (City of Lafayette) have taken some of the potential volume off of the table, in the sense that this material will be going to the A-1 site in Keenesburg. Although Western Disposal has estimated potential future growth in organics collection programs, it is not certain how much of this will be directed to the Western site. It is also unclear how much suitable commercial organics may be available for composting in the future. Further, there may be increased competition for commercial organics once the Heartland Biogas facility is operational and is potentially attracting some commercial food scraps from the Boulder County region. A-1's facility in Eaton was also recently permitted to allow food scraps, further expanding available compost capacity in the region.

MANDATORY ORGANICS COLLECTION

The City of Boulder has established an aggressive Zero Waste goal. As part of understanding this goal, the City commissioned a Zero Waste Evaluation Study in 2014. This report has a number of recommendations, which, if implemented, may have an impact on Boulder County's need for additional Organics Processing Capacity. IWMC has reviewed the Zero Waste Evaluation Study and also contacted cities with similar goals and plans in place to determine a sense of the impact such goals might have on organics collection and processing. These issues are discussed below.

Zero Waste Evaluation Study

This report identifies a figure of 20,600 tons of organics being landfilled annually. It is not clear where this figure comes from. The report makes a number of recommendations which, if fully implemented, could potentially affect the need for additional organics processing capacity in Boulder County, these include:

- **Every other week trash collection.** Concurrent with this, organics collection would be changed to weekly.

- **Multi-Family Organics Collection.** Modify existing policy to require haulers to provide organics collection to homeowners with shared trash containers.

- **Mandatory Commercial Organics Collection.** This would require all commercial establishments to subscribe to organics collection.

- **Use of Compostable Packaging**. It is unclear how this might affect the organics collection program, but it is generally understood that the use of compostable bags increases participation in organics collection programs.

- **City purchase of Locally-Produced Compost.** This is intended to help support the market development efforts of the city's compost producers.

Table 8 summarizes the expected diversion identified in the Zero Waste Evaluation Study.

Table 8. Estimated Diversion from Zero Waste Evaluation Study.

Program	Expected Diversion
Weekly Collection of Organics	Not Estimated
Multi-Family Organics	300 – 600 TPY
Mandatory Commercial	8,900 – 17,700 TPY
Use of Compostables	Not Estimated
TOTAL	8,900 – 17,700 TPY

Thus, the Zero Waste Evaluation Study is predicting, out of a total of 20,600 tons disposed, implementing the abovementioned programs will achieve between 43 percent and 86 percent diversion of the commercial organic stream. The City of Seattle, which has been aggressively collecting commercial organics for roughly 8 years, in an open market system with aggressive contractors, is currently achieving an estimated 50 percent capture rate. As described below, the City of Seattle is currently contemplating and is likely to adopt and ordinance requiring collection of commercial organics. City staff expect that over time, they will achieve a diversion rate of up to 75 percent. Thus the estimates in the Zero Waste Evaluation Study may be aggressive, if not overstated.

Cities With Mandatory Organics Collection

As of the writing of this report, the only US city with mandatory organics collection is San Francisco, CA. However, a number of other programs are currently in the development or near implementation stages of similar programs. Table 9 summarizes the programs in a number of cities which have mandatory commercial organics programs (or something similar). These include San Francisco, California; Seattle, Washington; Portland, Oregon; New York City, New York; and Vancouver, British Columbia. Each of these programs is described below.

City and County of San Francisco. The City and County of San Francisco, a very dense urban area, developed an ordinance requiring separation of organics in 2009, more than 10 years after implementing voluntary source-separated organics. The text of the Ordinance (100-09) is contained in Appendix C. San Francisco, a city that covers a mere 49 square miles (smaller than the footprint of the Denver Airport) has far less green material than a typical northern California community and have been collecting food scraps separately since 1997, going citywide in 1999. Because residential food scraps and commercial food scraps are often commingled on the tipping floor of the Recology MRF, (prior to composting) IWMC was not able to identify any data showing a specific increase in participation based on transitioning from voluntary food scraps collection to mandatory. The total amount of organics collected has certainly increased, but no metrics that would be useful for this report were identified. One

Table 9. Cities with Mandatory Organics Collection

Jurisdiction	Population (2012)	Ordinance
San Francisco, CA	825,863	Required residents and businesses to separate food scraps from garbage in 2009.
Seattle, WA	634,535 (Metro 3.5 million)	Proposed Ordinance would go into effect 1/1/2015, enforcement would start 7/1/2015. Ban includes food, food soiled paper, cardboard, etc.
Portland, OR	603,106 (Metro 2.3 million)	No ban. Residents have every other week trash and weekly, inclusive organics collection citywide. Having issues with material types and processing facilities.
New York, NY	8,337,000	Local law 146-2013; on or after July 1, 2015, "Covered entities must either arrange for separate collection; transport their own organic materials for processing; or engage in on-site processing. Covered entities include: Businesses generating more than one ton of food waste per week.
Vancouver, BC	603,502 (Metro 2.3 million)	Disposal of organic materials not allowed in regular garbage, including food scraps, and yard waste (which is already banned). Goes into effect 1/1/2015.

Copies of relevant laws, fact sheets, etc., as well as contact information for the selected cities, are contained in Appendix C.

report[5] claims that "Organics collection increased by 45%" but without a baseline and tonnage data, it is difficult to know what to do with this metric. Also, San Francisco has a number of unique facets which make it a difficult city to compare to other cities and has come under fire recently for some of the ways they (and their City-Charter-mandated hauler, Recology) count some recycling[6].

City of Seattle, Washington. Seattle is on the cusp of implementing a mandatory food scraps collection ordinance, but of the date of this report, they have not approved such an ordinance. City staff projects that collected organics will increase 25 percent. But they have no operational data to back up this claim. Seattle's food scrap ban will most likely look much like their existing "Director's Rule SW-402.1", which requires businesses to recycle "significant amounts" (defined as more than 10 percent) of disposed paper, cardboard, cans, bottles, etc. The proposed ordinance will add food to the mix of required materials. The City enforces the existing bans on businesses using inspectors and fines.

Portland, Oregon. Portland, Oregon also does not have a mandatory organics collection ordinance, but has switched all residential customers to every other week garbage service with weekly, inclusive green bin (all organics) collection. As mentioned earlier in this report, Portland has struggled with implementing some aspect of these programs. The switch from weekly to every-other-week happened relatively quickly and caused some confusion. The closure of one of the City's contracted composting sites due to odors has also put strain on the program[7] A recent audit of the City's program found the residential side of the program was functioning as expected but the commercial sector was experiencing a number of issues.[8] The Audit reported 58 percent of the commercial food scraps in Portland are collected and sent to composting and/or digestion. The main recommendation of the Audit was that Portland's Bureau of Planning and Sustainability should:

> "Increase the food waste participation rate for the commercial sector, including multifamily housing units. Identify clear incentives for businesses to divert food waste from the landfill."

[5] http://sfenvironment.org/news/press-release/sf-attains-77-percent-recycling, accessed September 18, 2014.
[6] http://fivethirtyeight.com/features/san-francisco-stalls-in-its-attempt-to-go-trash-free/, accessed September 18, 2014.
[7] *"Agency Shifts to Food-Only Commercial Organics"* BioCycle Magazine, July 2014 Pgs. 30 – 32.
[8] http://www.oregonlive.com/portland/index.ssf/2014/04/portland_composting_audit_find.html, Accessed September 18, 2014.

New York City, New York. The City of New York, under the last days of the Bloomberg administration enacted fairly sweeping food waste collection legislation (Local Law 146-2013) which will go into affect on July 1, 2015. New York's law is modeled after similar, typically state legislation (like Connecticut, Rhode Island, and Massachusetts) which require certain (typically larger) generators to collect, self-haul or manage onsite their organics. A copy of Local Law 146-2013 is contained in Appendix C. IWMC did not identify any projections of participation by the City, regardless, collecting food scraps separately on the East Coast is very new and perhaps more challenging then on the West Coast and it remains to be seen what type of metrics these programs might have. There are also serious issues with lack of local infrastructure which may influence how well these programs might do. Local Law 77 established a pilot collection program which will run from September 2012, through the implementation of Local Law 146[9]. Although there is some data from this pilot study, the only "commercial " accounts participating in the program have been schools, which may not be representative of the larger category of commercial generators (i.e., supermarkets, restaurants, etc.).

Vancouver, British Columbia. The City of Vancouver, British Columbia has completed a rigorous planning and consultation process for developing a future organics disposal ban. While the consultation process is complete, the ban is not yet in effect. In fact, the strategy to implement the ban has not been made public yet either. Although the Metro Vancouver website has a great deal of information regarding the consultation process, there is obviously, no hard data from the program. Vancouver has had success banning other materials from landfill disposal and feels that they will be successful with the food scraps ban. Non-compliance will be monitored with inspections and fines.

[9] http://www.nyc.gov/html/nycwasteless/html/resources/reports_LL77_DiversionReport_June2014.shtml, accessed September 18, 2014.

STRUCTURAL/POLICY NEEDS

Although the City of Boulder has an aggressive zero waste plan and a number of programs which could potentially increase the need for organics processing, it is challenging to recommend an investment in compost capacity to Boulder County at this time. To the east of Boulder, in Eaton, Keenesburg and near LaSalle are three facilities which offer significant amounts of capacity for food scraps. The Heartland facility is estimated to require as much as 600 tons per day of food scraps. A-1 Organics Eaton facility was recently permitted to allow acceptance of food scraps.. Similarly the A-1 Keenesburg facility is currently receiving food scraps from Boulder County and is expected to continue to do so. Both of the newer facilities (Heartland and Eaton) may likely draw food scraps material from Boulder County. Secondly, waste hauling in Boulder County is largely an open market system. This is particularly true for commercial organics. Even if the County were to develop in-county capacity, there is no guarantee that any of the potential commercial organics would flow to the facility. Although there are administrative structures which might remedy this, they are beyond the scope of this report.

FACILITY NEEDS

The following section describes aspects of developing a potential stand-alone facility, including economic impacts, siting criteria, and costs.

Environmental Impacts

Ideally composting sites are developed with mitigations in place to minimize potential environmental impacts. A full environmental review should be completed before or during the siting process. The major potential environmental impacts of a municipal or commercial composting facility include odors and air quality, transportation (traffic issues), noise, and dust. Most of these can be mitigated through project design and an adequate siting analysis. Table 10 lists a summary of potential environmental impacts to be expected with a municipal or commercial compost facility.

Some of these impact areas may have state or local requirements (like depth to groundwater or proximity to water courses), which should be reviewed before embarking on a siting analysis.

Siting Requirements

Every individual interviewed for this project believes siting a new composting facility in Boulder County would be a challenge. Identifying ten-acre (or larger) parcels suitable for an industrial composting site is challenging in most urban and suburban areas. Many of these facilities are sited on agricultural land, far from sensitive receptors. While it is possible that a potential site exists within Boulder County for a new compost facility, it is beyond the scope of this report to identify potential sites. To maximize efficiency, the site would most likely be located in the Northern part of the county surrounding Longmont, the largest city in Boulder County yet to implement curbside organics collection.

There are any number of siting criteria which can be accounted for when siting a municipal or commercial composting facility. The criteria listed in Table 11 is a good place to start. Each of these criteria is discussed below. In addition there may be site or County-specific siting criteria which may be added to this list.

Table 10. Potential Environmental Impacts at Composting Facilities.

Land Use/General Plan Consistency
Geologic Resources
Resources/Parks
Sewage/Water Quality
Water Supply/Drainage/Flooding
Biological Resources
Transportation
Population/Housing
Safety/Health
Air Quality (Odor)
Noise
Aesthetics
Energy
Historical/Archeological
Public Services/Utilities

Table 11. Siting Criteria for Municipal Composting Sites.

Transportation Impacts
Transportation Distance
Traffic
Air Quality
Neighborhood Impacts
Air Quality (odor)
Noise
Environmental Impacts
Biological Resources
Cultural Resources
Hydrology and Water Quality
Site Costs
Site Acquisition Costs
Population and Housing
On-Site and Off-Site Development Costs
Utilities and Service Systems
Land Use Designation and/or Zoning
Visual Impacts

TRANSPORTATION IMPACTS

Transportation Distance. How far is the site from the material centroid?

Traffic. What is the impact of siting a facility at this location? Is the Level of Service for access roads going to be impacted by the additional traffic the facility will bring? How many new trucks will the facility need for feedstock receipt and product delivery? Does the facility have good access for heavy trucks?

Air Quality. What are the potential air quality impacts of the facility? What is the horsepower of the processing equipment? Will processing equipment be diesel or electric? What are the expected transportation emissions?

NEIGHBORHOOD IMPACTS

Air Quality (odor). What is the potential for the site to create objectionable off-site odors? Are there competing sources of odor in the vicinity? What are the prevailing winds?

Noise. What is the noise standard for the neighborhood? Can the facility meet this?

ENVIRONMENTAL IMPACTS

Biological Resources. Are there valuable or important biological resources on the site that need to be protected or avoided?

Cultural Resources. Are there identified cultural resources on the site which must be protected or avoided?

Hydrology and Water Quality. Are there water resources (wells, ponds, or rivers) in close proximity to the site which need to be protected? Is the site soil adequate to protect groundwater resources? Does the site have positive drainage?

SITE COSTS

Site Acquisition Costs. What is the cost of land? Is the site sufficiently sized to plan for future growth and expansion?

Population and Housing. Will the project affect developing neighborhoods or traditional housing areas? Is the project slated for new residential development? Is there anything preventing (or encouraging) new population growth around the facility? What is the ultimate density of nearby residential housing?

On-Site and Off-Site Development Costs. What are the site development costs? Are there off-site development costs (extensions of roads, pads, buffer areas, etc.)?

Utilities and Service Systems. Are existing utilities available on site or will they need to be extended? Water? Electricity? Roads? Etc.

LAND USE

Land Use Designation and/or Zoning. What is the current zoning of the site? What is the land use designation? Is the site identified in any specific plans? What is the surrounding land use and is it compatible with commercial composting?

Visual Impacts. What are the potential visual impacts of the facility? Will the facility impact any scenic view or vista? Is there any potential for a visual buffer?

COST ESTIMATE

In order to estimate the costs of developing additional capacity for composting in the Boulder County region, a conceptual facility was developed for the purposes of developing an order-of-magnitude cost estimate. The order-of-magnitude cost estimate involved estimating the capital costs of a 30,000-ton per year facility. There are definitely economies of scale in composting, so larger facilities have lower unit costs.

Capital Costs

Capital costs would primarily include a grinder, a compost turner, a water truck, and a screen[10]. Rolling stock would include one or two front-end loaders. Perhaps the biggest individual capital cost would be in site acquisition. Acquiring ten, relatively flat, vacant acres in the appropriate project area, far from sensitive receptors, would be a challenge and might require a formal siting study. A summary of order-of-magnitude capital costs is shown in Table 12. This estimate envisions a 30,000-ton per year site, using equipment similar to what Western Disposal is currently using.

Table 12. Order-of-Magnitude Capital Costs for a 30,000 ton per year Compost Facility*

Equipment	Unit Cost	Number	Total Cost
Site Improvement Costs	$500,000	1	$500,000
Front End Loader	$350,000	2	$700,000
Grinder	$850,000	1	$850,000
Windrow Turner	$300,000	1	$300,000
Water Truck	$300,000	1	$300,000
Trommel Screen	$200,000	1	$200,000
Yard Truck	$50,000	1	$50,000
		Capital Costs	$3,900,000

*These costs are order-of-magnitude costs for planning purposes, this is not meant to be a construction estimate.

This estimate does not include a cost for land acquisition. If privately-owned land were purchased, it could easily cost an additional $1,000,000 (10 acres @ $100,000 per acre.). Unfortunately, given the economies of scale in composting, the capital costs for a small site are significant. This estimate assumes purchase of all new equipment and significant site improvements to accommodate permitting requirements (primarily for pad surface and

[10] The equipment chosen for this representative analysis matches the equipment currently in use by Western Disposal, a Vermeer 8000 grinder, a Wildcat 516 screen, and a KW 616 windrow turner, the front-end loaders and the yard truck were generic based on IWMC's experience.

stormwater management). Clearly trying to amortize the costs of a ten-acre site and the equipment to process 30,000 tons of material are significant. Unfortunately the only way to reduce the unit costs is to spread them over additional tons processed. Five million dollars divided by 30,000 tons is approximately $166 dollars per ton. Obviously a County-financed facility could amortize this cost over a longer period but regardless, it would be a significant investment.

Also, the City of Boulder has identified mandatory collection of both commercial and multi-family organics. The quality and composition of materials collected from voluntary source-separated organics collection programs tend to differ significantly from the quality and composition of materials collected from mandatory commercial and multi-family organics collection programs. In general, organics collected from mandatory programs and multi-family units tend to have significantly more contamination – predominantly glass and plastic. If these materials are to be managed at the publicly-owned and privately operated facility, additional capital will be required for either manual or automated contamination removal equipment. Given Colorado's climate, contamination removal would likely have to take place inside of a building, further escalating capital costs.

Operating Costs

IWMC has developed a conceptual order-of-magnitude estimate of operating costs. These costs are for planning level discussions and should not be construed as detailed construction or operating costs. Operating costs for composting facilities can be highly variable. Labor, fuel, and equipment maintenance can vary significantly based on feedstock, management practice, fuel prices, etc.

Labor

It is assumed the facility could be managed with one management level general manager/foreman and three equipment operators and a laborer. However, labor requirements can vary significantly. For example if the City of Boulder implements mandatory commercial and multifamily organics collection, the facility may need to add additional labor to sort contaminants out of the feedstock. This may also affect the capital costs as the facility may require a sorting building and an elevated sorting platform to conduct the sorting.

Fuel

All of the key processing equipment would be portable and diesel powered, including the grinder, turners, screen and two front-end loaders. In order to estimate fuel use an estimate of productivity was made based on the equipment selected above, against the tonnage processed. Obviously fuel can be one of the most variable costs at an operation like this.

Maintenance

The capital budget assumes all new equipment, but all equipment requires regular scheduled and unscheduled maintenance. Maintenance estimates were based on hours worked and manufacturer's estimates. Composting is a particularly challenging work environment and maintenance costs are better estimated based on real world experience after a number of years operating a given piece of equipment.

Testing, Supplies, Etc.

The O&M cost estimate includes modest cost for supplies and for analytical testing.

Table 13. Order-of-Magnitude Operating Costs for a 30,000-ton per year Compost Facility.

	Range	
	Low	High
Labor	$250,000	$350,000
Maintenance	$70,000	$190,000
Fuel	$70,000	$150,000
Supplies, testing, etc.	$10,000	$10,000
TOTAL O&M Costs	$400,000	$700,000

Operations and maintenance costs for a 30,000-ton per year facility would have a range of $400,000 to $700,000 per year. Some of the annual costs are highly variable. Chief among these are labor and fuel. However, unscheduled maintenance can also be highly variable. If Boulder County decides a new stand-alone compost facility is critical infrastructure then the County should conduct a detailed engineering analysis and cost estimate to refine these estimates. These estimates are designed to give solid waste planners an order-of-magnitude understanding of the costs of a stand-alone facility,

FINDINGS

1. There appears to be a significant amount of both available and potentially available capacity for additional feedstock to be processed at the Western Disposal Compost Facility.

2. Combining the total available capacity of the Western Disposal site (potentially up to 25,000 tons per year), the A-1 Organics Eaton site (up to 50,000 tons per year) and the Heartland Biogas facility (approximately 200,000 tons per year - of food scraps), as well as the Keenesburg facility (capacity unknown, but it is a very large facility) there is more than adequate capacity for all Boulder County generated organics in the region.

3. The cost of developing a stand-alone, publicly owned compost facility is on the order of magnitude of $4 million, not including land acquisition cost. These costs will increase if the City of Boulder (or other major generators) develop a mandatory organics collection ordinance for commercial and multi-family organics (due to potential contamination).

4. The annual operations and maintenance costs for a stand-alone, publicly owned compost facility is on the order of $400,000 to $700,000. O&M costs are highly variable and a more detailed cost estimate should be conducted if the County is to pursue this option.

5. Most observers believe it would be very challenging to find a suitable, affordable site in Boulder County for a regional compost facility. Although a few potential sites have been identified, that is just the first step in the process of developing a facility.

6. Although the City of Boulder Wastewater Treatment Plant is potentially interested in co-digesting food scraps with their biosolids, there is no extra capacity (no existing dedicated digester) to accomplish this. Developing a new, stand-alone digester, with the requisite upgrades to energy generating equipment will be a significant cost.

7. Boulder County is an open market system for solid waste and recycling. There is no guarantee a given hauler will deliver organics to a county-owned facility. Numerous efforts to develop publicly-owned, and privately operated facilities have failed recently, for a number of reasons. The need for guaranteed feedstock definitely played a role in some of these failures (Sacramento County, Sonoma County Waste Management Agency, and Alameda County Waste Management Authority, to name three).

RECOMMENDATIONS

1. Based on the available organics processing capacity in the region, combined with the uncertainty of the development of additional collection programs in an open market system, there would not appear to be a compelling need to develop stand-alone compost capacity in the county at this time. Given that access to the Western Disposal compost site can be limited, Boulder County could explore avenues that expand access to the Western site. This could include the development of a public private partnership, or another form of arrangement.

2. If Boulder County wants to increase participation in organics collection by the commercial sector, they should fully investigate means of providing increased financial incentives or developing a mandatory ordinance. However, these tools (incentives and ordinances) require concurrent and significant public education and outreach. This should be part of any cost estimate of the program.

3. The City of Boulder could consider conducting a feasibility analysis of accepting municipal food scraps at the wastewater treatment plant, which would further refine the needs for this alternative to move forward.

4. Boulder County could consider conducting a targeted analysis focusing on generators of commercial organics to determine the current participation levels and future potential volumes of commercial organics. This study could try to bring clarity to the "number of accounts" versus "number of food generating businesses" discussion and also identify a more accurate estimate of current participation levels and likely future participation levels.

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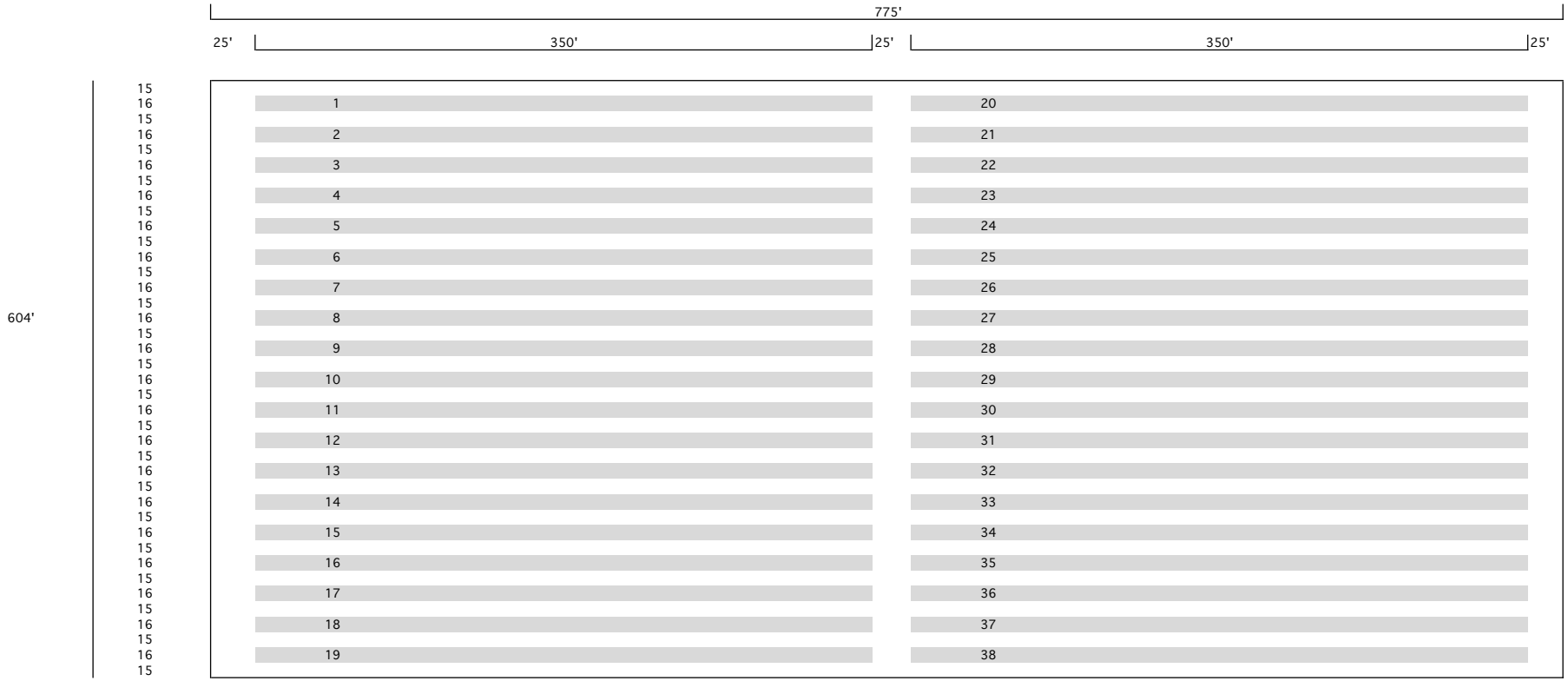
APPENDIX A
Compost Site Capacity Analysis

IWMC's analysis and assumptions for the compost site capacity analysis and a site plan follow this page.

BOULDER COUNTY COMPOST CAPACITY ANALYSIS
Site Capacity Review of Western Disposal

Windrowing Area	467,399	Square feet
	10.73	Acres
	Site	
Windrow Profile		
Base	16	Feet
Height	6	Feet
Top	8	Feet
Length	350	Typical
Aisle Width	15	feet
Profile	2.2	cubic yards per linear foot
Windrow Area Requirements		
Windrow Area	5,600	square feet
Aisle Area	5,250	square feet
Total Windrow Area	10,850	square feet
Additional space needed	1610	Square feet per windrow
tal area needed per windrow	12,460	Square feet per windrow
Number of windrows	38	
Bulk Density	1000	pounds per cubic yard
Capacity		
	29,176	cubic yards per cycle
	14,588	tons per cycle
Assume 30 percent reduction		
	37,929	cubic yards per cycle
	18,964	tons per cycle
Assume 2 cycles per year		
	75,857	cubic yards per year
	37,929	tons per year
Seven day per week basis		
	211	cubic yards per day
	105	tons per day



	604		
Length	775	One windrow =	778 cubic yards
Width	604		
Area	468100	38 windrows =	29,564 Cubic yards
	10.7 Acres		

APPENDIX B

Organics Processing Requirements For Boulder County

The Western Disposal-produced Report: "Organics Processing Capacity Requirements for Boulder County" follows this page.

Organics Processing Capacity Requirements for Boulder County

ISSUE:

As Boulder County and many of the incorporated entities within it move towards zero waste, questions have arisen about the adequacy of existing facilities in the County to handle potential volumes of materials coming from both current and new programs.

One of the facilities being scrutinized is the Western Disposal Services Organics Processing Facility located at 2655 N. 63rd Street in the City of Boulder. This report attempts to quantify potential volumes and establish the capacity of the Western facility.

The Site:

The site is a 13.98 acre piece of land situated on 63rd Street in the City of Boulder between the Boulder County Recycling Center and the Stazio Ball fields. Of the 13.98 acres in the site, 10.73 acres are suitable for compost operations. The site is permitted to accept vegetative waste only and has been in operation since 2001.

The Western Facility was built by Western to process the materials they were collecting from their own residential and commercial customers.

When the City of Boulder and parts of Boulder County mandated haulers collecting residential refuse had to imbed organics collection in their service, Western agreed to let other residential haulers utilize the site.

While commercial organics collection is not mandated in any area of Boulder County, Western has been working to build a commercial organics collection business and has restricted their organics site to accepting only the commercial materials they collect.

Western recently sent a letter to all of the haulers delivering ostensibly residential materials to the site stating that they would not accept their residential material if it contained material from commercial businesses or from municipalities that were bidding for one hauler.

CURRENT STATUS OF ORGANIC PROGRAMS IN BOULDER COUNTY:

Boulder County has a population of 310,000 people, approximately 90,822 single family homes, 37,276 multi-family dwelling units and 14,119 business establishments. (See Attachment 1.)

RESIDENTIAL SERVICES:

Currently 47,745 single family homes, or 53% of the total single family homes, are in areas where curbside organics collection programs are required by ordinance. (See Attachment 2, Table D)

COMMERCIAL SERVICES INCLUDING MULTI-FAMILY HOUSING:

There are no areas within Boulder County where organics collection is required for commercial or multi-family buildings. Western Disposal and Eco-Cycle, Inc. both offer voluntary organics collection from businesses and multi-family buildings throughout the county. Attachment 1, Table B indicates that there are approximately 14,119 business establishments in Boulder County including 824 locations serving food and 3,533 multi-family residential buildings in the County.

Of the estimated 402 locations serving food in the City of Boulder, Western is serving 52 of them and unknown how many of them are being served by Eco-Cycle, Inc. Of the estimated 1,785 multi-family buildings in the City of Boulder, 92 are being served by Western Disposal. It is unknown how many of the multi-family buildings are being served by Eco-Cycle, Inc. While it is unknown how many food establishments and multi-family units are being served by Eco-Cycle, Inc. the volume is not considered to be significant.

DROP-OFF FACILITIES:

In addition to the curbside and business collection programs, the city of Boulder and Boulder County sponsor a yard-waste and wood-waste drop-off program at Western Disposal's facility at 5880 Butte Mill Road in the city of Boulder. Those programs serve both residential and commercial customers. The material from these drop-off sites is processed into yard-waste mulch and is not addressed in this report. In order for this material to be converted to compost a high nitrogen additive would need to be added – most probably manure or sewage sludge. Western Disposal's Organics Processing Facility is not permitted to accept manures or sewage sludge and likely never would be due to its urban setting.

Additionally, Western has a Food-Waste drop-off dumpster co-located with the yard-waste drop-off site where residential and commercial customers can drop off food waste for composting. That material is used in the composting process.

PROCESSING OF MATERIALS:

The materials collected at curbside, collected from businesses or dropped off under City of Boulder and Boulder County programs are processed at the site on 63rd Street.

There are three products produced at Western's organics processing facility:

Compost - which is made from the materials collected at curbside and food-waste collected from businesses. In 2013 Western produced approximately 20,000 yards of compost.

Ground Yard Waste Mulch – which is made from organics dropped off under the city of Boulder and Boulder County programs. In 2013 Western produced approximately 31,500 yards of ground mulch.

Ground Wood – which is made from the dimensional wood-waste dropped off under the city of Boulder and Boulder County programs. In 2013 Western produced approximately 7,650 yards of ground wood.

POTENTIAL VOLUME TO BE GENERATED FOR COMPOSTING IN BOULDER COUNTY:

Single-Family Residential: The best available statistics regarding volumes coming from existing residential programs is the data Western Disposal reports to local government each year. Table C on Attachment 2

summarizes those statistics. The residential statistics reinforce each other with both the City of Boulder and the City of Louisville having almost identical generation rates and the one suburban area, Boulder County South, producing considerably more – as one would expect. Table E on Attachment 2 indicates that if all of the single family residences in Boulder County (excluding the Mountain residences) were covered by organics collection ordinances, there could be 19,190 tons of material to be composted per year.

Commercial: The volume of food-waste and other organics that can be collected from the commercial businesses, offices and multi-family buildings is unknown at this time. However, from experience and industry literature we know that most of the organic material to be collected from these sources is food-waste which is 70% water, therefore we do not expect a significant impact from commercial and multi-family programs.

WESTERN ORGANICS PROCESSING CAPACITY:

MULCH AND GROUND WOOD PRODUCTION:

The grinding of yard-waste and wood-waste to make mulch and ground wood products is <u>not a regulated activity</u> in Colorado and can be done anywhere that zoning doesn't prohibit it. Western Disposal has vacant land adjacent to its permitted compost facility where the stockpiling of unground materials, the grinding of materials and the storage of ground materials can be accommodated without any permitting process. For that reason, this report does not address materials not bound for compost production.

COMPOST PRODUCTION LICENSING REQUIREMENTS:

In order for a non-agricultural entity to produce compost in Colorado, application must be made to the Colorado Department of Public Health and the Environment. The application process is long, complicated and expensive. At the end of the permitting process, if the applicant is successful and if the host community agrees to do so, a Certificate of Designation is issued for the site. Western Disposal has such a Certificate of Designation (CD) approved by the State Department of Public Health and the Environment and issued by the City of Boulder.

Certificates of Designation are very specific about the materials that can be accepted for composting at a designated site. Western Disposal's current permit only allows vegetative wastes to be processed. No manures or sewage sludge can be accepted for processing at the site. That is a limitation upon the productivity of the site.

COMPOSTING PROCESS FACTORS:

The composing process is a natural one that relies upon bacteria to digest organic waste and turn it into compost which can be used to amend soil to increase its ability to breathe and hold water. The process depends upon a balance of carbon (which comes from woody materials) and from nitrogen (which comes from the green parts of plants, food waste and from manures). The speed at which organic material is converted to compost is dependent (within limits) upon the amount of nitrogen available in the process. The material Western collects at curbside from residential customers and from the commercial organic routes gets nitrogen to feed the composting process from the food waste and green plant materials in the

mix. While the food waste and green materials in the mix provide nitrogen, the nitrogen ratio is not optimum and more nitrogen rich feed-stocks would speed up the composting process.

WESTERN'S COMPOST PROCESSING CAPACITY:

Attachment 3 analyzes current and projected capacity of the Organics Processing Facility.

Western currently has lined 6.41 acres of the 10.73 acres available for composting with a liner so that compost can be made upon it. In 2013, Western processes 9,454 tons of material into compost on that pad. The area with pad is not being used as intensively as it could be because there is more pad space available than there is material to fill it. Western estimates that it could process an additional 5,046 tons of material on if pad use was optimized. That would make the capacity of the current pad 14,500 tons of materials per year. See Attachment 6, Table I

The facility could accommodate a pad of 10.73 acres in size, which would be a 67% increase over the current pad size. That change would increase the capacity from the current 14,500 tons per year to 24,272 tons per year 25% more than would be needed if all the residences in Boulder County had curbside organics collection service.

Currently there are two production cycles per year at the site. That is, it currently takes six months for a windrow of material to complete the composting process. As noted above, the six-month time frame is the result of a less than optimum mix of carbon and nitrogen in the materials being composted. If additional nitrogen could be added to the mix, then it would be possible to reduce the six-month production time and increase the capacity of the facility.

Attachment 3, Table F shows the potential capacity of the site growing to 30,340 tons at 2.5 cycles per year, about 60% more than the maximum expected volume from residential collections in the County. We believe that if local government were to require organics collection service from all establishments that serve food, there would be sufficient additional nitrogen to achieve the two and one-half cycles per year level of operations. The 6,068 tons of additional capacity generated by increasing from 2 cycles to 2 and one-half cycles plus the unused 5,082 tons of capacity on the existing pad (for a total of 11,150 tons of capacity) would be more than enough to handle any commercial and multi-family volumes created by new ordinances.

POTENTIAL FOR ALL OF BOULDER COUNTY TO ADOPT ORGANICS COLLECTION:

It is unlikely that the maximum number of housing units addressed by this report would all be subjected to organics collection mandates. It is even less likely that all of the multi-family and businesses located within Boulder County would be subjected to mandatory organics collection.

POTENTIAL FOR COMPETING COMPOST SITES:

As the demand for residential organic collection programs grows in the Denver metropolitan areas, other compost sites will be developed that will attract some of the volumes being generated in Boulder County. As that happens, the capacity necessary to process materials at the Western site will diminish.

CONCLUSION:

The capacity of the Western Disposal compost facility has been established in Attachment 3 at 14,500 tons as currently configured, 24,272 tons if the site is expanded and at 30,340 tons if more nitrogen can be introduced into the process. The demand from residential organic programs being expanded to virtually the whole county would create a demand of only 19,190 tons. Volume derived from commercial and multi-family programs would likely not be sufficient to use the 11,150 ton potential unused capacity at the site.

Because of the demonstrated capacity of the Western Organics Processing Facility and additionally because it is unlikely that all of the single family housing units in Boulder County will be subject to mandatory organics collection, because it is unlikely that a large number of multi-family and business accounts would be subject to mandatory organics collection and because we believe competing composting facilities will develop in the area, we believe that the Western Disposal composting facility has more than sufficient capacity to handle the likely volumes of residential and commercial volumes to be composted in Boulder County.

ADDENDUM:

Western Disposal services has been making and marketing compost and other organic materials for over ten years. We can report marketing of the materials produced is the most difficult portion of the process. While composting is an organic process dependent upon the correct mixtures of oxygen, water, carbon, nitrogen and bacteria, it is a manageable process. Marketing of the materials, however, requires constant attention to the markets and the ability to adapt processes and procedures very quickly to produce what the market is requesting. It also requires a lot of flexibility in terms of pricing day-to-day.

We believe that the collection of organics at curbside and from businesses and multi-family housing structures will increase over time and the supply of materials could easily exceed the demand for the materials. That will only make the marketing of materials more challenging.

We believe that any community that requires the collection of organics must be willing to cooperate with the producer to see that the material finds an appropriate use.

ATTACHMENTS

Attachment 1

Table A – Table of Census Data for Boulder County Residential population
Table B – Table of Census Data for Boulder County Commercial population

Attachment 2

Table C – Organic Generation Rates for Western's Residential Customers
Table D – Status of Curbside Organic Collection Programs for Boulder County Residential Population.
Table E – Potential Residential Volume of Organics in Boulder County

Attachment 3

Table F – Calculation of Western Organic Facilities Potential Capacity to Process Materials

Attachment 4

Table G – Distribution of Organic Material Receipts by Month

Attachment 5

Table H – Miscellaneous Volume, Weight and Conversion Factors

Attachment 6

Table I -- Summary of Materials Collections in Boulder, Louisville and Lafayette 2009 thru 2013

Attachment 7

Table J – Calculation of Compost Pad Usage at 14,500 tons of Input per Year

DEMOGRAPHIC INFORMATION ON BOULDER COUNTY -- RESIDENTIAL

Table A

Community	Population	Housing Units	Multi Family Unit Count	Single Family Dwelling Count
City of Boulder	101,808	43,479	20,218	23,261
Longmont	88,669	35,008	10,047	24,961
Lafayette	25,733	9,997	1,540	8,457
Louisville	19,074	7,892	1,586	6,306
Superior	12,782	4,698	1,128	3,570
Total Incorporated Communities	248,066	101,074	34,518	66,556
Boulder County Mountain *	9,116	3,974	406	3,569
Boulder County North *	3,451	1,505	154	1,351
Boulder County South *	49,415	21,545	2,199	19,346
Total Unincorporated County	61,982	27,024	2,758	24,266
Total Boulder County	310,048	128,098	37,276	90,822

DEMOGRAPHIC INFORMATION ON BOULDER COUNTY -- COMMERCIAL

Table B

Community	Population	Business Establishments	Multi-Family Buildings	Food Service Establishments
City of Boulder	101,808	5,569	1,785	402
Longmont	88,669	3,023	1,176	183
Lafayette	25,733	1,015	82	56
Louisville	19,074	900	106	51
Superior	12,782	396	128	24
Total Incorporated Communities	248,066	10,903	3,277	716
Boulder County Mountain *	9,116	473	38	16
Boulder County North *	3,451	179	14	6
Boulder County South *	49,415	2,564	204	86
Total Unincorporated County	61,982	3,216	256	108
Total Boulder County	310,048	14,119	3,533	824

* The designation of Boulder County North, South and Mountain is one assigned by Western Disposal and Boulder County. There are no statistics for the individual areas, just for the unincorporated areas as a whole. They have been divided based upon Western's division of customers in the areas.

GENERATION RATES FOR WESTERN CUSTOMERS

Table C

(2013 volumes)

Community	Service Address Count	Tons Of Organics Collected	Pounds Per Service Address Per Year
Residential:			
Urban			
City of Boulder	18,469	4,035	437
City of Louisville	5,137	1,126	438
Average Urban			437
Suburban			
Boulder County South	7,427	2,253	607
Average Suburban			607

RESIDENTIAL CURBSIDE COLLECTION PROGRAM STATUS

Table D

Community	Population	Single Family Homes	Currently Have Curbside Organic Collections	Likely to Adopt Organic Collections Soon	Likely to Adopt Organics Collection in 5 to 10 Years	Unlikely to Adopt Organics Collection
City of Boulder	101,808	23,261	23,261			-
Longmont	88,669	24,961		24,961		
Lafayette	25,733	8,457		5,434	3,023	-
Louisville	19,074	6,306	5,138		1,168	-
Superior	12,782	3,570			3,570	-
Total Incorporated Communities	248,066	66,556	28,399	30,395	7,762	-
Boulder County Mountain *	3,099	3,569				3,569
Boulder County North *	49,586	1,351		1,351		
Boulder County South *	9,297	19,346	19,346			
Total Unincorporated County	61,982	24,266	19,346	1,351	-	3,569
Total Boulder County	310,048	90,822	47,745	31,746	7,762	3,569
		100.0%	52.6%	35.0%	8.5%	3.9%

* The designation of Boulder County North, South and Mountain is one assigned by Western Disposal and Boulder County. There are no statistics for the individual areas, just for the unincorporated areas as a whole. They have been divided based upon Western's division of customers in the areas.

POTENTIAL VOLUMES

Table E

Sources	Dwellings Covered	Annual Pounds of Material Per Dwelling	Projected Annual Tons
Existing Programs			
City of Boulder	23,261	437	5,086
City of Louisville	5,138	437	1,123
Boulder County South	19,346	437	4,230
	47,745		10,439
Potential Programs			
City of Longmont	24,961	437	5,457
Balance of City of Louisville	1,168	437	255
City of Lafayette (City Program)	5,434	437	1,188
Balance of City of Lafayette	3,023	437	661
Superior	3,570	437	781
Boulder County North	1,351	607	410
	39,507		8,751
Total Potential Tons	87,252		19,190

Table F

COMPOST YARD CAPACITY

Compost Yard Physical Characteristics		
Area Permitted for Compost Production	13.98	Acres
Area Occupied by Entrance Road	3.25	Acres
Net Compost Yard Area	10.73	Acres
Area with Compacted Clay Liner	6.41	Acres
Area Suitable for Additional Liner	4.32	Acres
Per Cent Increase in Pad Area Possible	67%	

Existing Compost Yard Capacity Per Year (2 Cycles Per Year)	2013 Actual		Capacity	
Tons Entering Compost Process:				
Curbside Collections	7,548	Tons	12594.0	Tons
Commercial Organics	1,906	Tons	1906.0	Tons
	9,454	Tons	14,500	Tons
Grinding Conversion to Yards	9		9	
Ground Yards Entering Compost	85,086	Yards	130,500	Yards
Compost Conversion Factor	35%		35%	
InProcess Compost Yards	29,780	Yards	45,675	Yards
Compost Shrink Factor	67%		67%	
Finished Compost Yards	19,953		30,602	
Expanded Compost Yard Capacity				
Tons Entering Process Currently	9,454	Tons	14,500	Tons
Increase Factor	67%		67%	
Expanded Capacity	15,825	Tons	24,272	Tons

Potential Compost Yard Capacity Increase By Adding Nitrogen				
Assuming the Entire Permitted Site Was Lined for Production:				
Capacity with Current Mix Would Be	15,825	T/P/Y	24,272	T/P/Y
If turns per year increased To:				
2.5 Cycles Per Year	19,782	T/P/Y	30,340	T/P/Y

Table G

DISTRIBUTION OF ORGANIC RECEIPTS BY MONTH

Month	All Receipts		Compostable Portion	
	Tons Received	Percent of Total	Compostable Tons	Percent Compostable
January	861	5%	491	5%
February	704	4%	392	4%
March	1,008	6%	455	5%
April	1,345	7%	720	8%
May	2,016	11%	1188	13%
June	1,897	11%	1063	11%
July	1,913	11%	930	10%
August	1,829	10%	918	10%
September	1,384	8%	793	8%
October	1,755	10%	948	10%
November	2,422	13%	1069	11%
December	914	5%	486	5%
	18,048	100%	9453	100%

Western Disposal Services, Inc.
25-Jun-14

Table H

REVIEW OF ORGANICS COLLECTION AND PROCESSING STATISTICS
Based Upon 2013 Data

Customers Served with Curbside Organics Collection at 12/31/2013

Area	Service Address Count	Annual Tons of Organics Collected	Average Cart Size	Annual Yards of Service	Annual Pounds of Organics Per Annual Yard of Service
Single Family Homes					
City of Boulder	18,458	4,035	47	112,599	71.7
City of Louisville	5,171	1,111	100	66,825	33.3
Boulder County South	7,427	2,253	73	69,315	65.0
	31,056	7,399		248,739	59.5
Multi-Family Collections					
City of Boulder	92	102		1,566	130.3
City of Louisville					
Boulder County South	4	9		156	115.4
	96	111		1,722	128.9
Industrial - Commercial					
City of Boulder	201	1,589		22,487	141.3
City of Louisville		110		1,563	140.8
City of Lafayette		8		100	160.0
Boulder County South	24	133		2,115	125.8
Town of Superior	1	8		360	44.4
Town of Lyons		19		221	171.9
Weld County		51		210	485.7
City of Broomfield		61		736	165.8
City of Longmont		54		5,569	19.4
	226	2,033		33,361	121.9
TOTAL ALL AREAS	31,378	9,543		283,822	67.2
LOST IN TRANSPORT		(89)			
	31,378	9,454	-	283,822	67.2

ATTACHMENT 6

Western Disposal Services, Inc.
Calculation of Maximum Boulder County
Organics Processing Need

Table I

April, 2014

SOLID WASTE GENERATION RATES Western Disposal Residential Customers

ACTUAL EXPERIENCE IN LOUISVILLE

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009 (7 Months)	2,347.6	1,170.4	743.4	4,261.4	4,871	1,652	824	523	2,999	4.53	2.26	1.43	8.22
2010	3,790.3	2,030.8	1,333.2	7,154.3	4,963	1,527	818	537	2,883	4.18	2.24	1.47	7.90
2011	3,732.9	1,931.7	1,218.0	6,882.5	4,990	1,496	774	488	2,759	4.10	2.12	1.34	7.56
2012	3,711.0	1,979.9	1,188.1	6,879.0	5,060	1,467	783	470	2,719	4.02	2.14	1.29	7.45
2013	3,752.4	1,976.3	1,125.7	6,854.4	5,138	1,461	769	438	2,668	4.00	2.11	1.20	7.31
2013 % Composition	54.7%	28.8%	16.4%	100.0%									

ACTUAL EXPERIENCE IN LAFAYETTE

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009	4,496.0	1,629.8		6,125.7	5,084	1,769	641	-	2,410	4.85	1.76	0.00	6.60
2010	4,931.6	1,726.0		6,657.6	5,103	1,933	676	-	2,609	5.30	1.85	0.00	7.15
2011	4,348.1	1,595.3		5,943.4	5,164	1,684	618	-	2,302	4.61	1.69	0.00	6.31
2012	4,508.1	1,610.2		6,118.2	5,282	1,707	610	-	2,317	4.68	1.67	0.00	6.35
2013	4,505.7	1,621.9		6,127.6	5,434	1,658	597	-	2,255	4.54	1.64	0.00	6.18
2013 % Composition	73.5%	26.5%	0.0%	100.0%									

ATTACHMENT 6

ACTUAL EXPERIENCE IN BOULDER

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009	10,083.0	7,359.0	3,121.0	20,563.0	17,690	1,140	832	353	2,325	3.12	2.28	0.97	6.37
2010	9,996.0	7,258.0	3,467.0	20,721.0	17,948	1,114	809	386	2,309	3.05	2.22	1.06	6.33
2011	9,802.0	7,104.0	4,019.0	20,925.0	18,076	1,085	786	445	2,315	2.97	2.15	1.22	6.34
2012	10,143.0	6,987.0	4,423.0	21,553.0	18,234	1,113	766	485	2,364	3.05	2.10	1.33	6.48
2013	10,640.0	7,032.0	4,065.0	21,737.0	18,469	1,152	761	440	2,354	3.16	2.09	1.21	6.45
2013 % Composition	48.9%	32.4%	18.7%	100.0%									

TOTALS AND AVERAGES

	Yearly Collection Totals - Tons					Annual Generation Rates Per Household - Pounds				Daily Generation Rate Per Household			
	Total Trash	Total Recyclables	Total Compostables	Total All Materials	Average Monthly Service Address Count	Average Trash	Average Recyclables	Average Compostables	Average All Materials	Average Trash	Average Recyclables	Average Composta bles	Average All Materials
2009	16,926.6	10,159.2	3,864.4	30,950.1	27,645	1,225	735	280	2,239				6.13
2010	18,717.9	11,014.8	4,800.2	34,532.9	28,014	1,336	786	343	2,465				6.75
2011	17,883.0	10,630.9	5,237.0	33,750.9	28,230	1,267	753	371	2,391				6.55
2012	18,362.1	10,577.1	5,611.1	34,550.3	28,576	1,285	740	393	2,418				6.63
2013	18,898.1	10,630.2	5,190.7	34,719.0	29,041	1,301	732	357	2,391				6.55
2013 % Composition	54.4%	30.6%	15.0%	100.0%									

ATTACHMENT 7

Western Disposal Services, Inc.
25-Jun-14

Table J

ANALYSIS OF COMPOST PAD USAGE BY MONTH

Assumptions:

Distribution of Tons for Composting Through the Year:

January	5.2%	Annual Tons for Composting Delivered to Compost Yard	14,500
February	4.2%		
March	4.8%	Ratio of Yards Placed in Windrow to Tons Received:	3.33 to 1
April	7.6%		
May	12.6%	Weight Per Yard of Ground Material in Windrow	600 pounds
June	11.2%	Months to First Windrow Consolidation	3
July	9.8%	Months to Second Windrow Consolidation	
August	9.7%	Ratio of Finished Compost Yards to Tons Delivered	2.00 to 1
September	8.4%	Windrow Capacity	1200 yards per windrow
October	10.0%		
November	11.3%	Maximum Windrow Count	18 per cycle
December	5.2%		
	100.0%	Cycles Per Year	2

This worksheet calculates the number of windrows on the pad at any one time. The capacity of the pad is 18 windrows each containing 1,200 yards of ground material each. If the number of windrows exceeds 19, there could be a problem.

ATTACHMENT 7

Month of Receipt	Tons Received	Yards Into Windrows	Windrows Created	Cumulative Windrows Created	Windrows Combined on Pad	Cumulative Windrows Combined on Pad	Windrows Completed and Removed From Pad	Cumulative Windrows Completed and Removed from Pad	Net Windrows on the Pad
Year 1									
January	754	2,511	2.09	2.09				-	2.09
February	609	2,028	1.69	3.78				-	3.78
March	696	2,318	1.93	5.71				-	5.71
April	1,102	3,670	3.06	8.77	1.05	1.05		-	7.73
May	1,827	6,084	5.07	13.84	0.84	1.89		-	11.95
June	1,624	5,408	4.51	18.35	0.97	2.86		-	15.49
July	1,421	4,732	3.94	22.29	1.53	4.39	1.05	1.05	16.86
August	1,407	4,684	3.90	26.19	2.53	6.92	0.84	1.89	17.38
September	1,218	4,056	3.38	29.57	2.25	9.17	0.97	2.86	17.54
October	1,450	4,829	4.02	33.60	1.97	11.15	1.53	4.39	18.07
November	1,639	5,456	4.55	38.15	1.95	13.10	2.53	6.92	18.13
December	754	2,511	2.09	40.24	1.69	14.79	2.25	9.17	16.28
Total	14,500	48,285	40.24		14.79		9.17		
Year 2									
January	754	2,511	2.09	42.33	2.01	16.80	1.97	11.15	14.38
February	609	2,028	1.69	44.02	2.27	19.07	1.95	13.10	11.85
March	696	2,318	1.93	45.95	1.05	20.12	1.69	14.79	11.05
April	1,102	3,670	3.06	49.01	1.05	21.16	2.01	16.80	11.05
May	1,827	6,084	5.07	54.08	0.84	22.01	2.27	19.07	13.00
June	1,624	5,408	4.51	58.59	0.97	22.98	1.05	20.12	15.49
July	1,421	4,732	3.94	62.53	1.53	24.50	1.05	21.16	16.86
August	1,407	4,684	3.90	66.43	2.53	27.04	0.84	22.01	17.38
September	1,218	4,056	3.38	69.81	2.25	29.29	0.97	22.98	17.54
October	1,450	4,829	4.02	73.84	1.97	31.26	1.53	24.50	18.07
November	1,639	5,456	4.55	78.38	1.95	33.22	2.53	27.04	18.13
December	754	2,511	2.09	80.48	1.69	34.91	2.25	29.29	16.28
Total	14,500	48,285	40.24		20.12		20.12		

Beginning Windrow Count	0
Windrows Created During Year	40.24
Windrows Combined During Year	14.79
Completed Windrows Removed	9.17
Net Windrows on Pad	16.28

Beginning Windrow Count	16.28
Windrows Created During Year	40.24
Windrows Combined During Year	20.12
Completed Windrows Removed	20.12
Net Windrows on Pad	16.28

APPENDIX C

Mandatory Organics Collection Ordinances, Laws, Fact Sheets, etc.

The following documents related to Mandatory commercial food scraps collection, follow this page. Contact information for each program is contained immediately following this page.

San Francisco Mandatory Food Scraps Collection Ordinance.

Seattle Composting Requirement, Frequently Asked Questions

New York City Commercial Organics Law

Commercial Organics Ban Information Package, Metro Vancouver

CONTACTS

The following individuals can be contacted for more information on the existing (San Francisco) and planned mandatory commercial organics programs.

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FILE NO. 081404 ORDINANCE NO. 100-09

[Mandatory Recycling and Composting.]

Ordinance amending the San Francisco Environment Code by adding Chapter 19, Sections 1901 through 1912, entitled "Mandatory Recycling and Composting Ordinance," amending the San Francisco Public Works Code by amending Section 173, and amending the San Francisco Health Code by amending Sections 291, 291.1, 291.2, 291.4, 291.7, 291.11, 291.12, 291.15, 291.17, and 293.1, and by repealing current Sections 291.9 and 291.16 and adding a new Section 291.16, all to: (1) require all persons located in San Francisco to separate recyclables, compostables and landfilled trash and participate in recycling and composting programs; (2) provide enforcement mechanisms and penalties for violations; (3) ensure that all properties subscribe to refuse collection service; and (4) authorize a Department of Public Health inspection fee of $167 per hour; and making environmental findings and setting an operative date.

Note: Additions are *single-underline italics Times New Roman*; deletions are ~~*strikethrough italics Times New Roman*~~. Board amendment additions are double underlined. Board amendment deletions are ~~strikethrough normal~~.

Be it ordained by the People of the City and County of San Francisco:

Section 1. **Findings.** The Board of Supervisors finds and declares:

1. The City and County of San Francisco has a duty to protect the natural environment, the economy, and the health of its citizens.

2. The California Integrated Waste Management Act of 1989 requires cities and counties to reduce, reuse and recycle (including composting) solid waste generated in the state to the maximum extent feasible before any incineration or landfill disposal of waste, to conserve water, energy and other natural resources, and to protect the environment.

3. The California Integrated Waste Management Act of 1989 mandates that each local jurisdiction in the state divert 50% of discarded materials from landfill. Every city and county in California could face fines up to $10,000 a day for not meeting the 50% diversion goal. In 2001, the California Integrated Waste Management Board adopted a Strategic Directive statewide zero waste goal.

4. The State of California regulates hazardous waste (e.g., paint, batteries, electronics) and sets management standards, including banning landfill disposal of hazardous waste, to protect public health and the environment, and conserve natural resources. As a result, services to collect and recycle hazardous waste materials include more than 100 neighborhood drop-off sites throughout the city for various materials, a year-round facility that accepts all materials, and an appointment-based home pick-up service.

5. For each ton of municipal waste landfilled, about 71 tons of waste have been created "upstream" from the mining, manufacturing and distribution of materials in the product lifecycle, resulting in significant resource depletion, pollution and climate-changing impacts.

6. Organic or compostable waste that is buried in the anaerobic conditions of landfills creates methane gas along with the leaching of toxins. Methane gas is at least 21 times as potent as carbon dioxide in changing the planet's climate. Twenty percent of San Francisco's planned reductions in climate-changing emissions come from diverting additional solid waste from landfill.

7. The Board of Supervisors has adopted goals of 75% diversion from landfill by 2010 and zero waste to landfill or incineration by 2020. This policy includes urging greater consumer responsibility, including mandatory participation in diversion programs.

8. People who live in, work in, or visit San Francisco generate over 2 million tons of solid waste annually. While the city has an overall landfill diversion rate of 70% (as reported

to the State), most residents and businesses divert closer to 50% through recycling and composting, resulting in over 660,000 tons per year of material from San Francisco being landfilled in 2006.

9. Growth in the rate of landfill diversion in San Francisco has leveled off in recent years, with an increase of less than 1% from 2005 to 2006, and continued voluntary diversion participation alone will not likely enable the City to meet its 75% diversion goal by 2010.

10. San Francisco's agreement with the Altamont Landfill in Alameda County provides for waste disposal of up to 15 million tons. At the end of 2007, nearly 12 million tons of this contract capacity had been used, leaving about 3 million tons of capacity remaining. At the current disposal rate at the Altamont Landfill there are about 5 years left (until 2013) on the City's landfill contract. Increased diversion will extend the life of this landfill contract with its favorable low disposal costs, while any new landfill contract will likely increase disposal costs and subsequently trash collection rates in San Francisco.

11. After years of voluntary, convenient, nation-leading, award-winning programs and outreach and financial incentives, a comprehensive study found that 36% of what San Francisco sends to landfills is compostable (primarily food scraps) and 31% is recyclable (mostly paper), and this breakdown essentially applies to all sectors (residential, commercial and City government).

12. There are facilities in the City and surrounding areas that can effectively reuse, recycle, compost or otherwise process and market most materials discarded in San Francisco and thereby divert such materials from landfill while creating jobs.

13. Many state and local governments have mandated recycling of various materials and composting of yard trimmings, or conversely banned them from landfill, resulting in significant increases in waste diversion.

14. State legislation that would have mandated owners or managers of multifamily buildings to provide recycling collection for their tenants was vetoed by the Governor because, as he stated, local jurisdictions already have the authority to mandate this participation locally.

15. The Board of Supervisors passed a mandatory Construction and Demolition Debris Recovery Ordinance (No. 27-06), effective July 1, 2006, which helped divert more than 26,000 additional tons from landfill in its first year of implementation.

16. In keeping with the Precautionary Principle, codified in Chapter 1 of the Environment Code, this Chapter requires diversion of recyclable or compostable materials from landfill for beneficial use as a deterrent to unsafe and wasteful practices. In this way, the City will create and maintain a healthy, viable environment for current and future generations, and will become a model of sustainability.

Section 2. The San Francisco Environment Code is hereby amended by adding Chapter 19~~18~~, Sections 1901~~1801~~ through 1912~~1812~~, to read as follows:

SEC.* 1901~~1801~~. *TITLE.

This Chapter shall be entitled "Mandatory Recycling and Composting".

SEC.* 1902~~1802~~. *DEFINITIONS.

For the purposes of this Chapter, the following words have the following meanings:

(a) "Adequate Refuse Collection Service" means that a dwelling or commercial property is serviced by a Collector for recyclables, compostables, and trash, and that the level of service is sufficient to contain the refuse generated at that dwelling or commercial property.

(b) "City" means the City and County of San Francisco.

(c) "Collection" means taking physical possession of and removing discarded material from the place of generation for subsequent off-site management of that material.

(d) "Collection Container" means the receptacle that is provided, designated and serviced by the collector for the collection of recyclables, compostables or trash.

(e) "Collector" means a person, firm or corporation licensed and permitted to collect refuse by the Director of Public Health pursuant to the provisions of the Refuse Collection and Disposal Ordinance adopted November 8, 1932, as amended, and any other collectors of discarded material not excluded under that ordinance.

(f) "Commercial Property" means a parcel or any portion of real property where refuse is generated that is not a dwelling, including schools, institutions, and City properties.

(g) "Compostable" means any material that can be broken down into, or otherwise become part of, usable compost (e.g., soil-conditioning material) in a safe and timely manner as accepted in San Francisco's compostables collection program, such as food scraps, soiled paper and plant trimmings. Compostable materials can also include disposable plastic food service ware and bags if labeled "Compostable", in accordance with the Food Service Waste Reduction Ordinance (No. 295-06) and Department of the Environment regulations for easy identification, meeting the ASTM Standard Specification (D6400) for compostable plastics, and consistent with State labeling law (California Public Resources Code Section 42359) that any plastic bag or food container labeled "Compostable" must meet the ASTM Standard Specification for compostable plastics.

(h) "Construction and Demolition Debris" means building materials generated from construction and demolition activities including, but not limited to, fully-cured asphalt, concrete, brick, rock, soil, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, fixtures, plastic pipe, metals, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction, deconstruction, demolition or land developments.

Hazardous waste, as defined in California Health and Safety Code Sections 25100 et seq., is not construction and demolition debris for purposes of this Chapter.

(i) "Customer" means any person being served food from a food vendor or event.

(j) "Department" means the San Francisco Department of the Environment.

(k) "Designated" means clearly labeled and color-coded for a material type, such as labeled blue receptacles for recyclables, green for compostables and black for trash.

(l) "Director" means the Director of the Department of the Environment or his or her designee.

(m) "Disposable Food Service Ware" means all containers, bowls, plates, trays, carton, cups, lids, straws, forks, spoons, knives, napkins and other items that are designed for one-time use for serving food.

(n) "Dwelling" means a residence, flat, apartment, or other facility, used for housing one or more persons.

(o) "Event" means any function that serves food and is permitted through any agency, including, but not limited to, the Department of Parking and Traffic, the Recreation and Park Department, the Port of San Francisco or, to the extent permitted by law, the National Park Service.

(p) "Food Vendor" means any and all sales outlets, stores, shops, vehicles or other places of business located or operating in the city that operate primarily to sell or convey foods or beverages to consumers, and stores that sell food or beverages in combination with a gasoline station.

(q) "Janitor" means the person who is hired by owners and managers of commercial properties and their contractors to process refuse on-site before it leaves the premises.

(~~p~~q) *"Manager" means the authorized agent for the owner of a building, structure or property, who is responsible for the day-to-day operation of said building, structure or property.*

(~~q~~r) *"Multifamily Property" means a property that includes multiple residential households and has a single account with collector(s) for recyclables, compostables and trash.*

(ts) "Person" means a natural person (including a resident, employee, or visitor), a firm, business concern, association, partnership, corporation or governmental entity, including the City and County of San Francisco and its departments, boards and commissions, and successors or assigns.

(ut) "Public Trash Container" means any receptacle installed by a public agency at a sidewalk, park or other public area and that is not under the control, unless otherwise required by this Chapter, of a multifamily or commercial property, food vendor or event manager.

(vu) "Recyclable" means any material that can be sorted and reconstituted, for the purpose of using the altered form in the manufacture of a new product, as accepted in San Francisco's recycling collection program, such as paper, bottles and cans. Recycling does not include burning, incinerating, converting, or otherwise thermally destroying solid waste.

(wv) "Refuse" has the meaning set forth in the Refuse Collection and Disposal Ordinance adopted November 8, 1932, as amended, and includes recyclables, compostables, and trash, but not construction and demolition debris or hazardous waste, all as defined in this Chapter.

(xw) "Source Separate" means to divide refuse at the place of discard generation, prior to collection, into separate containers that are designated for recyclables, compostables or trash.

(yx) "Transfer Station" means a facility that is permitted under Health Code Section 294 to receive discarded materials and transport them to a landfill for disposal.

(zy) "Trash" means material that is designated for landfill disposal by the collector and does not include either recyclable or compostable materials. The term "trash" does not include hazardous waste, as defined in California Health and Safety Code Sections 25100 et seq., or construction and demolition debris as defined in this Chapter.

SEC.** 19031803. **SOURCE SEPARATION OF REFUSE REQUIRED.

All persons in San Francisco must source separate their refuse into recyclables, compostables and trash, and place each type of refuse in a separate container designated for disposal of that type of refuse. No person may mix recyclables, compostables or trash, or deposit refuse of one type in a collection container designated for another type of refuse, except as otherwise provided in this Chapter.

SEC. 19041~~804~~. ***REQUIREMENTS FOR OWNERS OR MANAGERS OF MULTIFAMILY AND COMMERCIAL PROPERTIES.***

(a) Owners or managers of multifamily or commercial properties must provide Adequate Refuse Collection Service to the tenants, employees, contractors, and customers of the properties.

(b) Owners or managers of multifamily or commercial properties must supply appropriate containers, placed in an appropriate location, to make source separation of refuse convenient for the tenants, employees, contractors, and customers of the properties. The containers must:

(1) Be of appropriate number and size in light of the recyclable, compostable, and trash quantities reasonably anticipated to be generated at the location;

(2) Bear appropriate signage and be color coded to identify the type of refuse to be contained—blue for recyclables, green for compostables, and black for trash—and meet any additional design criteria established by the Department by regulation; and,

(3) Be placed as close together as possible, to provide equally convenient access to users.

(c) Owners or managers of multifamily or commercial properties must provide information and/or training for new tenants, employees and contractors, including janitors~~custodians~~*, on how to source separate recyclables, compostables and trash, and must re-educate existing tenants, employees and contractors at least once a year.*

(d) Owners and managers of commercial properties or their contractors will work with on-site janitors to create effective source separation programs as a means of achieving compliance, meeting citywide diversion goals, and achieving the diversion or disposal rate reported annually to the State of California.

(e~~d~~) New construction or expansion of multifamily or commercial properties may be subject to Department of Building Inspection requirements, such as Administrative Bulletin 088 and Building Code Chapter 13, Section 1304C, to provide adequate space for recyclables and compostables, which includes requiring any chute systems to keep compostables, recyclables and trash separate.

SEC.* 1905~~1805~~. *REQUIREMENTS FOR OWNERS OR MANAGERS OF FOOD VENDORS AND EVENTS.

(a) Owners or managers of food vendors and events must provide Adequate Refuse Collection Service to their employees, contractors and customers.

(b) Owners or managers of food vendors and events must supply appropriate containers, placed in appropriate locations, to make source separation of recyclables, compostables, and trash convenient for the employees, contractors, and customers of the food vendors and events. The containers must:

(1) Be of appropriate number and size in light of the recyclable, compostable, and trash quantities reasonably anticipated to be generated at the location;

(2) Bear appropriate signage and be color coded to identify the type of refuse to be deposited—blue for recyclables, green for compostables, and black for trash—and meet any additional design criteria established by the Department by regulation; and,

(3) Be placed as close together as possible to provide equally convenient access to users.

(c) Owners or managers of food vendors and events must provide information and/or training for new tenants, employees, and contractors, including janitors~~custodians~~*, on how to source separate recyclables, compostables, and trash, and must re-educate existing tenants, employees, and contractors at least once a year.*

(d) Food vendors that provide disposable food ware must have at least one container each for recyclables, compostables and trash for use by customers and visitors, placed inside near a main exit, unless that food vendor does not use disposable food ware for on-site consumption and serves minimal to go orders per day, but not including any to go orders delivered to residents by a delivery service. *Food vendors meeting the requirements of this Section are exempt from the requirement of Public Works Code Section 173 to place "a litter receptacle outside each exit." Multiple food vendors that provide disposable food service ware and share a common eating area may share an appropriate number, size, and placement of containers for recyclables, compostables and trash for convenient use by customers or visitors.*

(e) Food vendors and events must not put any fats, oils or grease in trash collection containers.

SEC. 1906~~1806~~. ***REQUIREMENTS FOR REFUSE COLLECTORS, TRANSFER STATIONS, AND PROCESSING FACILITIES.***

(a) All collectors must appropriately designate the collection containers they provide to customers for source separation of recyclables, compostables and trash. The containers must:

(1) Bear appropriate signage that allows users to clearly and easily identify which containers to use for recyclables, compostables or trash;

(2) Be color-coded—blue for recyclables, green for compostables and black for trash; and,

(3) Bear the name of the collector to whom the container belongs.

(b) (1) If a collector finds materials that are not the correct type as designated for that container, such as recyclables or compostables in a trash container, or trash in a compostables or recyclables container, the collector then must leave a tag on the container identifying the incorrect materials.

(2) If the collector continues to find incorrect materials in a collection container after the collector has left a previous tag for that customer and that type of container, the collector must leave another tag on the container identifying the incorrect materials and send a written notice to the person who subscribes for that collection service.

(3) If the collector continues to find incorrect materials in a collection container after the collector has already left two or more tags for that customer and that type of container, the collector may refuse to empty the container, subject to California Code of Regulations Title 14, Section 17331, or as determined by the Director of Public Health or his or her designee. If the container is not emptied, the collector must leave a tag and send a written notice to the person who subscribes for the collection service, identifying the incorrect materials and describing what action must be taken for the materials to be collected; provided, however, that a collector may not refuse on this basis to empty containers from multifamily or commercial properties with multiple tenants and joint account collection service.

(4) The collector shall, upon request, provide to the Director a list of the names and addresses of those persons who have received tags or notices or whose containers have not been emptied due to non-compliance with this Chapter, or copies of the tags or notices issued by the collector. The collector shall also provide to the Director, upon request, a list of the names, addresses, and service levels of the collector's customers and any additional information required by the Director.

(c) Within 90 days of the end of each calendar year, each collector must submit to the Department, on a form specified by the Director, an annual report of all tons collected by material type and to whom the material was sent.

(d) No person may deliver recyclables or compostables, including those mixed with trash, to a landfill or transfer station for the purpose of having those materials landfilled, except as follows:

(1) A collector may drop off recyclables or compostables at the San Francisco transfer station for landfill if the transfer station has agreed to provide to the Director, upon request, audits of collection vehicles for a specified period going forward in time. The transfer station's audit shall report the quantity of recyclables or compostables, stated as estimated tons per load or as a percentage of the loads, deposited at the transfer station by collection vehicles specifically identified in the request over a reasonable period of time occurring after the request.

(2) A processing facility that sorts and reconstitutes recyclables for the purpose of using the altered form in the manufacture of a new product or turns compostables into usable and marketable compost (e.g., soil-conditioning) material may send to a landfill a minor portion of those materials that constitutes unmarketable processing residuals, if the processing facility provides to the Director, upon request, audits of specific collection vehicles for a specific period going forward in time, of the quantities of recyclables or compostables sent to the landfill from the processing facility.

(e) No person may deliver trash from the city, including trash mixed with recyclables or compostables, to a processing facility, unless the processing facility has agreed to provide to the Director, upon request, audits of collection vehicles for a specified period going forward in time. The processing facility's audit shall report the quantity of trash, stated as estimated tons per load or as a percentage of the loads, deposited at the processing facility by collection vehicles specifically identified in the request over a reasonable period of time occurring after the request.

SEC.* 1907~~1807~~. *REQUIREMENT TO SUBSCRIBE TO REFUSE COLLECTION SERVICE.

Owners of residential, multifamily or commercial properties, events or other facilities that generate refuse must subscribe to and pay for Adequate Refuse Collection Service, and provide an accessible location for sufficient levels of service with collector(s) for source separated recyclables, compostables and trash, except as otherwise provided in this Chapter. Owners of such properties are responsible for any failure to subscribe to or pay for sufficient levels of refuse collection service. The Director of Public Health, pursuant to Health Code Article 6, as amended, shall enforce requirements for adequate and continuous refuse collections services.

SEC.* 1908~~1808~~. *ENFORCEMENT.

(a) The Director and his or her designee may administer all provisions of this Chapter and enforce those provisions by any lawful means available for such purpose, except as otherwise provided in this Chapter.

(b) To the extent permitted by law, the Director may inspect any collection container, collection vehicle load, or receiving facility for collected trash, recyclables or compostables.

(c) Except as otherwise provided in this Chapter, the Director of the Department of Public Health or his or her designee may impose administrative fines for violations of those provisions of this Chapter, or of rules and regulations adopted pursuant to this Chapter, that pertain to the jurisdiction of the Department of Public Health.

(d) Except as otherwise provided in this Chapter, the Director of Public Works or his or her designee may impose administrative fines for violations of those provisions of this Chapter, or of any rule or regulation adopted pursuant to this Chapter, that pertain to the jurisdiction of the Department of Public Works.

(e) San Francisco Administrative Code Chapter 100, "Procedures Governing the Imposition of Administrative Fines," as amended, is hereby incorporated in its entirety and shall govern the imposition, enforcement, collection, and review of administrative citations issued to enforce this Chapter and any rule or regulation adopted pursuant to this Chapter; provided, however, that:

(1) The Director of Public Works or the Director of Public Health may adopt regulations providing for lesser penalty amounts than those provided in Administrative Code Section 100.5;

(2) The fine for any violation at a dwelling or commercial property that generates less than one cubic yard of refuse per week may not initially exceed $100; and,

(3) No person who is the owner, tenant, manager, employee, contractor, or visitor of a multifamily or of a multi-tenant commercial property shall be subject to fines or penalties for violation of Section 1903~~1803~~ (but will remain subject to such enforcement for violations of section 1904 and other sections of the Ordinance)*, unless and until the Director of the Department of the Environment has adopted specific regulations setting out the liability of such persons. The Director shall not adopt such regulations prior to July 1, 2011.*

(f) The City shall use administrative penalties collected under this Chapter, including recovery of enforcement costs, to fund implementation and enforcement of this Chapter. Remedies under this Chapter are in addition to and do not supersede or limit any and all other remedies, civil or criminal.

SEC.* 1909~~1809~~. *FORMS, REGULATIONS AND GUIDELINES.

(a) After public notice and a public hearing, the Director may adopt necessary forms, regulations, and guidelines to implement this Chapter.

(b) The Department shall provide assistance regarding compliance with this Chapter.

(c) The Department shall provide information on its website regarding what materials are accepted as recyclables, compostables, and trash under this Chapter.

SEC.* 1910~~1810~~. *EXCEPTIONS

(a) A property owner or manager may seek a waiver from the Director of all or portions of this Chapter, if the applicant submits documentation, using a form specified by the Director and including a signed affidavit under penalty of perjury, that shows that the property does not have adequate storage space for containers for recyclables, compostables or trash. In cases where after on-site verification space limitations are determined to exist, the Director shall evaluate the feasibility of sharing containers for recyclables, compostables or trash with contiguous properties, and, where feasible, requiring container sharing in lieu of providing a waiver.

(b) Except as otherwise required by the Director, a collector may drop-off compostables or recyclables at the San Francisco transfer station that have been collected from public trash containers. The Director may require public trash containers to have a recyclables receptacle attached.

SEC.* 1911~~1811~~. *DISCLAIMER OF LIABILITY.

The degree of protection required by this Chapter is considered to be reasonable for regulatory purposes. The standards set forth in this Chapter are minimal standards and do not imply that compliance will ensure safe handling of recyclables, compostables or trash. This Chapter shall not create liability on the part of the City, or any of its officers or employees for any damages that result from reliance on this Chapter or any administrative decision lawfully made in accordance with this Chapter. All persons handling discarded materials within the city should be and are advised to conduct their own inquiry as to the handling of such materials. In undertaking the implementation of this Chapter, the City is assuming an undertaking only to promote the general welfare. It is not

assuming, nor is it imposing on its officer and employees, an obligation for breach of which it is liable in money damages to any person who claims that such breach proximately caused injury.

SEC.* 1912~~1812~~. *DUTIES ARE DISCRETIONARY.

Subject to the limitations of due process and applicable requirements of State or federal laws, and notwithstanding any other provisions of this Code, whenever the words "shall" or "must" are used in establishing a responsibility or duty of the City, its elected or appointed officers, employees or agents, it is the legislative intent that such words establish a discretionary responsibility or duty requiring the exercise of judgment and discretion.

Section 3. The San Francisco Public Works Code is hereby amended by amending Section 173, to read as follows:

SEC. 173. PLACEMENT AND MAINTENANCE OF LITTER RECEPTACLES.

(a) It is the intent of this Section to ensure that public areas are kept clean and free from litter.

(b) Any person, firm or corporation operating a grocery store, a liquor store or an establishment selling food or beverages for consumption off the premises shall place and maintain a litter receptacle outside of each exit from said premises for the use of the patrons thereof during business hours*; provided, however, that a person, firm, or corporation is not required under this Section to place and maintain a litter receptacle outside each exit if that person, firm, or corporation places and maintains a set of three containers for recyclables, compostables and trash for use by customers and visitors as specified in Chapter* 19 ~~18~~ *of the Environment Code.*

(c) Any person, firm, corporation, or property owner operating a place of employment shall provide and maintain adjacent to the place of employment sufficient ashtrays or other

receptacles for the disposal of cigarettes, cigars, and other similar combustible products used by employees and patrons who smoke. The Director of Public Works shall authorize the placement of such ashtrays or other receptacles in the public right-of-way where necessary.

(d) The design, capacity, location, and number of ashtrays and receptacles shall be prescribed by the Director of Public Works. Decals may be placed upon said receptacles subject to the limitations set forth in Section 171 of this Article.

(e) The receptacle shall be emptied when full and at the close of business each day and the contents thereof shall be stored or set out for collection in the same manner as other refuse generated in the operation of the business. Each receptacle shall be maintained in a clean and sanitary condition.

(f) Violation of this Section shall constitute an infraction and shall be punishable by a fine of not less than $80 nor more than $100; for a second offense by a fine not less than $150 nor more than $200; and for each additional offense by a fine not less than $250 nor more than $500. In the alternative, an administrative penalty not to exceed $250 may be assessed for each violation. Such penalty shall be assessed, enforced and collected in accordance with Section 39-1 of the Police Code.

Section 4. The San Francisco Health Code is hereby amended, by amending Sections 291, 291.1, 291.2, 291.4, 291.7, 291.11, 291.12, 291.15, and 291.17, and by repealing the current Section 291.16 and adding a new Section 291.16, to read as follows:

SEC. 291. OWNER RESPONSIBILITY FOR MAINTENANCE OF REFUSE COLLECTION SERVICE TO DWELLINGS *AND COMMERCIAL PROPERTIES*; DEFINITIONS.

Unless the context otherwise specifies or requires, the terms defined in this Section shall, for all purposes of this Article, have the meanings herein specified, the following

definitions to be equally applicable to both the singular and plural forms of any of the terms herein defined:

(a) The term "City" means the City and County of San Francisco;

(b) The term "Collector" means a refuse collector duly licensed pursuant to the provisions of the Initiative Ordinance;

(c) The term "Commercial Property" means a parcel or any portion of real property where Refuse is generated that is not a Dwelling, including schools, institutions, and City properties.

(d) ~~(c)~~ The term "Director" means the Director of Health of the City, or his authorized agents;

(e) ~~(d)~~ The term "dwelling" means a residence, flat, apartment, or other facility, used for housing one or more persons in the City and County of San Francisco;

(f) ~~(e)~~ The term "Initiative Ordinance" means the Initiative Refuse Collection and Disposal Ordinance adopted November 8, 1932, as amended; and

(g) ~~(f)~~ The term "Owner" when used with reference to a dwelling shall mean, and shall conclusively be deemed to be, the legal Owner of the dwelling *and when used in reference to a commercial property shall mean, and shall conclusively be deemed to be, the legal Owner of the commercial property*.

SEC. 291.1. OWNER RESPONSIBLE FOR REFUSE COLLECTION SERVICE.

The owner of any dwelling *or commercial property* shall subscribe to and pay for *adequate* refuse collection service rendered to such dwelling *or commercial property* by a collector and shall provide at a location accessible to the collector *for* an adequate container or containers for deposit of refuse of such capacity as the Director of Public Works may prescribe. The necessity for and type of refuse collection service required and the rates charged therefor

shall be governed by the Initiative Ordinance, *Chapter* 19~~18~~ *of the Environment Code, and any applicable rules and regulations adopted by the Director of Public Health*.

Nothing in this Section is intended to prevent an arrangement or the continuance of an existing arrangement, under which payments for refuse collection service are made by a tenant or tenants, or any agent, in behalf of the Owner. However, any such arrangement will not affect the Owner's obligation to the City.

SEC. 291.2. FAILURE TO INITIATE SERVICE, *MAINTAIN ADEQUATE SERVICE,* OR TO PROVIDE SUFFICIENT REFUSE CONTAINERS.

When an owner fails to initiate adequate refuse collection service within 15 days of occupancy of a Dwelling *or commercial property* by any person, *including a business entity, or fails to maintain adequate refuse collection service*, the Director will *evaluate the need for service and what would constitute adequate service in this context, and, where appropriate,* give the Owner *an order from the Director* ~~*notification*~~ that such service *or additional service* is required. *In determining the need for service or additional service, the Director may make use of any relevant information or evidence, including information provided by the Collector regarding the existing level of service.* A copy of *the Director's order* ~~*said notice*~~ will be sent to the Collector. If the Owner does not arrange with the Collector for service within 15 days from the date of mailing of the *order, or request within that time a hearing before the Director to dispute a service or change of service requirement* ~~*notice*~~, then the Collector shall, *consistent with the Director's order,* initiate, *maintain, or increase* ~~*and continue*~~ refuse collection service for said dwelling *or commercial property*.

When in the judgment of the Director additional refuse containers are required, they shall be provided by the Owner upon written notification from the Director.

The Director, in consultation with the Department of the Environment and after a public notice and hearing, may adopt forms, regulations, and guidelines to ensure the payment and collection of refuse services from any commercial property managers who fail to initiate or maintain sufficient refuse service, including standards and criteria for determining whether a Commercial property has provided for sufficient refuse service, or to otherwise implement and enforce Sections 291 et seq.

The Director of Public Health, or his or her designee, may impose administrative fines for violations of Sections 291.1 and 291.2, or any rules or regulations adopted by the Director to implement and enforce Sections 291 et seq. San Francisco Administrative Code Chapter 100, "Procedures Governing the Imposition of Administrative Fines," as amended, is hereby incorporated in its entirety and shall govern the imposition, enforcement, collection, and review of administrative citations issued to enforce this Chapter and any rule or regulation adopted pursuant to this Chapter; provided, however, that the Director may adopt regulations providing for lesser penalties than those provided in Administrative Code Section 100.5.

No person who is the owner, tenant, manager, employee, contractor, or visitor of a multifamily dwelling or of a multi-tenant commercial property shall be subject to fines or penalties for failure to provide adequate refuse collection service, unless and until the Director has adopted specific regulations establishing the responsibilities of such persons under this Article.

The fine for any violation at a dwelling or commercial property which generates less than one cubic yard of refuse per week may not initially exceed $100.

In addition to any administrative penalty assessed pursuant to this Article, the Director may assess the responsible Owner the reasonable enforcement costs incurred by the City, including reasonable attorneys' fees. The imposition of enforcement costs is within the discretion of the Director.

SEC. 291.4. COLLECTOR ENTITLED TO PAYMENT FOR SERVICES RENDERED.

Pursuant to the provisions of the Initiative Ordinance, the Collector shall be entitled to payment from the owner for services rendered. When the Owner has been directed to initiate service but fails to provide an adequate container or containers at an accessible location and the Collector attempts to collect refuse from the dwelling *or commercial property,* then such attempt shall be deemed the rendering of collection service for which Collector is entitled to compensation in the same manner and amount as if refuse had actually been collected. Should there be failure to make payment for any service rendered *to any dwelling* by the Collector*, or rendered to a commercial property pursuant to an order of the Director of Public Health under Section 291.2*, the means for effecting payment shall be in accordance with the procedure set forth hereunder.

SEC. 291.7. PAYMENT BY DEPARTMENT OF PUBLIC HEALTH LIEN.

Following ~~*Within 45 days following*~~ the receipt of the complaint filed in accordance with Section 291.5, the Director shall, regardless of any sale or other transfer of property following the date of receipt of such complaint, process the complaint for payment to the Collector from a continuing appropriation account so provided herein under Section 291.14, and the Owner shall be liable to the City for fees paid. The payment by the City will, upon the recording thereof in the manner herein provided, create a lien on the real property to which the service was rendered. The lien will be officially recorded in the County Recorder's files, the lien to carry and will include additional charges for administrative expenses of $50 or 10 percent of the amount owned, whichever is higher, *plus any applicable recording fees,* and interest at a rate of 1 1/2 percent per full month compounded monthly from the date of the recordation of the lien on all fees and charges due. The Owner shall be notified by the Director that the fees and charges are due to the City. In addition, the Owner shall be notified that if the fees and

charges remain unpaid, subsequent proceedings may be taken to make said fees and charges a special assessment on the real property to which said refuse collection service was rendered.

~~SEC. 291.9. DIRECTOR'S HEARING.~~

~~Prior to the report of delinquent collection services fees being submitted to the Board of Supervisors, the Director shall cause a hearing to be held as to each owner of the real property to which service was rendered. At such hearing, the Owner may make any protest or objection regarding inclusion on the list.~~

~~The Director shall fix a date, time and place of hearing and shall cause a notice, at least 10 days prior to said hearing, to be mailed to the Owners.~~

~~At the conclusion of the hearing, the Director shall issue a report of delinquent charges together with his recommendation as to any charge.~~

SEC. *291.11*. REPORTS OF DELINQUENCIES TRANSMITTED TO *THE DIRECTOR* ~~*BOARD OF SUPERVISORS*~~.

Any charges that remain unpaid by a residential property owner or a commercial property owner pursuant to an order of the Director under Section 291.2 for a period of 60 or more days after the date upon which they were billed are delinquent and may be collected in the manner set forth in this Article. A report of delinquent charges shall be transmitted to ~~*the Board of Supervisors by*~~ the Director. Upon receipt by the *Director* ~~*Board of Supervisors*~~ of the report, *he or she* ~~*it*~~ shall fix a time, date and place for hearing the report and any protests or objections thereto.

SEC. 291.12. HEARING.

The *Director* ~~*Board of Supervisors*~~ shall cause notice of the hearing to be mailed to the Owner of the real property to which the service was rendered not less than 10 days prior to the date of hearing. At the time fixed for the report, the *Director* ~~*Board of Supervisors*~~ shall hear it with any objections of the Owner liable to be assessed for delinquent accounts. The *Director* ~~*Board of Supervisors*~~ may make such revisions, corrections or modifications of the report as it may deem just and in the event that the *Director* ~~*Board of Supervisors*~~ is satisfied with correctness of the report (as submitted or as revised, corrected or modified), *the Director shall confirm the report* ~~*it shall be confirmed or rejected by resolution*~~. The decision of the *Director* ~~*Board of Supervisors*~~ on the report and on all protests or objections thereto shall be final and conclusive.

SEC. 291.15. MANNER OF GIVING NOTICES.

Any notice required to be given hereunder by the City, the Director or any Collector to an Owner shall be sufficiently given or served upon the Owner for all purposes hereunder if personally served upon the Owner or if deposited, postage prepaid, in a post office letter box addressed to the "Owner" at the official address of the Owner maintained by the Tax Collector of the City for the mailing of tax bills or, if no such address is available, to the Owner at the address of the dwelling *or commercial property*.

SEC. 291.16. INSPECTION FEE.

If the Director of Public Health causes a Dwelling or a Commercial Property to be inspected to determine whether the Owner has complied with Section 291.1, the Owner of the Dwelling or

Commercial Property shall pay an inspection fee equal to $167 per hour of Department of Public Health staff time spent during the inspection.

~~***SEC. 291.16. PENALTY.***~~

~~*Notwithstanding the provisions of Section 291.3 of this Article, any person who shall violate any of the provisions of Sections 291.1 or 291.2 of this Article shall be guilty of an infraction or a misdemeanor. If charged as an infraction, upon conviction thereof, said person shall be punished for the first offense by a fine of not less than $10 nor more than $50; and for a second and each additional offense by a fine of not less than $20 nor more than $100.*~~

~~*If charged as a misdemeanor, upon conviction thereof, said person shall be punished by imprisonment in the County Jail not exceeding one year or a fine not exceeding $1,000. The complaint charging such violation shall specify whether the violation is a misdemeanor of infraction, which decision shall be solely that of the District Attorney.*~~

SEC. 291.17. SEVERABILITY.

If any part or provisions of Sections 291 through *291.16* ~~*291.16*~~ or application thereof, to any person or circumstance is held invalid, the remainder of the Section, including the application of such part or provision to other persons or circumstances shall not be affected thereby and shall continue in full force and effect. To this end the provisions of the Sections are severable.

Section 5. The San Francisco Health Code is hereby amended by amending Section 293.1, to read as follows:

SEC. 293.1. VIOLATIONS.

It shall be unlawful for any person other than *the Collector,* an authorized City employee *for enforcement purposes,* or the *generator of recyclable materials* ~~*City's authorized curbside recycling program collectors*~~ to take, remove, move or otherwise appropriate *recyclable materials that have been placed in a container designated by a Collector for recyclables or to take, remove, move, or otherwise appropriate the container that is placed for collection* ~~*the container in which recyclable materials are placed for collection and the matters contained therein*~~. The City and its duly authorized collectors shall have the exclusive right to collect recyclable materials placed for collection in public sidewalk and street areas.

Section 6. **Environmental Findings.** On December 9, 2008, the Planning Department determined that the actions contemplated in this Ordinance are categorically exempt under the California Environmental Quality Act (California Public Resources Code sections 121000 et seq.). Said determination is on file with the Clerk of the Board of Supervisors in File No. 081404 and is incorporated herein by reference.

Section 7. **Severability.** If any part or provision of this ordinance, or the application thereof to any person or circumstance, is held invalid, the remainder of the ordinance, including the application of such part or provision to other persons or circumstances shall not be affected thereby and shall continue in full force and effect. To this end the provisions of the ordinance are severable.

Section 8. **Operative Date.** The operative date of this ordinance shall be 90 days after its effective date.

APPROVED AS TO FORM:
DENNIS J. HERRERA, City Attorney

By: Cecilia T. Mangoba
CECILIA T. MANGOBA
Deputy City Attorney

City and County of San Francisco

Tails

Ordinance

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

File Number: 081404 **Date Passed:**

Ordinance amending the San Francisco Environment Code by adding Chapter 18, Sections 1801 through 1812, entitled "Mandatory Recycling and Composting Ordinance," amending the San Francisco Public Works Code by amending Section 173, and amending the San Francisco Health Code by amending Sections 291, 291.1, 291.2, 291.4, 291.7, 291.11, 291.12, 291.15, 291.17, and 293.1, and by repealing the current Section 291.16 and adding a new Section 291.16, all to: (1) require all persons located in San Francisco to separate recyclables, compostables and landfilled trash and participate in recycling and composting programs; (2) provide enforcement mechanisms and penalties for violations; (3) ensure that all properties subscribe to refuse collection service; and (4) authorize a Department of Public Health inspection fee of $167 per hour; and making environmental findings and setting an operative date.

April 7, 2009 Board of Supervisors — SUBSTITUTED

June 9, 2009 Board of Supervisors — AMENDED, AN AMENDMENT OF THE WHOLE BEARING NEW TITLE

Ayes: 11 - Alioto-Pier, Avalos, Campos, Chiu, Chu, Daly, Dufty, Elsbernd, Mar, Maxwell, Mirkarimi

June 9, 2009 Board of Supervisors — PASSED ON FIRST READING AS AMENDED

Ayes: 9 - Alioto-Pier, Avalos, Campos, Chiu, Daly, Dufty, Mar, Maxwell, Mirkarimi
Noes: 2 - Chu, Elsbernd

June 16, 2009 Board of Supervisors — FINALLY PASSED

Ayes: 9 - Alioto-Pier, Avalos, Campos, Chiu, Daly, Dufty, Mar, Maxwell, Mirkarimi
Noes: 1 - Chu
Excused: 1 - Elsbernd

File No. 081404

I hereby certify that the foregoing Ordinance was FINALLY PASSED on June 16, 2009 by the Board of Supervisors of the City and County of San Francisco.

Angela Calvillo
Clerk of the Board

6/23/2009
Date Approved

Mayor Gavin Newsom

Seattle Composting Requirement Frequently Asked Questions

Why is Seattle considering prohibiting food from the garbage?

Seattle sends approximately 100,000 tons of food waste 300 miles to a landfill in Eastern Oregon each year, resulting in higher costs and greenhouse gas emissions.

Based on the success of Seattle's existing recycling and yard waste ordinances, Seattle Public Utilities (SPU) projects that the food waste law will divert 38,000 tons of food scraps from the landfill via composting, thus helping the city achieve its goal of recycling and composting 60 percent of its waste by 2015.

When would Seattle's composting requirement ordinance take effect?

If this ordinance is passed by City Council, SPU would begin an education campaign in October, 2014. Food waste would be prohibited from commercial and residential garbage beginning January 1, 2015. SPU would start enforcing the law on July 1, 2015.

What items would be prohibited from the garbage under the composting requirement ordinance?

Recyclable items, such as paper, uncontaminated cardboard, bottles, cups, jars and cans are currently prohibited from the garbage. Starting January 1, 2015, no food and compostable paper, including food-contaminated cardboard, paper napkins and paper towels, would be allowed in the garbage.

How would Seattle enforce this composting requirement ordinance?

Starting January 1, 2015, all commercial establishments that generate food waste or compostable paper would have to subscribe to a composting service, compost their food waste on-site, or self-haul their food waste for processing. (Single-family and apartments are already required to have composting service.)

As of July 1, 2015 all commercial, single-family and multi-family garbage containers that would be found to contain more than 10 percent recyclables or food waste by volume would face penalties of Seattle municipal code.

Single-family properties whose garbage contains more than more than 10 percent recyclables or food waste by volume would receive a notice on their garbage container and a $1 fine would be levied on their bi-monthly garbage bill.

Multi-family and commercial properties whose garbage contains more than 10 percent recyclables or food waste by volume would receive a warning notice. Upon the third notice, the property would receive a $50 fine.

Doesn't Seattle already prohibit food and recyclables from the garbage?

Seattle prohibited yard waste from the garbage in 1988.

Seattle prohibited recyclables from the garbage in 2005.

Seattle began curbside food waste collection in 2005.

In 2009, Seattle required all residential properties to either subscribe to food and yard waste collection or participate in backyard composting. Seattle businesses that have customer dining area disposal stations where customers discard single use packaging must collect recyclable and compostable packaging in clearly labeled bins and send it to a recycling or composting facility for processing.

Since late 2011 multi-family buildings have been required to provide compost collection service for their residents.

More than 300,000 commercial, single-family and multi-family units participate in food waste collection. SPU estimates that businesses and residents have diverted nearly 400,000 tons of food from the landfill since 2005.

How do Seattle residents feel about this requirement?

In a recent survey, 74% supported it and 11% opposed it.

What effect have Seattle's recycling and composting laws had on the city's recycling rate?

From 2003 to 2013, the amount of compostable and recyclable material that Seattle has diverted from the landfill each year has increased from 38.2 percent to 56.2 percent, or 407,125 tons a year. However, the growth of recycling has slowed down in recent years. This composting requirement is a necessary step to meeting our recycling goals.

Will businesses be held accountable if their customers or the general public put food in their garbage?

Public litter cans would exempt from the ordinance.

Garbage containers in customer dining areas would be exempt from the ordinance when a business provides containers for food waste collection.

What will happen to the food that is collected?

Seattle sends more than 125,000 tons of food and yard waste to composting processers, where it is turned into compost for local parks and gardens.

Won't food waste collection make a mess and attract pests?

Like garbage, food waste is collected at least once a week from commercial and residential properties, thus minimizing vector issues. Businesses and residents currently utilize compostable bags and other compost containers in their kitchens to further reduce pests and odors.

How can I get help starting food waste collection?

Seattle Public Utilities offers free assistance to businesses and residents to help them recycle and compost, including providing education materials in multiple languages. Visit **www.seattle.gov/util** or call **(206) 684-3000**.

Will this food waste collection save me money?

Normally customers that divert a high percentage of their food waste to composting can reduce their overall solid waste bill.

Do any other cities have similar laws?

Seattle is the latest of several cities that have passed food waste requirements, including Vancouver, BC, Portland, OR, San Francisco, CA, and New York, NY.

File #: Int 1162-2013, **Version:** A

Int. No. 1162-A

By Council Members James, Brewer, Chin, Fidler, Gentile, Koo, Rodriguez, Van Bramer, Mark-Viverito, Gennaro, Koppell, Lappin and Ulrich (by request of the Mayor)

A Local Law to amend the administrative code of the city of New York, in relation to commercial organic waste.

Be it enacted by the Council as follows:

Section 1. Subchapter 2 of chapter 3 of title 16 of the administrative code of the city of New York is amended by adding a new section 16-306.1 to read as follows:

§ 16-306.1 Organic waste. a. When used in this section or section 16-324 of this chapter:

"Arena" means an establishment or facility that hosts live sporting or entertainment events.

"Capacity" means the combined capacity of facilities that are capable of accepting and processing, consistent with the terms of this section and exceeding a nominal amount, organic waste expected to be generated by and collected from designated covered establishments.

"Catering establishment" shall have the same meaning as set forth in section 20-359 of this code.

"Covered establishment" means:

1. any location at which a food manufacturer has a floor area of at least twenty-five thousand square feet ;

2. any location at which a food wholesaler has a floor area of at least twenty thousand square feet;

3. any location at which a retail food store has a floor area of at least ten thousand square feet, or any retail food store that is part of a chain of three or more retail food stores that have a combined floor area space of at least ten thousand square feet and that operate under common ownership or control and receive waste

collection from the same private carter;

4. arenas or stadiums having a seating capacity of at least fifteen thousand persons;

5. any food service establishment that is part of a chain of two or more food service establishments that have a combined floor area of at least eight thousand square feet and that: (i) operate under common ownership or control; (ii) are individually franchised outlets of a parent business; or (iii) do business under the same corporate name, provided that the requirements of subparagraph (i) of paragraph 1 of subdivision c of this section shall not apply to any such food service establishment when the building or premises in which such food service establishment is located is in compliance with such requirement pursuant to paragraph seven of this definition;

6. any location at which a food service establishment has a floor area of at least seven thousand square feet, provided that the requirements of subparagraph (i) of paragraph 1 of subdivision c of this section shall not apply to any such location when the building or premises containing such location is in compliance with such requirement pursuant to paragraph seven of this definition;

7. any building or premises where food service establishments having a total combined floor area of at least eight thousand square feet are located and where the owner of the building or premises, or its agent, arranges or contracts with a private carter for the removal of waste from food service establishments having no less than eight thousand square feet of such building or premises, provided that any such food service establishments shall comply with the requirements of subparagraphs (ii), (iii) and (iv) of paragraph 1 of subdivision c of this section, but such requirements shall not apply to the owner or agent of any such building or premises;

8. any location at which a food preparation establishment has a floor area of at least six thousand square feet;

9. any catering establishment that is required to provide for the removal of waste pursuant to section 16-116 of this code whenever the anticipated attendance for any particular event is greater than one hundred

persons;

10. any food service establishments located within and providing food to one or more hotels totaling at least one hundred sleeping rooms; and

11. sponsors of a temporary public event.

"Designated area" means within a one hundred mile radius of the city.

"Food manufacturer" means any establishment that processes or fabricates food products from raw materials for commercial purposes, provided that it shall not include any establishment engaged solely in the warehousing, distribution or retail sale of product.

"Food preparation establishment" means a business that is primarily engaged in providing food or food services for a temporary, fixed time, or based on contractual arrangements for a specified period of time at locations other than such establishment's permanent place of business.

"Food service establishment" means any premises or part of a premises that is required to provide for the removal of waste pursuant to section 16-116 of this code where food is provided directly to the consumer, whether such food is provided free of charge or sold, and whether consumption occurs on or off the premises. Food service establishment shall include, but not be limited to, full-service restaurants, fast food restaurants, cafes, delicatessens, coffee shops, and business, institutional or government agency cafeterias, but shall not include retail food stores, convenience stores, pharmacies, and mobile food vending units, as such term is defined in section 89.03 of the health code. Food service establishment shall also not include any premises or place of business where the sole or primary source of food is a refreshment counter where the available food is limited to items such as beverages, prepackaged items, and snacks.

"Food wholesaler" means any establishment primarily engaged in the wholesale distribution of groceries and related products including, but not limited to, packaged frozen food, dairy products, poultry products, confectioneries, fish and seafood, meat products, and fresh fruits and vegetables but shall not apply to establishments that handle only pre-packaged, non-perishable foods.

"Hotel" shall have the same meaning as set forth in section 27-2004 of the housing maintenance code.

"In vessel composting" means a process in which organic waste is enclosed in a drum, silo, bin, tunnel, reactor, or other container for the purpose of producing compost, maintained under controlled conditions of temperature and moisture and where air-borne emissions are controlled.

"Organic waste" shall have the same meaning as set forth in section 16-303 of this title, except that for purposes of this section, organic waste shall not include food that is donated to a third party, food that is sold to farmers for feedstock, and meat by-products that are sold to a rendering company.

"Private carter" means a business licensed by the business integrity commission pursuant to title 16-A of this code.

"Retail food store" means any establishment or section of an establishment where food and food products offered to the consumer are intended for off-premises consumption, but shall exclude convenience stores, pharmacies, greenmarkets or farmers' markets and food service establishments.

"Sponsor of a temporary public event" means the applicant for a street activity permit pursuant to chapter 1 of title 50 of the rules of the city of New York, or any successor provision, for any activity on a public street, street curb lane, sidewalk or pedestrian island or plaza with an anticipated attendance of greater than five hundred persons per day where the activity will interfere with or obstruct the regular use of the location by pedestrian or vehicular traffic. Such term shall not include activities conducted pursuant to a valid film permit, demonstrations, parades or block parties.

"Stadium" means an establishment or facility that hosts live sporting or entertainment events.

b. The commissioner shall, on a regular basis and no less than annually, evaluate the capacity of all facilities within the designated area and the cost of processing organic waste by composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule. If the commissioner determines that there is sufficient capacity and that the cost of processing organic waste consistent with this section is competitive with the cost of disposing of organic waste by landfill or incineration,

he or she shall designate by rule all covered establishments or a subset of covered establishments, based on any criteria, among such covered establishments, that generate a quantity of organic waste that would not exceed the evaluated capacity. All such designated covered establishments shall comply with the requirements of subdivision c of this section beginning no later than six months following such designation. In addition, the commissioner shall include in his or her evaluation the capacity of any facilities outside of the designated area that have arrangements or contracts with transfer stations or private carters to accept and process organic waste generated by and collected from covered establishments.

c. 1. Each designated covered establishment shall:

i. either (A) ensure collection by a private carter of all organic waste generated by such establishment for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule, (B) transport its own organic waste to a facility that provides for composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule, provided that the covered establishment first obtains a registration issued by the business integrity commission pursuant to subdivision b of section 16-505 of this code, or (C) provide for on-site in vessel composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule for some or all of the organic waste it generates on its premises, provided that it arranges for the collection or transport of the remainder of such organic waste, if any, in accordance with clause (A) or (B) of this subparagraph;

ii. post a sign, which shall be in addition to any other sign required to be posted pursuant to this code, that states clearly and legibly the trade or business name, address, and telephone number of, and the day and time of pickup by, the private carter that collects the covered establishment's organic waste, that such covered establishment transports its own organic waste, or that such covered establishment provides for on-site processing for all of the organic waste it generates on its premises, provided that:

(A) such sign shall be prominently displayed by affixing it to a window near the principal entrance to

the covered establishment so as to be easily visible from outside the building or, if this is not possible, prominently displayed inside the covered establishment near the principal entrance;

(B) catering establishments shall not be required to display on such sign the day and time of the pickup by the private carter that collects the establishment's organic waste; and

(C) this paragraph shall not apply to sponsors of temporary public events;

iii. provide separate bins for the disposal of organic waste in any area where such organic waste is generated and disposed of; and

iv. post instructions on the proper separation of organic waste where such instructions will be visible to persons who are disposing of organic waste, provided that this subparagraph shall not apply to sponsors of temporary public events.

2. Any covered establishment that arranges for the collection by a private carter of its organic waste pursuant to this subdivision shall not commingle such organic waste with other designated and non-designated recyclable material or solid waste, and shall place such organic waste out for collection by a private carter in a container or containers that (i) has a lid and a latch that keeps the lid closed and is resistant to tampering by rodents or other wildlife, (ii) has the capacity that meets the disposal needs of the covered establishment and its private carter, (iii) is compatible with the private carter's hauling collection practices, and (iv) is closed and latched at the time it is placed out for collection.

3. Any private carter that collects source separated organic waste from a covered establishment shall either:

i. deliver collected organic waste to a transfer station that has represented that it will deliver such organic waste to a facility for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule; or

ii. deliver such organic waste directly to a facility for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule.

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d. Any transfer station that receives source separated organic waste pursuant to this section shall deliver or have delivered such organic waste directly to a facility that accepts organic waste for purposes of composting, aerobic or anaerobic digestion, or any other method of processing organic waste that the department approves by rule. This subdivision shall not apply to waste that cannot be processed at an organic waste processing facility.

e. The provisions of this section relating to private carters shall be enforced by the business integrity commission. The provisions of this section relating to covered establishments shall be enforced by the department, the department of health and mental hygiene, and the department of consumer affairs.

f. The department, the business integrity commission, the department of health and mental hygiene, and the department of consumer affairs may promulgate any rules necessary to implement this section, including, but not limited to, rules establishing reporting requirements sufficient to demonstrate compliance with this chapter.

g. Any person who owns or operates two or fewer food service establishments may request, and the commissioner shall grant, a waiver of the requirements of this section if: (1) no single food service establishment has a floor area of at least seven thousand square feet; (2) the food service establishment or establishments are individually franchised outlets of a parent business covered by paragraph five of the definition of "covered establishment" set forth in subdivision a of this section; and (3) the owner or operator establishes that such food service establishment or establishments do not receive private carting services through a general carting agreement between a parent business and a private carter. Such waiver shall be valid for twelve months and shall be renewable upon application to the commissioner via the department's website.

§ 2. The opening paragraph of subdivision a of section 16-324 of the administrative code of the city of New York, as amended by local law number 77 for the year 2013, is amended to read as follows:

a. Subject to the provisions of subdivision b of this section, any person who violates this chapter, except section 16-306.1 of this chapter, subdivision g of section 16-308 of this chapter or section 16-310.1 of this

chapter, or any rule promulgated pursuant thereto, shall be liable for a civil penalty recoverable in a civil action brought in the name of the commissioner or in a proceeding returnable before the environmental control board, as follows:

§ 3. Section 16-324 of the administrative code of the city of New York is amended by adding a new subdivision e to read as follows:

e. (1) Any covered establishment that violates section 16-306.1 of this chapter or rules of the department, the department of health and mental hygiene, or the department of consumer affairs promulgated pursuant thereto shall be liable for a civil penalty recoverable in a civil action brought in the name of the commissioner or the commissioner of health and mental hygiene, or the commissioner of consumer affairs, or in a proceeding returnable before the environmental control board, the health tribunal at the office of administrative trials and hearings, or the administrative tribunal of the department of consumer affairs, in the amount of two hundred fifty dollars for the first violation, five hundred dollars for the second violation committed on a different day within a period of twelve months, and one thousand dollars for the third and each subsequent violation committed on different days within a period of twelve months, except that the department, the department of health and mental hygiene, and the department of consumer affairs shall not issue a notice of violation, but shall issue a warning, for any violation by a designated covered establishment that occurs during the first twelve months after the commissioner designates such covered establishment pursuant to subdivision b of section 16-306.1.

(2) Any transfer station that violates section 16-306.1 of this chapter or rules of the department promulgated pursuant thereto shall be liable for a civil penalty recoverable in a civil action brought in the name of the commissioner or in a proceeding returnable before the environmental control board in the amount of two hundred fifty dollars for the first violation, five hundred dollars for the second violation committed on a different day within a period of twelve months, and one thousand dollars for the third and each subsequent violation committed on different days within a period of twelve months, except that the department shall not

issue a notice of violation, but shall issue a warning, for any violation by a designated covered establishment that occurs during the first twelve months after the commissioner designates such covered establishment pursuant to subdivision b of section 16-306.1.

(3) Any private carter that violates section 16-306.1 of this chapter or rules of the business integrity commission promulgated pursuant thereto shall be liable for a civil penalty recoverable in a civil action brought in the name of the chair of the business integrity commission, or in a proceeding brought by the chair of the business integrity commission held in accordance with title 16-A of this code, except that the chair of the business integrity commission shall not issue a notice of violation, but shall issue a warning, for any violation by a designated covered establishment that occurs during the first twelve months after the commissioner designates such covered establishment pursuant to subdivision b of section 16-306.1.

§ 4. This local law shall take effect July 1, 2015.

JJH-12/18/13
LS 4466

THE WAY WE MANAGE OUR WASTE IS CHANGING

metrovancouver

SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Q & A on Metro Vancouver's Organics Disposal Ban

The way we manage our waste in changing. Together we are keeping food out of the garbage. In 2015, Metro Vancouver will introduce an organics disposal ban to support this change. These are some of the more common questions businesses in the region have asked.

1. What does this mean?

It means we will no longer throw food in the garbage. The ban is on disposal of the 'organic' waste. In this case 'organic' refers to things that can decay into compost, specifically food and yard waste.

Metro Vancouver, the regional government, manages all of the garbage produced from 2.3 million residents and businesses in the region (geographic range from Lion's Bay to Langley, in South Western British Columbia). Some businesses have been choosing to recycle their food waste for many years. Putting a disposal ban in place is a tool to encourage further reducing and recycling the food we waste.

2. Who is impacted?

The organics disposal ban applies to all waste generated in this region, whether that waste is residential, commercial, or institutional. Everyone needs to be separating food from regular garbage at home, work, school and public places.

3. Are we the first place to do this?

No, while our region is seen as a leader in waste management for having a firm commitment to recycling more of our garbage, we are not the first to put a disposal ban on organics. San Francisco, Halifax, Nanaimo, Portland, Massachusetts as examples. The upcoming organics ban is the latest change in the way we manage our waste, and like blue box recycling or cardboard-only bins, this practice will seem more normal over time.

4. What's wrong with putting food in the garbage?

In our region, about 20% of the garbage going to landfill or waste-to-energy is food; that's over 250,000 tonnes per year, and is similar to global numbers. When we throw away food all the nutrients, soil, water, money and energy that went into food production is lost. Further, food decaying under the landfill, where there is little oxygen, produces methane, a powerful greenhouse gas that contributes to global warming. In the right conditions, food that is separated from the garbage for proper processing can decay cleanly into compost or biofuel. So instead of wasting nutrients and producing greenhouse gasses, we can capture nutrients and produce soil to grow more food in or a biofuel to replace using fossil fuels.

5. What are examples of the types of food that are considered banned?

Food is thrown away all along the production line, from growing to processing, to retailing and into restaurants and homes. Restaurant and retail businesses might think of pre- consumer (in the kitchen before cooking) and post-consumer (plate scrapings and leftovers) foods. The disposal ban also includes packaged and frozen food, bakery, delis and cafes – any food you can think of.

6. How will my business separate food from regular garbage?

You're not creating more garbage, but separating the same garbage into different containers. You need to assess how you currently manage your garbage; including ordering, storage, kitchen preparation, staff rooms, bins and contracts. Metro Vancouver has a guide to getting started for restaurants. Visit metrovancouver.org and search 'Closing the Loop'. City websites have tips for residents, including apartments.

7. Is this going to cost me more money?

For many businesses, separating food from regular garbage significantly reduces the volume and service required for regular garbage. It also prompts us all to recognize and reduce waste. Some businesses already separating food from regular garbage find it cost-neutral, while others see slight decrease or increase in costs,

Q&A CONTINUED

depending on their bin sizes and hauling service contracts. In 2014 Metro Vancouver is working with small businesses to record and share examples and costs to separating food from regular garbage. Results will be shared by end of 2014.

8. Do I have to commit space and provide different access to store or haul away a separate bin for food?

You will need space for the food bin(s). Your garbage hauler may have solutions. You may be able to share a food bin with a neighbouring business or start to use smaller garbage bins.

9. Are there companies that provide services like hauling food to a compost facility, that can help me get started, or de-package food if required?

As more businesses start separating waste, more services are becoming available. The Recycling Council of BC Hotline at 604-REC-YCLE (604-732-9253) maintains a current list of service providers. Many hauling businesses that collect your regular garbage can also collect food waste. Other businesses only collect recycling.

10. Can I line the collection bins with plastic bags?

Nuisances like odour need to be managed in order to keep them from becoming a problem. Bins can be cleaned on the spot, or switched for cleaned bins at collection.

The facilities in our region make high-quality compost, and end users of that compost don't want product with plastics in it. Often plastic-looking bags labelled 'compostable', 'biodegradable' or similar often require very specific conditions to work. Also, it is difficult for employees to identify the bag type in large mixed waste piles. For these reasons plastic bag liners are generally not accepted.

There are some exceptions for commercial waste, which is high volume compared to residential waste. You need to clarify your options with your landlord or service provider. For home collection use a newsprint to line your bins, or tip and rinse regularly. In addition to plastic, examples of other contaminants to avoid are labels, wrapping, elastics, meat trays, plastic cutlery, and aluminum foil.

11. How will the ban be enforced and will there be fines once the disposal ban is in place?

Metro Vancouver has disposal bans on many other recyclable items like cardboard, paper and hard plastics. Enforcement is done when garbage loads are delivered to a disposal facility. There are fines associated with all disposal bans. Our priority is to keep food out of the landfill, not to develop an extensive fining process.

12. When does this start?

The organics disposal ban will come into effect in 2015. Initial enforcement will include warnings and information, and after a grace period surcharges will apply. Many households and businesses are separating food waste from regular garbage already.

Need more information? Visit Metro Vancouver.org and search 'Organic Disposal Ban'

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Boulder County Resource Conservation Advisory Board (RCAB) Meeting
November 19, 2014

Boulder County Recycling Center, Education Room, 1901 63rd Street, Boulder

AGENDA

1. Call to Order / Introductions	4:45 p.m.
2. Approval of Minutes – October 22, 2014	4:46 p.m.
3. Public Comment (Maximum Time Allocated 10 minutes)	4:47 p.m.
4. Priority Topic: Composting ACTION: Recommendations to BOCC on policy, program and infrastructure improvements needed to significantly increase organic diversion in individual municipalities and across the county. a. Subcommittee and Working Group Reports – Lisa Skumatz, Suzanne Jones/Bryce Isaacson, Hilary Collins b. Compost Recommendations/Discussion	4:50 p.m.
5. Priority Topic: Recommendations from Subcommittee on Zero Waste Funding for 2015 ACTION: RCAB Recommendation to BOCC	5:25 p.m.
6. Next Month's Meeting/Agenda topics a. Plan ahead for next priority topic – C&D b. Discussion about alternative systems for guaranteeing quorum, including changing the bylaws / working with the BOCC to allow a proxy	6:15 p.m.
7. Any Other Business	6:16 p.m.
8. Community Reports - Questions on written reports only (Please remember to send your report in advance!)	6:17 p.m.
Adjourn	6:30 p.m.

Resource Conservation Advisory Board (RCAB)

The Resource Conservation Advisory Board (RCAB) was formed in 2002 to advise the Board of County Commissioners on major waste diversion policies and strategies.

The purpose of the Advisory Board shall be to assist the Board of County Commissioners in reducing the amount and toxicity of waste generated in the county; to research, review and recommend changes in policy related to waste reduction, reuse, recycling and composting; to provide input on the development and management of facilities and programs; and as a result of these efforts to help Boulder County and its communities and partners to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution.

Boulder County Resource Conservation Advisory Board Meeting
Minutes Oct. 22, 2014

Present:
Alexander Armani-Munn – Nederland
Jack DeBell – CU Recycling
Lisa Friend – Boulder County (phone)
Suzanne (Zan) Jones – Eco-Cycle (phone)
Charles Kamenides – Longmont
Dan Matsch – Lyons
Lisa Morzel – At Large
Mark Persichetti – Louisville
Tim Plass – Boulder
Holly Running-Rabbit – Ward (phone)
Lisa Skumatz – At Large
Martin Toth – Superior

Active Members Not Present:
Tom Dowling – Lafayette
Shirley Garcia – Broomfield
Juri Freeman – At Large
Bryce Isaacson – Western Disposal
Bridget Johnson – Jamestown
Shari Malloy – At Large
Dan Stellar – Center for Resource Conservation

RCAB Staff Liaison:
Hilary Collins – Commissioners' Office/Sustainability
Austin Everett – Commissioners' Office/Sustainability

Guests:
Kevin Afflerbaugh – Western Disposal Services
Darla Arians – Boulder County Resource Conservation Division
Frank Bruno – Western Disposal Services
Polly Christensen – Longmont City Council
Sarah Linke – Boulder County Public Health
Kara Mertz – City of Boulder (phone)
Elizabeth Montalbano – Boulder County Public Health
Toby Russell – (CEO) Natural Capitalism Solutions
Kim Schlaepfer – Natural Capitalism Solutions
John Shepherd – Shepherd Sustainability
Nick Sterling – Natural Capitalism Solutions
Susie Strife – Sustainability Coordinator, Commissioners' Office

1. **Call to Order**

   Chair Mark Persichetti called the meeting to order at 4:57 p.m. with the understanding that no formal business would be conducted without a quorum. A quorum was achieved at 5:04 p.m.

2. **Public Comment** – None

3. **Special Introduction – Darla Arians, Interim Manager, Boulder County Resource Conservation Division**

   Darla received her degree from Naropa University with a concentration in Building Sustainable Environments. While at Naropa, Darla served as the Recycling and Waste Reduction Coordinator, and founded the Naropa zero waste program in 2002. For the past (nearly) five years, Darla has worked for the Boulder County Resource Conservation Division, coordinating all aspects of compost, trash, recycling and hard-to-recycle collection programs and contracts. She has spent extensive time working in the Hazardous Materials Management Facility (HMMF) and recycling center programs as well. She has also served as the chair of the county's internal Green Purchasing Zero Waste Subcommittee, secretary of the Colorado Product Stewardship Council, and chair of the Colorado Association for Recycling (CAFR) Policy Committee. Darla volunteers on the CAFR Summit Planning Committee.

4. **Approval of Minutes** – After a quorum was gained, no changes to the September 2014 minutes were suggested. Lisa M. moved approval of the draft minutes; Jack D. seconded, and the minutes were unanimously approved.

5. **Special Report: Data Collection/Analysis**

   Darla Arians reviewed a PowerPoint presentation (copy posted with the October meeting handouts). The Boulder County Resource Conservation Division (BCRCD) is in charge of licensing all of the waste haulers operating in the unincorporated county and collecting data from them each year. Staff members run into problems with inconsistent data, including challenges with hauling routes not matching up with municipal boundaries and the large amount of staff time required to compile data from the haulers.

   The categories of materials have changed over the years, and data on some materials is not being captured. To try and solve these challenges, the BCRCD has collaborated with the City of Boulder to align the two jurisdictions' reporting systems, update online reporting, and add more detail about where the collected material is going.

   Both the EPA and CU use versions of the "Re-TRAC" collection data software with positive results. A copy of the software will be purchased by BCRCD and the City of Boulder in 2015 and run as a pilot. All of the licensed haulers will be contacted and their data managed by the BCRCD. After the first year, the BCRCD will be looking for other communities to cost-share the program expenses: The purchase cost will be split by Boulder County and City of Boulder in 2015. Total cost to Boulder County is $7,491.00. The annual subscription fee is $3,606 – to be split by Boulder County and City of Boulder in 2015. This amount could be split between additional parties in the future.

Q&A

- Lisa S. has been working since 2006 to bring Re-TRAC to Boulder County; in the last two years she submitted a joint RREO grant proposal with Re-TRAC to buy the program for the state. The application was unsuccessful.
- Dan M. asked whether the haulers all log on to the same system when reporting: Yes, they will either have a drop-down menu or a button depending on set up of the user interface.
- Question about other sources of funding. Answer: the county charges a licensing fee to cover the cost of the service.
- As new haulers join is there a mechanism to introduce them to this program? Yes, the BCRCD watches for new haulers and follows up with them to get them licensed.
- Could this be combined with or replace the county survey that Lisa S. performs each year for RCAB? Yes, that is a possibility.
- How does this system address data issues? It doesn't really; it helps track flows and is a more streamlined report, which is easier for the haulers.
- Would the haulers have access to run reports, or is it just the county? Limited reporting capability is available, however each municipality would not be able to look up others' data, and haulers could not look up other haulers.
- At some point doesn't the information become part of the public record? Not individual haulers' data, however, the collective data does.
- Susie says the Commissioners are interested in offering a sustainability matching grant to Boulder County communities again in 2015, which might help support this effort.

Boulder County Sustainability Program Impact Analysis (Zero Waste Component) –
Presentation by Toby Russell (CEO) and Nick Sterling, Natural Capitalism Solutions

Summary: Susie Strife Introduced Toby and Nick and explained her intentions in recruiting Natural Capitalism's assistance. Before the sustainability tax was retracted from this year's ballot, Sustainability staff was trying to figure out a better way to track some of the social, economic, and environmental impacts of county services. Last spring a Request for Proposals (RFP) was sent out to help evaluate program impacts: Natural Capitalism was hired.

Mr. Russell gave a brief overview of the project: The goal is to gain increased visibility for the sustainability program, while identifying gaps in measurement and creating metrics that will enable county staff to compare different programs. The plan will also identify various improvements that can happen within the county's sustainability program, and provide recommendations for innovative yet feasible programs. Phase one, the data collection and gap analysis, should be completed by the end of December. Simultaneously Natural Capitalism will be working on creating a drafting tool and performing a "landscape review" that looks at best practices across the country. Phase two will be the program reviews and recommendations. In order to gather sufficient data, Natural Capitalism staff will look at operational costs, environmental impacts, and social impacts. The programs being examined under "waste" are single-family residential programs, multi-family residential programs, commercial, industrial, construction and demolition, composting infrastructure, recycling infrastructure, HMMF, and

the Partners for a Clean Environment (PACE). The evaluation will examine data over the past three years to create an average. Future benefits can be projected based on these averages.

Q&A

- Are parks and open space endeavors included, especially mitigation and biomass coming out of the mountains? Not to date. Natural Capitalism staff are working with parks and open space on specific items to be reviewed. The analysis will develop a baseline, that excludes flood experiences last year.
- Is there any plan on doing a dashboard to give the community an idea of where we are and where we are going? No doubt, we have needed this tool for a long time and the proposed sustainability tax is really the catalyst for starting it. "This is going to be very community-facing at the end of it. All the data collection it is a good opportunity to let the community know where we are, where we want to go, and what progress we're making."
- Could your analysis somehow incorporate or acknowledge the regulatory environment, the potential for intergovernmental agreements, and what kind of metrics and outreach would be needed? Yes.

6. Priority Topic: Composting

ACTION: Study Session to explore composting policy, program and infrastructure improvements needed to significantly increase organic diversion in individual municipalities and across the county.

Subcommittee and Working Group Reports

Optimization Subcommittee – Lisa Skumatz

Lisa introduced and reviewed the draft of a report by the optimization subcommittee provided with the October Meetings Handouts. The subcommittee is studying the effectiveness of the Boulder County Recycling Center (BCRC).

Q&A

- How long are the (BCRC sorting) shifts currently? 8 hours.
- In regards to the cardboard problem, have there been discussions with Western Disposal about the possibility of handling some of the recycling center's cardboard, and what resulting costs or revenues might be? It's partly a flow and process problem, Western Disposal has not been contacted about that opportunity, but the BCRC could discuss that with them. Currently problems arise from only having one shared baler, which means that the cardboard is processed after other materials and must be stored on site, causing storage problems. One solution would be to acquire another baler so that newspaper and cardboard can be baled simultaneously, thus not giving Western a commodity that could bring increased profits.
- Isn't everything more expensive to run in Boulder? What does Western Disposal have to deal with compared to other haulers? A: Without a detailed budget for comparison, the

topline comparison is “not favorable” - that includes talking to haulers and facilities in the Denver area.

- Comment: The conclusions being presented do not represent everyone on the optimization subcommittee. Ongoing discussions will take place.
- How does the subcommittee report fit with an analysis commissioned from the Kessler Group? Are they working independently or can they overlap? A: The subcommittee is not analyzing how the (BCRC) facility is laid out. The Kessler analysis is a county funded study; the scope of work should be available to compare the reports. Kessler successfully responded to an RFP to have an outside consultant compare BCRC data against the country and region.
- Comment: It would be unfortunate if we had two sets of findings that weren’t congruent or were refuting one another.
- Comment: The RFP was looking for an outside consultant to examine management and plant operations, and take confidential information to run their analysis then publish results that don’t reveal proprietary information. It will look at per-ton costs, and are there ways to look at operational and financial efficiencies.

Infrastructure Working Group – Tim Plass and Charles Kamenides with input from Suzanne Jones.
Tim and Charles reviewed the compost capacity report, which found there is no compelling need to develop stand-alone composting at this time. It suggested Boulder County explore avenues that expand access to the Western site. The working group will meet one more time to finalize recommendations.

Preliminary recommendations:

- Goal should be a level playing field with a publicly accessible facility that drives diversion countywide.
- Explore how Western’s facility could be opened to all haulers.
- Look at the relationship needs to address equity, governance, pricing, long-term viability and community value.
- Investigate future alternatives to the Weld County’s digester for food waste as a transfer option, because that facility is designed to handle contamination issues and could have a lower tipping fee.

The speakers emphasized that these are preliminary recommendations and more research needs to be conducted. There was a commitment that Eco-Cycle and Western would sit down and hammer out some common ground on facts; they will then report back so the committee can analyze the information and move forward.

Q&A

- Comment: We have to be careful that when private facility or community does something the community wants them to do (such as building a facility to handle yard waste), the investor can feel confident that government is not going to come in and subsidize the establishment of a whole competing facility. “You undermine the people willing to invest and take those initial steps.”

- Comment: This is also an opportunity to put more energy into smaller-scale compost operations. The report includes that there is a lot of value in backyard composting and that midsize (composting) is not happening now.

Education and Outreach Working Group – Hilary Collins
Key interests are collaboration, consistency, efficiency, and funding around educational messaging and signage. Door-to-door distribution has been very effective at getting information across, however it is more time-consuming and expensive than other options. There are a number of gaps, including the lack of consistent messaging specifically on "why to compost" rather than "how to compost." Another gap is the inconsistency of information across communities; examples include differing information on different websites.

Preliminary recommendations include:

- Formalizing educational collaborations through an IGA (intergovernmental agreement)
- Prioritizing in-person commercial and residential support services
- Looking to the EnergySmart model for a successful example of advising services
- Extending incentives for commercial recycling to all communities
- Examining efficiencies in translation and training and working towards collaboration between communities
- To share and build on existing resources and to find additional funding to support expanded education

The working group will finalize these recommendations and get them back to RCAB by November's meeting.

Q&A:

- How did you make the conclusion that there is not enough education? A: When programs are rolled out and there is little follow-through, they are not working. There is also a lack of consistent information across the board. When community residents go to a county website they should be able to find information on programs, even if their city does not currently offer them.

Report on Programmatic and Regulatory Options – Lisa Skumatz
Lisa Skumatz reviewed a PowerPoint presentation (copy posted with the October meeting handouts), continuing a discussion begun at the September meeting.

Q&A

- Can you give us the top 5 options? A: They vary for different communities; in communities that don't have contracts it is more complicated, everybody should be requiring reporting. This body (RCAB) and the respective communities should all be lobbying cities and states about how onerous the siting specs are (for diversion facilities).

Compost Recommendations/Discussion: Some information is still lacking, recommendations will be tabled until the November meeting.

7. November Meeting/Agenda topics

After discussion about winter holidays, Lisa S. moved the November meeting date be set for Nov. 19 and the December meeting moved to Dec. 17. _____ seconded the motion. The motion passed unanimously.

- Final recommendations on compost infrastructure, programs, policies, education, outreach, and signage
- Zero Waste Funding recommendation

8. Any Other Business

Comment: The current quorum system is quite frustrating, RCAB should think about alternative systems. Q: Can a proxy be used as a substitute? A: Not currently, according to bylaws. This discussion will be added to the December 17 agenda.

9. Community Reports - Questions on written reports only

- Lisa S. will be submitting a waste diversion plan to the Town of Superior Oct. 27.
- Bear-proof garbage and compost container rollouts in the City of Boulder are going well.

10. Adjournment:

Charles K. moved to adjourn at 6:43 p.m. Dan M. seconded the motion, and the meeting adjourned.

Boulder County - RCAB Community Zero Waste Report - November 2014

Staff members are wrapping up a 14-month project to drive Zero Waste in the mountains, funded by the USDA. One element was a partnership with the Town of Nederland and Boulder County Forest Health to begin accepting pine needles and dried grass for composting at both Community Forestry Sort Yards. Though needles and dried grass are recommended to be removed from gutters and the proximity of structures in the mountains, there had heretofore been no effective method for diverting the material. The USDA and Nederland partnered to pay for 10 roll-off containers of needles that were sent to composting from the mountains: A diversion of more than 20 tons! More details on success of the USDA project will be shared when the final report is completed next month.

RCAB OPTIMIZATION SUBCOMMITTEE – CONSENSUS REPORT

DATE: November 13, 2014

TO: RCAB

FROM: RCAB Optimization Subcommittee: Lisa Skumatz; Bridget Johnson; Tim Plass; Charles Kamenides; Suzanne Jones; Lisa Friend; Hilary Collins; Darla Arians; Jack DeBell

SUBJECT: Results of the BCRC Optimization (Tons & Costs) Subcommittee

CONSENSUS REPORT

The Subcommittee was established to further explore questions that arose in the RCAB around the costs / budgets and tonnage levels associated with the Boulder County Recycling Center (BCRC), which grew out of a detailed discussion in the Spring regarding why the BCRC paid relatively low incentives to haulers bringing tons to the facility, the underlying causes, and how the situation might possibly be remedied. At the May 28th RCAB meeting, the subcommittee was established to examine alternatives the County might consider to increase recycling tonnage, and optimize the cost and hauler funding for recycling at the Boulder County Recycling Center (BCRC).

The subcommittee identified a series of corollary questions that came with that overarching mandate (affecting tons or economics) including:

1. How do BCRC's hauler incentive compare to other regional facilities – in level and other factors?
2. Have haulers bringing tons (or who used to bring tons) been bringing more or less, and why? Are there opportunities or barriers?
3. Are there specific opportunities to increase the tons at the facility? How much? Are there regulatory ways to drive more tons to the facility? Can the facility handle that?
4. How do BCRC costs compare with other facilities? County? Operations? Are there changes that would improve the economics?
5. Are there changes to incentives or contracts that should be considered for future BCRC operations?
6. Are there opportunities / places to achieve higher revenues?

The Subcommittee's work is "high level", in some cases providing answers, and in others, identifying apparent issues, problems, or questions that warrant more detailed investigation. Many key issues associated with the Subcommittee's charter arise at a policy level, and this memo summarizes the high level findings.

1. **How do BCRC's hauler incentive compare to other regional facilities – in level and other factors?**

A great deal of the tonnage at the BCRC comes from municipalities and from private haulers. Haulers in particular, are sensitive to the gate fee paid for bringing material, as it is an important component of their operational revenues. Haulers are businesspersons, and while much of their business depends on contracted collection fees, their decisions about where they bring collected material hinges mostly on balancing questions of distance and revenue. Questions of *why* revenues are what they are may be of interest to RCAB and the County,[1] but are not generally part of the decision factors affecting hauler behavior, and as a consequence, tons brought to this facility vs. others.

In June and July, Bridget Johnson of Green Girl Recycling provided data (see Figure 1 and Figure 2) to the larger RCAB committee that demonstrated three things about Boulder County's facility:

- BCRC has historically paid less per ton to haulers than do other nearby regional facilities (shown by Figure 1, comparing 18 months of monthly per-ton revenues paid from July 2012-Dec 2013), and the revenues paid do not reflect market conditions, at least on the up-side.
- BCRC historically paid an uncertain amount – the amount haulers will be paid remained is unknown at the time they brought the materials. BCRC has worked to remedy this situation as of October 1.
- BCRC historically paid late – often 1-3 months after the materials are brought. The county has recently committed to pay within 45 days of the end of the month in which deliveries were made..

These factors have led the facility to be relatively unattractive to haulers in the region. Although the facility has generally hoped that the contributions that Boulder County communities made to the facility would lead to its use (regardless of on-going gate fees), haulers have difficulty maintaining a sustainable business when it is made impossible to know what your revenues will be from a given load. This has, based on interviews, caused some haulers to bring materials to other facilities that 1) pay better fees, 2) publicize these fees, and 3) pay in a timely way. The Committee understands the County has recently been working to address the posting problem, and on October 1 developed a process to publish rebate levels and try to pay more promptly. This was discussed aggressively in the Spring, and the Subcommittee is glad to see action on these issues.

Recommendations:

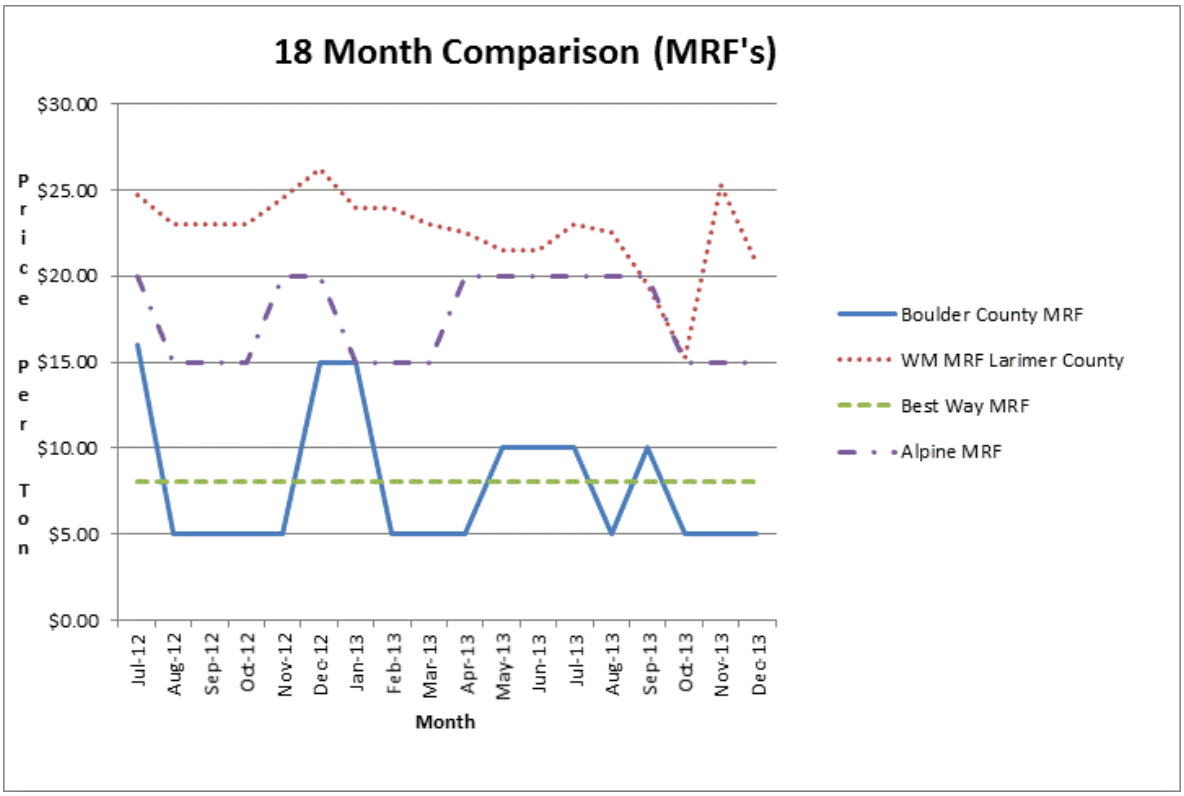
- Prioritize payments to haulers in the budget. This seems to be a crucial link in getting tons to the facility and should not be treated as a "residual", but more like an operating cost, or cost of doing business.[2]

[1] Considerations like whether MRFs that are similar in type, how many shifts are run, whether the facility is represents a vertically integrated operation, what overhead costs are assessed, etc. These are questions that have important applications for questions of how costs compare to other facilities, and should be (and are below) examined to determine how revenue streams can be changed; however, they are not relevant to the perspective of the haulers bringing in tons.

[2] One idea is to treat hauler revenues aside as an up-front, budgeted operating cost, putting dedicated dollars to this, with a budget of $x per ton set aside as an operating cost (perhaps specified as a share of the revenue line), and it should vary to some degree to reflect the market.

- Publish gate fees (completed). Other public facilities publish the gate fees they pay and the Committee is pleased that Boulder County has begun posting rebate fees each month on the county website http://www.bouldercounty.org/env/recycle/pages/recyclingrebates.aspx.
- Pay haulers more promptly for their deliveries (in progress). Other public facilities pay promptly within a month or so, and the Committee is pleased that Boulder County has begun to remedy the situation, recently committing to pay within 45 days of the end of the month[3] in which deliveries were made. To the degree the County can further reduce delays in payments, the practice will help reduce the disparity with other MRFs.
- Boulder County should consider accepting separated (non-single-stream) streams. The committee understands that the current facility layout limits this possibility, but if, in the future, the facility is revamped, the committee suggests the County consider working to integrate this change. Our analysis indicates BCRC is losing commercial tons because it is cost-effective for haulers to run targeted routes and do basic separation themselves and market independently outside the BCRC, at a loss of tons and revenues to BCRC.
- The County should consider whether it would be advantageous to enter into long-term contracts or arrangements with some regional haulers to increase tonnage volumes and consistency.

Figure 1: Comparison of Area MRF Prices Per ton (Source: Green Girl)



[3] Recognize that this commitment can allow a delay of 2.5 months, at its worst.

Figure 2: MRF Payment Practices Summary (Source: Green Girl)

MRF Payment Practices Comparison Chart 2014

updated Sept 22nd, 2014

	MRF	Payment Procedure	When they Pay for Materials	Payment Information	Posted Payments July:	Contact:
1	Boulder County MRF (1901 63rd Ave in Boulder)	Check to Haulers via Mail	On average: payments come 1-3 months after delivery	Boulder County does not post what they are paying for materials anywhere. Haulers do not know what they will expect for material.	As of September 2014: posted SS payments on Website: www.bouldercounty.org/env/recycle/pages/recyclingrebates.aspx	Jeff Callahan: 720-564-2221
2	WM: Larimer County MRF (5887 S. Taft Hill Road in Fort Collins)	Check to Haulers	They pay 1 month after receiving materials from haulers	They post Gate Payments on a phone line (970) 226-1101 and at the scale house.	commerical/residential SS= 20.50/ton, OCC=45/ton, Loose OCC=30/ton, News=10/ton, OP=80/ton, Aluminum=.35/lb	Connie: 970-226-1101
3	International Paper (500 Oak Street Wheat Ridge)	Check to Haulers	They pay 1 month after receiving materials from haulers	Each customer would call a 'rep' and get a quote for materials. Payments depend on volume and quality and grade of material. Is it picked up or delivered.	A call to main office to get pricing for that month.	Tameem Kaizer: 720-237-7353
4	Best Way Disposal MRF (650 Santa Fe St Colorado Springs)	Check to Haulers	They pay 1 month after receiving materials from haulers	They post to come in to get a 'scoop test' - section of material dropped that is analyzed for pricing	SS=$6-$8ton based on a scoop test of the material brought that month, OCC=scoop test based off 50% SW low)	Alica Archbald: 719-661-4844
5	Rocky Mountain Recycling (4744 Forest Street, Unit L Denver CO 80216)	Check to Haulers	They pay 1 month after receiving materials from haulers	Each customer would call a 'rep' and get a quote for materials. Payments depend on volume and quality and grade of material. Is it picked up or delivered.	Phone call to Rep for pricing - they follow OBM pricing. They follow the market very closely.	Tameem Kaizer: 720-237-7353
6	Alpine Waste MRF (7475 E 84th Ave Commerce City)	Check to Haulers	The pay 5 weeks after the month materials are received.	Contracts established with each hauler depending on grade of material and volume dropped.	Phone call to Kim to determine what they are paying this month:Brent quotes materials. Based on PPI SW #.	Kim Cameron: 303-656-6773
7	Waste Management Denver (Greenwood Village CO)	Check to Haulers	They pay 1-2 months after depending on contract	Contracts established with each hauler depending on grade of material and volume dropped.	You can call them to get pricing if you haul over a certain tonage to them monthly.	Scott Hutchings: 303-917-7068

2. Have haulers and communities bringing tons (or who used to bring tons) been bringing more or less, and why? Are there opportunities or barriers?

Interviews with a total of six area haulers and communities has identified a number of opportunities and barriers.

Figure 3: Key Results Summary of Hauler and Community Interviews

Opportunities / Pros	Barriers / Cons
• **More tons available**: Some haulers outside Boulder County might be interested in bringing tons to the facility because it is not run by a competitor hauler. (As a corollary, it was hypothesized that more tons might come to the facility if it wasn't run by a potential competitor in the Boulder area). • **More tons available**: The BCRC has arrangements with some other facilities to have tons come when they are busy – could that be extended to additional facilities? • **More tons available**: The County might	• **Economics**: The payments (level, uncertainty, and delays) are a real barrier to bringing tons • **Commercial**: There is no incentive for haulers, businesses, or towns to bring separate / semi-separated commercial tons because they only pay the mixed single stream gate fee – the separated commercial streams are worth more elsewhere. Interviewees recommended the County should consider the lower marginal processing cost in calculating these gate fees. • **Finances / Costs**: The facility costs appear to be higher than industry averages understood by the interviewees (some of whom were experts on regional and national costs). They cited industry average costs of about $60-70/ton; BCRC costs appeared to be about $95-$105, or at least $87-89/ton).[4]

[4] The industry average of $60-70 per ton was derived from research by Skumatz based on literature, data, and previous consulting projects on MRF operating costs. This general industry average figure was reconfirmed based on the local hauler and expert interviews conducted under this task and is quite similar to the range of $60-$75

Opportunities / Pros	Barriers / Cons
consider entering into (mutually beneficial) contracts with some haulers in the region to increase tons and consistency of delivery.	• **Finances / costs**: Interviewees wondered about the finances of the facility, and whether owner overheads, operator rewards, etc. were in line with other facilities or within norms. The County is currently reviewing this with an outside consultant. • **Finances / Costs**: Operating a facility with one shift may not be optimal; they could probably improve the economics with two shifts (some in Denver operate 2 shifts at 10 hours each), if tonnage increased to warrant two shifts.

Recommendations:

- Improve the payment situations as mentioned in Question 1
- Advertise to independent haulers in the near-county area that might currently only have an option to bring materials to a competitor
- Consider making overflow arrangements with additional MRFs if possible.
- Clarify the cost per ton to process at BCRC. BCRC operational costs seem to be about $15-$30/ton higher than the market average.
- Review all costs in the operation of the BCRC and make them transparent whether it is attributable to the direct operation of the BCRC or has some other purpose. Where possible, limit costs to those actually attributable in order to 1) attract more tons, and 2) improve the economics. RCAB may want to have a discussion about whether expenditures such as Boulder County community grants, educational expenditures, various overheads, and other expenditures should be included in the BCRC budget.[5]
- At a point at which additional tons can be attracted to justify a second shift, initiate a second processing shift.

3. **Are there specific opportunities to increase the tons at the facility? How much? Are there regulatory ways to drive more tons to the facility? Can the facility handle that?**

A number of factors affect tonnage brought to a facility: economics suggests rates and rebates can have an effect on tons[6]; mandates are an even more powerful factor, and of course other factors can also influence these decisions. The Committee identifies several possible sources for substantially increasing tons:

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stated in the draft consultant report, draft figures provided to the committee in early November 2014. The costs for the BCRC center are based on figures provided by the County and provided in Figure 4. The minimum total costs here are $95-$105 per ton (excluding depreciation); the largest share of the subset paid to Eco-cycle are about $80-$86. Draft consultant report figures provided to the Committee by Suzanne Jones in November 2014 suggest BCRC costs are about $87-89/ton. These figures are discussed later in this report.

[5] Boulder County may also want to periodically re-assure itself that contract clauses, incentives, etc. included in the budget are in line with industry best practices; this is discussed in a later question in this document.

[6] Some in the committee thought this would be a very limited driver; others thought its effect would be more substantial. However, the bulk of the following discussion focuses on mandates rather than economics.

- Boulder County Tons: Pay more competitive gate fees to attract Boulder County haulers not currently bringing materials to the facility.
- Outside Boulder County Tons: Pay more competitive gate fees to attract outside Boulder County haulers that might prefer to bring tons to a non-competitor's facility
- Current Commercial Tons: Pay more competitive gate fees for non-residential (commercial) streams to attract those tons from haulers in the area.
- Mandatory Commercial: Encourage the City of Boulder (and potentially other Boulder County communities) to mandate commercial recycling.
- Directed tons: Communities in the County may be able to direct tons to the facility if they undertake widely-advertised competitive contracts for collection service (most easily, residential).[7] The committee undertook some initial research into whether strategies are available to direct commercial tons but find that the County or others wishing to explore this option will need to engage legal counsel to determine what options may exist.
- More from Current streams: To get more from the current (residential) recyclers, Boulder County could either encourage (or conduct) cost-effective social marketing, and /or continue to encourage communities without PAYT to adopt it, increasing recycling.[8]

The committee did not feel we could count "moral suasion" (communities or haulers bringing tons out of the goodness of their heart instead of based on economic decisions) as a realistic and lasting method of getting tons to come to the facility.

The subcommittee did not have the ability to estimate these tons, with the exception of these three sources:

- Mandatory Commercial: If the City of Boulder mandated commercial recycling, the facility might see as much as 10,000-15,000 new tons.[9] If they mandate it for the top business sizes, the tonnage could be estimated from the share of employment covered by those firms. Every town of 10,000 that mandates recycling could bring an additional 1,500 or more tons (assuming the firms did not self-haul directly, and assuming they do not recycle as aggressively as Boulder's commercial sector currently).
- Directed tons: For every community of 10,000 persons that is induced to bring material to the facility, the additional tons to BCRC could be 2,700 tons / year.[10]
- More tons from current: If PAYT is adopted in a community of 10,000 persons, the recycling should increase 300-400 tons / year.[11] Naturally, those tons would have to be directed to BCRC to have a substantial impact on BCRC's tonnage.

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[7] NOTE that under the current gate fee system, this will likely result in higher rates or bids, because haulers would be able to get higher revenues from their own facilities or other area facilities.

[8] Some in the committee were skeptical that "advertising" would lead to substantial increases in tons; the County has reasonably strong recycling now. However, there are pockets of the county that lack PAYT, which could modify behavior and tons. Bans, of course, could also increase diverted tons, but subcommittee estimates do not address bans.

[9] City waste composition, City commercial tons estimate, times 90% capture. Excludes tons already recycled from the commercial sector. Pulled from computations from a zero waste modeling exercise by SERA for Boulder.

[10] This assumes 0.9 tpy per capita (from RCAB survey) times about 30% recycling in Boulder County excluding Boulder, times a population of 10,000.

The BCRC facility was originally built (in 2000) to manage about 75,000 tons per year (TPY) of dual stream materials with two shifts, or 37,500 TPY with one shift, and the facility is currently processing about 48,000 TPY with one shift[12], processing single stream materials. If tonnage is increased, the operator's stated intent would be to process additional amounts by adding additional hours or additional swing shifts, and when tonnage increases enough to warrant it, to add a second shift. Based on basic calculations, using 10 hour shifts could presumably add 12,000 TPY at current production without substantially affecting concerns about O&M time; at least one private facility in the region uses (two) 10 hour shifts.

One concern that would need to be addressed before adding a full-time second shift is that operations are currently being negatively affected by increased cardboard in the system. Newspaper is baled all day, while cardboard piles up (often extending outside the southern door). Currently, the baler is then switched to cardboard at the end of shift in a second partial shift, complicating scheduling of a true second shift. Increases in cardboard from additional commercial tonnage would exacerbate this issue.

Recommendations:

- Explore the efficacy of each of the methods for increasing tons listed above.
- Consider investing in a second dedicated cardboard / fiber baler (if ROI warrants) to reduce the cardboard problem and eliminate its barrier to adding a second shift. This would make commercial a more viable option.
- If tons warrant, be ready to embrace a second shift, which should spread overhead costs over more tons, lowering the cost per ton.
- Consider investing in additional optical sorters in the plastic lines if ROI analysis warrants. Review the costs, benefits, and sales value of the materials, and compare to the ROI from other investments. This may allow for additional material streams to be accepted, faster processing, and reduce worker fatigue and labor costs.[13]

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[11] This assumes 0.9 tpy per capita (from RCAB survey) times .6 (accounting for 40% recycling county wide already), times 0.06 for 6% recycling induced by PAYT, times 10,000 persons. Note that Superior has a population of about 12,000 and lacks PAYT. Its hauler is Waste Connections (both the HOA contract and the substantially smaller Town contract).

[12] This figure for current processing volume was provided by Eco-Cycle. Figures from the County suggest the current in-bound tons processed by the facility in 2012, 2013, and 2014 were, respectively 49,970 (or 49,370), 47,004 (or 48,521), and 48,000 tons. This throughput has improved from early years of facility operation when one dual stream shift processed 36,000 TPY (reported by Eco-Cycle). The County notes that the facility's design capacity changed from 36,400 TPY in 2001-2007; increased to 45,500 in 2008 or 25% with the advent of single stream, and increased to 50,960 in 2012, a total of 40% increase over the period.

[13] The consultant report is expected to research this issue. The County and Eco-Cycle undertook a study by a hired consultant to review operational changes and to conduct a detailed analysis of financial issues of the type the RCAB had raised. The consultant work began after RCAB convened this committee; the results of this committee's report helps provide questions for analysis by the consultants, and the results of the consultant report and this committee should both be considered by RCAB and the County in identifying potential next steps or policy changes.

4. **How do BCRC costs compare with other facilities? County? Operations? Are there changes that would improve the economics?**

This committee conducted a high-level review of BCRC costs compared to other facilities, to try to understand whether operational costs were in line with other facilities. If not, this could be one of the causes of the lower gate fees paid to haulers – one of the core problems identified as the basis for this committee.

Based on figures provided by an update in the RCAB meeting and Boulder County budget data from 2012-2013, Boulder County's annual budget for the BCRC, divided by the tons processed, results in a cost-per-ton of about $95-$105 / ton; the draft consultant report suggest BCRC costs per ton are $87-$89/ton.[14] Committee members interviewed a number of facilities in the region, and around the country, reviewed the literature, and talked to MRF operators. The "going" industry benchmark cost-per-ton for single stream MRFs centers around $60-$70/ton (the consultant report suggests a similar range of $60-$75), certainly with some lower and some higher. The preliminary consultant figures indicate the operating costs at BCRC are $12-$29[15] higher than market (an average 30% higher); our cruder figures suggest about $100/ton for BCRC operating costs, and $60-$70 industry average, for about $30-$40/ton differential, a figure similar to that identified as early as the June RCAB meeting.

Using either set of figures, adding even $15 of the $15-$30 differential to the gate fees paid to haulers (Figure 1) would have moved BCRC from the low end of gate fees paid to figures more comparable to the higher end of regional facilities, and made it a more attractive destination to regional haulers. It is important to drill down to identify the causes of this cost differential.[16]

A line-by-line comparison and analysis of the causes for this gap are beyond the volunteer time available to this subcommittee. The County will want to review the sources, and identify whether the differences are due to expenditure that are more important than keeping hauler fees in line with market or the other issues noted in this report. Cost elements to be investigated should focus on costs not directly attributable to the operation and maintenance of the facility, including: educational expenditures, transfers to overhead, grants, incentives to operators, and other items that may be out of line with other private and public facilities. Programs and education and other expenditures outside the operation of the BCRC may be considered important expenditures, but should be clearly and separately funded to assure transparency of the facility's finances, flexibility to adapt to the market, and comparability with other facilities.

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[14] The costs for the BCRC center are based on figures provided by the County and provided in Figure 4. The minimum total costs here are $95-$105 per ton (the row excluding depreciation). The largest share of budgeted costs that are paid to Eco-Cycle (professional services) result in costs per ton of about $80-$86. The estimate of BCRC costs per ton provided by the draft consultant report are about $87-89/ton (provided to the Committee by Suzanne Jones in November 2014).

[15] High minus low, appropriate for ranges. ($87-$75 vs. $89-$60)

[16] Note that if the Community grants are $50,000/year, this is the potential source of perhaps $1.04 of this difference (dividing by current processing of 48,000 tpy); if they are $100K, the community grants are achieved at the cost of $2.16 of this $15-$30 differential – less than 8% of the differential, leaving more than 90% from other sources.

Recommendations:

- Determine if the cost per ton at the BCRC is accurate and appropriate for operation of this MRF, with a goal to be competitive with other regional MRFs, and identify cost savings or revenue augmentations to bridge the gap between current costs (about $87-$95/ton) vs. market standard (about $60-$75/ton).
- Provide RCAB with results of the consultant analysis so it can review the findings.
- Review BCRC non-operational costs identified and their contributions to the gap, and provide an opportunity for RCAB to conduct a policy discussion to make recommendations about which expenditures are and are not priorities. Ultimately the County should provide transparency about the costs, rationales, and their disposition / decisions.
- Review the consultant report findings on recommended BCRC improvements and provide feedback to RCAB about priority improvements, including a review of the estimated ROI for the cardboard baler and any other proposed processing upgrades.[17]
- Contractual considerations are addressed below.

Figure 4: Calculations from Gross Boulder County-Provided Budget and Tonnage Figures

	2012	Cost/Ton	2013	Cost/Ton
Tons/Year from County	49,970	Calc	47,004	Calc
Total Expenses-Budget	$6,868,492	$137	$4,928,285	$105
Total Expenses-Actual	$6,226,658	$125	$5,627,826	$120
Total Expenses-Actual excl Depreciation	$5,179,029	$104	$4,500,646	$96
Base Eco-cycle/Prof Svcs-Budget	$4,309,500	$86	$3,769,000	$80
Base Eco-cycle/Prof Svcs-Actual	$3,971,670	$79	$3,764,274	$80
Revenues from Mat'l Sales-Budget	$6,767,032	$135	$4,992,000	$106
Revenues from Mat'l Sales-Actual	$5,132,860	$103	$4,857,566	$103

5. **Are there changes to incentives or contracts that should be considered for future BCRC operations?**

The current contract may be another source of cost differentials, but it is beyond the Committee's information to determine if this is the case. When the County considers renewal of the operating contract, the committee recommends it should review the contract and its clauses to make sure it uses best practices and that all clauses, incentives, and elements are in the best interest of the County. The success of the facility hinges on making sure the contract is crafted using the best industry clauses and is competitively considered, and widely advertised.

Members of the committee spent a short time interviewing public entities with operational contracts for facilities about suggestions, considerations, and recommended clauses. Our basic feedback follows in Figure 5, and the information can provide a start for a detailed County review process in preparation for the next contract.

[17] The County and RCAB should consider financial issues as the core of the ROI. If a new piece of equipment will make material cleaner but will not improve a material's revenue (because it is better than spec requirements), it may not provide a sufficient ROI, and the investment should not be made. The Baler for cardboard may be a critical production point; but the additional processing upgrades should be carefully examined.

Figure 5: Considerations in MRF Operating Contracts

• Review of revenue and risk-sharing options available. Whichever type of revenue calculation selected, the City should be certain that all of the details are clearly defined in their agreements. Operators typically turn over 50-80% of the revenue to the agency.
• Whether the processing fee should be reduced because of the depreciated facility value;
• Whether additional educational activities, such as an educational center at the facility, will be paid for by the operator;
• Whether to reduce residual levels below the 5 percent standard used in many older contracts (allowed thresholds vary for different facilities);
• Will contract provisions allow for future material additions or changes in how recyclables are delivered to decrease community program costs (e.g. if a community implements single-stream collection to reduce collection costs); and
• Which party should pay for repairs and upgrades — the existing facility operator or the community?
• Are repairs necessary because of normal wear and tear or a result of relaxed maintenance?
• Have adequate records been kept on maintenance and repairs?
• MRF contracts also should examine revenue sharing. This allows MRF operators to "lock in" future material prices using financial hedging futures. When negotiating the contract, community decision-makers should understand how hedging contracts can translate into better revenue sharing for the community.
• Establish material recovery preferences (if any) in the operating agreement
	• Knowing the composition of a municipality's recyclable stream is important in single stream systems. Consider requiring physical sorts of random loads delivered to the MRF. In these composition sorts:
	  ○ Calculating the volume contamination or residue is important to ensure the municipality a greater degree of cost control.
	  ○ How residue is allowed to factor into the commodity calculation can significantly impact the municipality's revenue received or payment expected. The City should establish this element in advance and ensure that residue has no monetary value in the rate calculation.
	• If a fixed-rate option is used, the community should build in some protection measures. Short-term contracts with mutually renewable options are one way of safe guarding the jurisdiction and being fair to the contractor.
	• In sliding-scale agreements, the rates may be tied to published sources of market activity for the geographic region or on actual prices negotiated by the local processor. It is recommended that the community opt for published rates to ensure full disclosure and to provide an incentive to the local operator to obtain the best prices possible for the material delivered.
	• A hybrid rate agreement includes components of fixed/flat rates and also the sliding scale approach. This is one of the fairest approaches to revenue sharing. It offers the MRF assurance that it can cover the cost of processing during the course of the contract. It also provides the community with a greater direct share of the revenues.
	• Establish MRF operator compensation with agency goals in mind
	• Prepare for changes in composition and quantities / build it in

6. **Are there opportunities / places to achieve higher revenues?**

There are likely several options for increased revenues beyond those mentioned earlier, but one subject the committee discussed in this topic area was bulky metal recycling. The Boulder County drop-off used to take this material, but stopped due to liability, safety, and other concerns. At the time the collection of metal ceased, revenues were approximately $100,000 per year. A policy decision was made, comparing lost revenues against estimates of costs of liability, fencing, etc., and the committee recognizes the issues and respect the County's decision.

Longmont has collected bulky metals at their facilities for years. Longmont chose to move the collection container from the drop-off line due to increased liabilities of people climbing in to the container, risking injury. The containers are now in an area of the facility in which users must check in with an attendant for drop-off access. Eco-Cycle has taken this material at CHaRM for some time, and presumably those tons increased when Boulder County's drop-offs stopped.

Metals markets are traditionally strong, and there has been concern expressed periodically that this decision represents a revenue loss to the County that could assist the facility. Thus, the committee recommends the figures underlying the policy decision be made public so the question can be clearly documented.

SUMMARY:

There are multiple opportunities to increase tons at the facility, including economic drivers, municipal decisions, and policies to increase commercial diversion. One core commitment must be to recognize that the facility must make it attractive for haulers to bring additional materials (including commercial tons) to the facility by providing competitive gate fees. This should be a core part of the budget, not treated as a residual, or the facility will not be able to attract the additional commercial and residential tonnage that could enable payment of higher hauler rebates.

Second, the costs per ton to operate the BCRC have not historically compared favorably to other regional facilities with which BCRC competes for local hauler tons, and appear to be 30% ($15-$30 / ton) higher. The sources of these differences need to be identified, whatever their source, and as a part of this analysis, costs that are not part of the operation of the facility need to be identified and separated and policy decisions made. A review and comparison of operational costs and contractual clauses, current and future, is also needed to identify additional savings opportunities.

Finally, if these issues are addressed, the Committee sees many opportunities for new tons to the facility.

Boulder County

Sustainability Office

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Boulder County Resource Conservation Advisory Board (RCAB) Meeting
December 17, 2014

Boulder County Recycling Center, Education Room, 1901 63rd Street, Boulder

AGENDA

1. Call to Order / Introductions	4:45 p.m.
2. Approval of Minutes – November 19, 2014	4:46 p.m.
3. Public Comment (Maximum Time Allocated 10 minutes)	4:47 p.m.
4. Priority Topic: Composting ACTION: Recommendations to BOCC on policy, program and infrastructure improvements needed to significantly increase organic diversion in individual municipalities and across the county. a. Infrastructure Working Group Report – Tim Plass b. Education Working Group Report – TBD c. Compost Recommendations/Discussion	4:50 p.m.
5. Priority Topic: C&D Diversion (if time allows) ACTION: Begin work on this priority area by discussing a C&D existing conditions report – TBD	5:25 p.m.
6. January Meeting/Agenda topics - Suggestions: a. Continue to refine compost recommendations b. C&D analysis c. Review of the year ahead (what still needs to be addressed during the focus on priorities – RCD reports, annual bylaws review, flood report, zero waste program review, etc.) d. RCD Update - Summary report on 2014 e. Kessler Report on Recycling Center operations	6:15 p.m.
7. Any Other Business	6:16 p.m.
8. Community Reports - Questions on written reports only (Please remember to send your report in advance!)	6:17 p.m.
Adjourn	6:30 p.m.

Resource Conservation Advisory Board (RCAB)

The Resource Conservation Advisory Board (RCAB) was formed in 2002 to advise the Board of County Commissioners on major waste diversion policies and strategies.

The purpose of the Advisory Board shall be to assist the Board of County Commissioners in reducing the amount and toxicity of waste generated in the county; to research, review and recommend changes in policy related to waste reduction, reuse, recycling and composting; to provide input on the development and management of facilities and programs; and as a result of these efforts to help Boulder County and its communities

and partners to conserve mineral, fossil fuel and forest resources, and to reduce environmental pollution.

Boulder County Resource Conservation Advisory Board Meeting
Minutes - November 19, 2014

Present:
Jack DeBell – CU Recycling
Juri Freeman – At Large
Lisa Friend – Boulder County
Bryce Isaacson – Western Disposal
Suzanne (Zan) Jones – Eco-Cycle
Bridget Johnson – Jamestown
Charles Kamenides – Longmont
Shari Malloy – At Large
Dan Matsch – Lyons
Lisa Morzel – At Large
Mark Persichetti – Louisville
Tim Plass – Boulder
Holly Running-Rabbit – Ward
Lisa Skumatz – At Large
Dan Stellar – Center for Resource Conservation

Active Members Not Present:
Alexander Armani-Munn – Nederland
Tom Dowling – Lafayette
Shirley Garcia – Broomfield
Jeff Stewart - Other Hauler (Waste Connections)
Martin Toth – Superior

RCAB Staff Liaison:
Hilary Collins – Commissioners' Office/Sustainability
Austin Everett – Commissioners' Office/Sustainability

Guests:
Kevin Afflerbaugh – Western Disposal Services
Darla Arians – Boulder County Resource Conservation Division
Kara Mertz – City of Boulder
Susie Strife – Sustainability Coordinator, Boulder County Commissioners' Office

1. **Call to Order**

Chair Mark Persichetti called the meeting to order.

2. **Approval of Minutes**

Tim Plass moved approval of the Oct. 22, 2014 minutes as written; Suzanne Jones seconded. The minutes were approved.

3. **Public Comment** – None

4. **Priority Topic: Composting**

Subcommittee and working Group Reports

Note: Lisa Skumatz's report on the Recycling Center Subcommittee was incorrectly included under the composting topic and was moved to later in meeting.

Infrastructure Working Group

No report, but it was noted that at their next meeting the working group will review a matrix of compost facility options.

Education and Outreach Working Group

Hilary gave a presentation (see November meeting handouts) reviewing the working group's progress on composting education, outreach and signage. The group reviewed existing messaging and vehicles, what is working well and what isn't, gaps that exist and improvements needed. The group's recommendations were:

- Pursue consistent messaging and outreach, formalizing this collaboration through an intergovernmental agreement (IGA), supported by input from other partners
- Measure, share and build on existing resources and add to them
- Prioritize effective social marketing techniques
- Extend incentives to all communities
- Build efficiency in language translation and training
- Find funding for a pilot program and to support expanded education, advising and incentives

Hilary elaborated on the IGA concept noting that this approach also has potential for collaboration on other things such as diversion tracking/hauler data requirements, business recognition programs, advising services, and deconstruction plan requirements.

Comments and Q&A

- What is the pilot program? A: The IGA could be kicked off in a small way with as many communities who want to participate on collaborative education.
- Bryce encouraged making public or showcasing gardens using local compost to increase public awareness. Jack suggested the information could include price point and product comparisons.

- Juri asked about the scope of the IGA? A: It would include what the parties decided they wanted to accomplish.
- Lisa M. asked about the potential for all communities to sign on to the IGA? A: IGA's take time to build, the latest five-year IGA for hazardous materials management took 10 months to process since it was similar to the previous IGA it replaced, but not all communities in the county participate. A "zero waste" IGA is completely new and the level of difficulty will likely have to do with how much money is involved.
- Tim noted that an IGA is a lot of work only for composting. Does the scope just say people are on board with messaging or is there a financial cost to the governments involved? A: The IGA could be broader than just composting; it could cover multiple aspects of zero waste.
- Lisa F. asked how RCAB could begin to support this concept moving forward.
- Dan M. noted that an IGA is going to be our best tool, and could have great value but there will likely be a monetary aspect to it.
- Holly stressed local markets, saying there should be an ordinance that all compost stays within the county. Composted food scraps make good compost to grow food.
- Suzanne suggested that RCAB keep a list of expectations, desired actions that could be moved forward through an IGA.
- Jack made a motion that RCAB adopt the recommendations but there was no second.
- Dan M. suggested the working group spend a few more sessions on this before we vote to present it to the county commissioners.
- Juri thought the IGA should be addressed separately.
- Hilary asked about when the working group should refine its recommendations - now or when all the priorities have been addressed? It was agreed that the working group should conclude its work on composting sooner rather than later.
- Dan M. suggested the recommendation be more specific for example, the county should pursue consistent messaging so that it is more actionable.
- Mark encouraged RCAB members who are interested to make comments at the next education and outreach working group meeting.
- Tim noted that the haulers and nonprofits play an important part in consistent messaging and we should find a way to include them in the collaboration.
- Mark thought that RCAB should provide a detailed recommendation on potential funding and not leave it up to the County Commissioners to find funding.
- Lisa M. stressed the importance of metrics as a baseline and to show growth and positive change.
- Charles thought that some communities might be more receptive if an IGA encompasses more than just composting, and instead includes the entire zero waste spectrum.
- The working group was asked to return with more detailed, specific recommendations.

<u>Compost Recommendations/Discussion</u>

To be discussed next month.

RCAB optimization committee

Lisa S. presented a PowerPoint presentation (now added to the meeting handouts) that summarized the RCAB Optimization Consensus Report dated November 13, 2014 (included in the meeting handouts).

Comments and Q&A:

- Holly asked about opportunities for higher revenues and if this is mainly from scrap metals. A: Yes.
- What about accepting source-separated materials? A: That's how operations can be changed but the plant is not currently laid out to do that.
- There is also consultant study of the recycling center in progress. Suzanne noted that a draft is currently being reviewed by county RCD staff and Eco-Cycle.
- Charles noted that he didn't see inefficiencies in the plant, so that is not the reason for the higher expenses.

Note at 5:57 pm Lisa S. began chairing the meeting due to Mark's early departure.

Lisa M. moved to accept the report as presented, and Bryce seconded. The motion passed unanimously.

5. **Priority Topic: Recommendations from Subcommittee on Zero Waste Funding for 2015**
The meeting handouts included a chart summarizing the applications received and the subcommittee recommendations. Charles presented, noting that 14 applications were received and the subcommittee met to evaluate and recommend funding. The recommendation was that 9 entities be granted money:

    - Full-funding of $10,000 recommended for the Boulder County Resource Conservation Division to purchase equipment for a compost drop-off in Nederland. (Infrastructure Program)
    - Full-funding of $9,960 recommended for the City of Lafayette to engage in education about new compost opportunities in seven neighborhoods with populations that include high numbers of the elderly and Latinos. (Education Program)
    - Full-funding of $2,352 recommended for the City of Lafayette to purchase additional Zero Waste stations. (Infrastructure Program)
    - Full-funding of $10,000 recommended for the City of Louisville to engage in Zero Waste education targeted at individuals who use larger garbage containers. (Education Program)
    - Full-funding of $5,179 recommended for the Town of Lyons to purchase Zero Waste stations for municipal buildings. (Infrastructure Program)
    - Partial-funding of $2,104 recommended for the Town of Lyons to provide incentives for Zero Waste volunteers at community events. (Education Program)

- Full-funding of $4,600 recommended for a new group, Bands for Lands (supported by Sustainable Revolution) to offer an "Xtreme" Zero Waste event in Longmont for Earth Day. (Education Program)
- Full-funding of $5,805 recommended for the Town of Ward to support and document monthly recycling collection services and a single, summer CHaRM event. (Education Program)

Comments and Q&A:

- Holly asked why the Earth Club was denied funding? A: Their numbers needed more definition. They will be asked to apply again with better documentation.
- Dan M.: We've been trying to contract to do composting in Ned for a couple of years but the equipment hurdle has been unpassable thus far.
- Juri moved to forward the funding recommendations to the BOCC> Shari seconded, and the motion passed unanimously.

6. December Meeting/Agenda topics

- It was agreed that the Board will continue to focus on composting until recommendations for this priority area are completed. Lisa S. will distribute a score item before next month's meeting.
- Lisa F. will prepare an existing conditions report for the next priority area i.e. Construction and Demolition (C&D), and this will only be discussed if time allows.
- It was agreed that Outlook calendars seemed effective at addressing quorum issues, and having some food was a good thing too. Hilary said staff would strive to put all the documents into one PDF.

7. Any other Business

Lisa F. attended an interesting webinar on recyclable materials. The speaker noted that the recycling industry wants to fight against the consumer changes towards light-weight but unrecyclable materials such as juice packs. The speaker suggested the industry might need to accept that some waste is inevitable.

8. Community Reports

Lisa F. reported that the county is wrapping up a 14-month project to drive Zero Waste in the mountains, funded by the USDA. One element was a partnership with the Town of Nederland and Boulder County Forest Health to begin accepting pine needles and dried grass for composting at both Community Forestry Sort Yards. Though needles and dried grass are recommended to be removed from gutters and the proximity of structures in the mountains, there had heretofore been no effective method for diverting the material. The USDA and Nederland partnered to pay for 10 roll-off containers of needles that were sent to composting from the mountains: A diversion of more than 20 tons! More details on success of the USDA project will be shared when the final report is completed next month.

Bridget reported that all Jamestown residents now HAVE water and water is now 100% potable!! The town water supply is working really well even under these horribly cold conditions. More concrete and work will be done on infrastructure when the weather gets better. Jamestown has 6 working community groups helping to create the vision of what rebuilding Jamestown looks like in the next year. These groups will commence just before Christmas to share their ideas with the town board. Rebuild Jamestown is happening! All road work to Jamestown is complete (pavement, signage and edging as of Oct 30th). There will be 2 more weeks of final erosion work and then any additional work will be in the scope of work for road rebuilding next spring. (Be careful if you come up to town, the new road freezes faster than the old one in places and there are harsher turns to town now!). The town is looking at making a decision to where the new Anderson Hill bridge will be located (property lines, legal issues) currently and hopes to make a decision in the next two weeks so an RFP can go out for builders.

Charles: City wide leaf collection in Longmont picking up and composting leaves. Now getting into holiday recycling, also now have a Styrofoam recycling option.

Dan M. noted that Lyons contracted with Natural Capitalism Solutions before the flood to come up with a sustainability action plan; since the flood it has shifted and integrated FEMA. A draft is headed towards the Board of Trustees.

Holly commented that Ward would be very glad to receive a grant to help with recycling.

Tim noted that the City of Boulder is in the process of updating their zero waste plan and creating a strategic action plan which will include a framework for making decisions on their trash tax. The city is also considering ordinances to recycle commercial materials in the city, and for food generating business / multi-family units to have mandatory composting. The plan will be brought to Council in January or February 2015. The city also added meat and dairy to acceptable compost items.

Suzanne reported that Eco-Cycle has put out a holiday guide that will help people to reduce waste over the holidays.

Adjournment

Lisa F. moved to adjourn; Lisa M. seconded. The motion was unanimously approved.

For Infrastructure Working Group Report

Options matrix Part 1	Western Disposal	A-1 Organics-Keenesburg	A-1 Organics-Eaton	Heartland Biogas	Louisville PW Site	Longmont Transfer Site (no site identified, assume southeast)	Erie Landfill Transfer Site	Other Sites?
Processing Capacity	Currently at 12,800 tons/yr. Could expand up to estimated 26,000 tons/yr.	Large facility - Not an issue.	Dan M will provide this information	200,000 tons of food scraps/year A-1 Organics collects for this facility. The facility needs large amounts of food waste, not curbside organics The City of Boulder has had talks about using Western as a transfer site to send food waste to this facility.	Property is about 10 acres. Unsure of processing capacity but maybe half that of Western's facility. Could use more expensive aerated static pile to process on a small footprint.	?? Charles to provide information.	?? Waste connections has some property at the landfill, and are interested in creating a composting facility. The facility has more retail traffic than Western / Eco-Cycle. Charlie is assigned to find out more info, RCAB interested in a tour. Hilary to contact Jeff Stewart, new RCAB board member.	Lisa F noted that a Weld county farm compost facility Soil Rejuvenation could be competitive if they are willing to become permitted. Hilary noted that the Valmont Power plant property could be a possibility after decommissioning. This site could have contamination issues and this site won't be available for many years. It was agreed that this site isn't a viable option.

Options matrix Part 1	Western Disposal	A-1 Organics-Keenesburg	A-1 Organics-Eaton	Heartland Biogas	Louisville PW Site	Longmont Transfer Site (no site identified, assume southeast)	Erie Landfill Transfer Site	Other Site?
Public Accessibility Vulnerability to loss of access	Limited to Western customers? Correction – this facility is open to other residential haulers that are not engaged in municipal contracts. Has potential to be opened to other other commercial haulers.	Open, but privately owned.	Open, but privately owned.	Open for qualified loads in right now, currently in the first phase. Privately owned.	Public facility? Need more info	Public facility? Need more info If Western trailers food waste to A1 organics, they could collect curbside organics to Boulder on the return trip. However there would be a large imbalance between amount of material going each direction.	TBD - need to meet with Waste Connections Need more info	

For Infrastructure Working Group Report

Options matrix Part 1	Western Disposal	A-1 Organics-Keenesburg	A-1 Organics-Eaton	Heartland Biogas	Louisville PW Site	Longmont Transfer Site (no site identified, assume southeast)	Erie Landfill Transfer Site	Other Site?
Tipping Fees	~~$45/T~~ $67.55/T if opened to Western's competitors? a ton Bryce explained that the land their facility sits on is $320,000 per acre. A1 organics and Heartland sit on cheap rural land – this makes the Western facility more expensive in terms of taxes and opportunity costs. Lisa M asked about using the heat from compost, Bryce noted this is an expensive proposition.	$26.50/T Bryce said A-1 Organic's numbers are likely to be $40-45$ per ton after they put in more infrastructure (scales) No timeline was given. Eco-Cycle uses this option. Material goes to a transfer station near Stapleton and is then hauled to Keenesburg or Eaton.	$26.50/T See comment for Keenesburg.	Likely dependent upon fuel value of load. Probably $26.50/T to start. Bryce noted that Bob Yost told him if Western takes materials to A-1 Organics to feed Heartland they can assume that tipping fees will remain the same, as full operating costs won't be known until they are closer to full production. Long term it might be cheaper.	??	??	??	??

Options matrix Part 1	Western Disposal	A-1 Organics-Keenesburg	A-1 Organics-Eaton	Heartland Biogas	Louisville PW Site	Longmont Transfer Site (no site identified, assume southeast)	Erie Landfill Transfer Site	Other Site?
Technology Ability to handle range of materials	Yard waste, would like more food scraps. Compostable ware is(not) a challenge. Need to screen out small portions that have not been fully processed. The US composting council is trying to standardize the industry to tighten the specs on what can be made out of compostable material. They believe they will see more contamination with increasing amounts of commercial food processing. Heartland can deal with contamination better than Western because of their ½ million dollar machines.	Compostable ware is a challenge here, too.	Just now certified for food waste, same technology as Keenesburg.	AD system to open late 2015. ONLY WANTS food waste, manure, and fats, oils and grease (FOG). Very limited allowance for high carbon materials. 2 phase system: manure and food waste.	Small site, but could be suited for ASP or in-vessel technology. Biosolids composted in windrows here until recently w/out complaints There is compressed air onsite, with excess capacity that could be used for aerated compost if there was a desire.	Need to identify prospective city or county-owned sites. Maybe capable of being permitted for composting on-site?	Possibility to use existing Waste Connections transfer trailer loading building?	

For Infrastructure Working Group Report

Options matrix Part 1	Western Disposal	A-1 Organics-Keenesburg	A-1 Organics-Eaton	Heartland Biogas	Louisville PW Site	Longmont Transfer Site (no site identified, assume southeast)	Erie Landfill Transfer Site	Other Site?
Odor Mitigation System?	Fairly well isolated from residences. No tip building to contain stinky loads. Dependent upon good management as food scrap volumes increase.	Located far from population centers.	Located far from population centers.	Fully-contained AD system. Resulting digestate will be composted at A-1 Eaton.	Downwind from population centers; adjacent to WWTP.	??	Downwind from population centers; adjacent to landfill.	

Options matrix Part 1	Western Disposal	A-1 Organics-Keenesburg	A-1 Organics-Eaton	Heartland Biogas	Louisville PW Site	Longmont Transfer Site (no site identified, assume southeast)	Erie Landfill Transfer Site	Other Site?
Immediacy								
Licensing								
Residuals								
Development cost								
Government influence over operations								

For Composting Discussion

ORGANICS PROGRAM CONCEPTS FOR CONSIDERATION IN BOULDER COUNTY - DRAFT

Prepared by Lisa Skumatz, SERA, for use of RCAB planning - not to be circulated / used beyond, please.

				COML Wgts for scores (add to 100%) ==>	40%	30%	15%	15%	100%	4.8	<==Threshold COML - colored cell									
				RES Wgts for scores (add to 100%) ==>	40%	30%	15%	15%	100%	5.1	<==Threshold RES - colored cell									
			RESIDENTIAL PROGRAMS		*Relative*	*Relative*	*Relative*	*Aggressi*	*WTD*		*In Place Where in Boulder County?*									
	R/C	ID#		notes	Tons Diverted	City Cost	Gen Cost	(& politics)	SCORE (hi is good)	word for score	Boulder	BoCo	Lyons	Longmont	Louisville	Superior	Other		Total	nal orde
																				1
EDU	R	E1	Social marketing		ML	MH	0	VL	4.4	M									0	2
EDU	R	MF1	MF concentrated outreach		ML	ML	0	VL	5.0	MH									0	3
EDU	R	E3	Insink disposals program	ed only no $	L	L	ML	L	4.3	M									0	4
FAC	R	F1	Dropoff at transfer station or other location.		ML	M	0	L	4.5	M									0	5
FAC	R	F2	Wet dry collection system		VH	H	MH	H	4.2	M									0	6
INC	R	C1	Food scraps (organics) costs embedded for all res customers		H	L	M	MH	5.3	MH									0	7
INC	R	I1	Taxes on some material streams		ML	L	L	H	4.2	M									0	8
INC	R	C2	Require incentive rates for Composting service		H	VL	M	MH	5.6	H									0	9
INC	R	I2	Change contract payments to favor food / organics tons (for cities with contracts)		M	VL	ML	VL	5.5	MH									0	10
INC	R	I3	Contract incentives to meet goals (for cities with contracts)		M	L	VL	L	5.4	MH									0	11
INC	R	I4	Differential tip fees for meeting goals		M	0	L	MH	5.4	MH									0	12
PGM	R	P1	EOW Trash		H	VL	VL	M	6.2	H									0	13
PGM	R	C3	PAYT / embedded food scraps (organics) coll'n		MH	VL	ML	M	5.5	MH									0	14
PGM	R	P2	Consider EOW Recy to help fund organics coll'n	tons - assumes this is the only way you can get it funded	MH	VL	VL	MH	5.6	H									0	15
PGM	R	C4	Rebate for food / organics bin		ML	M	0	M	4.2	M									0	16
PGM	R	P3	Micro can for trash		M	VL	L	ML	5.4	MH									0	17
PGM	R	C5	Pay more for NOT composting	Assumes cost of compost pgm	MH	VL	ML	M	5.5	MH									0	18
PGM	R	C6	No bin no barrel	assumes 0 cost to HH	MH	ML	0	M	5.3	MH									0	19
POL	R	S1	Measure / estimate current diversion in community and set goals		VL	VL	0	0	4.9	MH									0	20
POL	R	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	assumed dev'p cost	M	L	0	L	5.5	MH									0	21
POL	R	C10	Consider (organics) contracts for collection to get desired services at desired incentives	savings to HH	VH	ML	0	H	5.8	H									0	22
POL	R	MF2	City-wide ordinance requiring all MF >x units to get service	VL to City;	ML	VL	M	MH	4.4	M									0	23
POL	R	C7	Mandatory food (organics?) for all HHs	change recy freq	VH	ML	ML	MH	5.5	MH									0	24
POL	R	C8	Disposal ban - food / organics	change recy freq	VH	ML	ML	MH	5.5	MH									0	25
POL	R	C9	Mandatory program - enforcement options...	change recy freq	VH	ML	ML	MH	5.5	MH									0	26
POL	R	S4	Stop spring clean-ups	savings	M	0	0	MH	5.7	H									0	27
REG	R	L1	Lobby for better facility siting standards at state	tons near or far?	VL	VL	0	VL	4.8	MH									0	28
REG	R	S2	License with reporting required as part of license		VL	VL	0	L	4.6	MH									0	29
REG	R	I5	Hauler license requirements to offer food / organics scrap coll'n		ML	VL	0	L	5.4	MH									0	30
																			0	31

Skumatz Organics Concepts fo

Note from Lisa S: Attached is the draft rankings for the organics programs you have seen before (on High / Medium / low rankings H/M/L etc.). I provided a score for each of four relative criteria:

1. tonnage diverted
2. cost to the community
3. cost to the (residential or commercial) generator (assumes hauler costs are passed through)
4. political hassle / aggressiveness needed to get it implemented.

Then I did a WEIGHTED average score, using the weights in yellow - ranking TONNAGE highest. Higher tons are GOOD, and LOWER costs (or political hassle) are GOOD - and the scoring system I used should reflect that combination in the weighted averages. I highlighted all options with weighted average scores in the top half for the section (res vs. com'l). We can vary the weights in the meeting if these

don't reflect the ones you think are best -- and towns that run their own collection (Longmont) may want their own weights! My staff is working on the "which towns have this" part on the right and should have it for the meeting.

For C&D Discussion (if time allows)

Construction & Demolition – Existing Conditions Summary

This document provides an initial summary of existing conditions related to construction and demolition materials (C&D), specifically:

- service utilization
- research findings
- barriers
- data collection and gaps
- regulatory mechanisms
- infrastructure
- incentives
- markets and
- outreach

This summary is intended to provide useful background information for RCAB's discussions and as a basis-of-knowledge document that can be added to, or corrected, as needed.

1. Service Utilization

Boulder County's "BuildSmart" program requires recycling of cardboard, metal, clean wood, appliances, mercury thermostats and concrete when new construction or significant remodeling occurs.[1] Demolition is not permitted; only "Deconstruction" is authorized. Programs in the cities of Boulder, Longmont and Superior encourage voluntary recycling of similar materials.

Western Disposal Service offers a drop-off site for construction materials processing as well as collection of separated or mixed C&D materials. The business reports 2,275 tons diverted from Boulder County in 2013.

In addition, both the Center for Resource Conservation "ReSource Yard" (CRC) and the St. Vrain Habitat for Humanity ReStore accept reusable building materials for sale. CRC, which also offers deconstruction services, reported 1,400 tons diverted in 2013.

Diversion Estimate (tons per year)

	2008	2009	2010	2011	2012	2013	
Haulers: Unincorporated	814	820	1471	2934	3603.4	1502	
Haulers: Other areas							
Other						773	Western NOT BoCo
BuildSmart				333	1126	810	some of this might be doublecounted
CRC*				771	0	1400	* estimated NOT to be doublecounted
Other							
TOTAL:	814	820	1471	4038	4729	4485	

* CRC Estimate 2011: Only 70% estimated to be NOT double-counted.
* CRC Estimate 2012: Only 70% estimated to be NOT double-counted.

^ incomplete BuildSmart data for 2013

[1] http://www.bouldercounty.org/doc/landuse/2012buildsmartcode.pdf

For C&D Discussion (if time allows)

2. Research Findings

The county has researched markets, infrastructure options and needs over the past several years. Key studies include:

- Boulder County Construction and Demolition Infrastructure Study, Materials Generation Estimate and Market Analysis, prepared for Boulder County Resource Conservation Division in 2012 by UHG Consulting and the Center for ReSource Conservation - http://www.bouldercounty.org/doc/rc/zwap2011.pdf

  This study estimates 120,000 tons (tpy) of Construction and Demolition (C&D) materials are generated in Boulder County each year. Of those 120,000 tons, an estimated 51% (61,200 tpy) already have strong markets, according to the authors. The study projects a C&D transfer facility could be constructed for between $7 and $15 million (not including land) and operated through a public private partnership with tipping fees that range between $29 and $47 per ton. Organics (yard waste, wood pallets, dirt/sand, and untreated wood) are estimated to comprise 17.1% of the C&D stream (20,520 tpy).

- Construction & Demolition Waste Diversion: Baseline Information & Gap Analysis, Boulder County Zero Waste Effort, written for the Boulder County Resource Conservation Division by Gracestone Inc. and others in 2009 - http://www.bouldercounty.org/doc/rc/BoCo.ConstructionDemolition.StudyFinalReport.2009.pdf

  This study estimated 150,600 tons of C&D waste generated only in the unincorporated county each year. It provided analyses of other programs, a model C&D diversion ordinance and three recommended actions:
  - Convene C&D stakeholders to consider logistics and diversion policy.
  - Obtain County-specific project & material data, including an analysis of permits - and materials - for new construction, renovation, demolition, deconstruction and roofing.
  - Conduct targeted research on specific materials such as carpets and pad, clean wood, plastic, drywall and asphalt paving / concrete. Centrally located scales are recommended.

3. Barriers

Barriers to C & D diversion are many and include:

- Lack of convenient and affordable infrastructure
- Cost of C&D collection
- Poor markets for many materials
- Lack of space for storing / sorting materials at construction sites
- Lack of incentives for diversion
- Subcontractors often are not invested in Zero Waste commitments
- Reliable local data are difficult to obtain

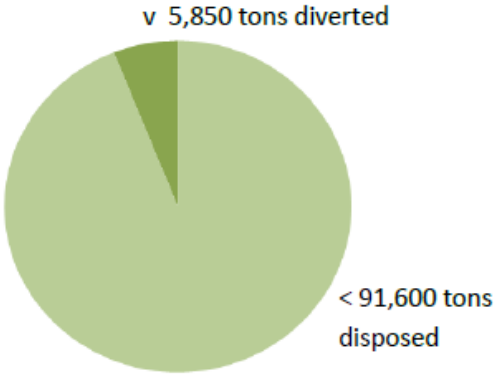
QUESTION: What additional barriers have been identified?

For C&D Discussion (if time allows)

4. Existing Data Collection and Gaps

The 2010 Boulder County Waste Composition Study estimates some 91,600 tons of construction and demolition debris are going to landfill each year[2]. Approximately 15,800 tons per year (tpy) were observed in the MSW stream during the study. An additional 75,797 tons were estimated through a visual survey of 37 samples taken during opportune moments in 2010's detailed analysis. This latter estimate is less reliable, due to its visual nature and the lack of careful analysis and a weight scale. Also, because the 2010 study focused only on disposal, it does not include material being diverted through existing reuse or recycling programs for C&D.

Incomplete numbers from Boulder County hauler reports, BuildSmart records and the Center for Resource Conservation indicate that 5,850 tons were diverted from the disposal stream in 2012 through existing reuse and recycling programs. In 2013, the numbers dropped dramatically: Only 1,502 tons were reported by Boulder County haulers (less than half the 2012 figures) and 810 tons via BuildSmart (down from 1,126 the previous year). While a portion of the loss can be attributed to the closure of "Diversion Connections," which had handled a large volume of recyclable C&D, it is anticipated that better data tracking in the future will provide more reliable numbers, though diversion needs are expected to remain quite high.



Western Disposal Services was able to report additional diversion on behalf of Boulder County municipalities for 2013; those figures are not included in the 2012 numbers pictured above.

5. Regulatory Mechanisms

Boulder County's hauler ordinance requires that licensed collection companies provide collection data to the County. Similar reporting requirements are maintained through local contracts. Few of the county's licensed haulers deal in C&D materials, however.

In theory, construction and deconstruction sites are monitored for compliance with the BuildSmart regulations described above, and the Certificate of Occupancy for new construction is not issued until documents indicating compliance with these requirements have been received. In practice, monitoring is inconsistent and receipts from local disposal companies – some indicating recycling and some not – are accepted as suitable documentation. Data is entered by a part-time worker as time allows.

[2] www.bouldercounty.org/doc/rc/Boulder.Final.WCS2010.pdf

For C&D Discussion (if time allows)

6. Incentives

The only current incentives are available tax credits for the donation of reusable building materials to CRC or H4H. For new construction, LEED certification provides some additional incentive.

7. Signage

There is no formal signage for C&D diversion in Boulder County.

8. Markets

Markets for a variety of materials appear strong in Boulder County, while others are developing. In particular, the materials required for diversion (cardboard, concrete, metal, clean wood and reusable items) have relatively strong markets in Boulder County at this time.

Markets for plate glass are developing. Together, these streams are estimated to represent nearly 18,000 tpy that could be diverted from Boulder County's waste stream using existing systems – to easily double current measured diversion. Detailed information about markets is featured in a Construction and Demolition survey and analysis that Boulder County commissioned in 2011.[3]

9. Education

The primary educational vehicle for C&D diversion in Boulder County, aside from private-sector advertising, is a "Recycling Services Flyer" and links to BuildSmart and municipal programs on Boulder County's web site: http://www.bouldercounty.org/env/recycle/pages/constructionanddemolition.aspx

The value of this outreach system is not yet measured.

An estimated 100 building projects per year enroll in the BuildSmart program, however the effectiveness of this program as an outreach tool is unclear. BuildSmart diversion dropped to an estimated 810 documented tons in 2013 from an estimate of 1,126 tons in 2012.

QUESTION: What other resources are available?

QUESTION: Should any other C & D diversion opportunities be reported?

[3] http://www.bouldercounty.org/doc/rc/constdemoltionrpt2011.pdf

Boulder County Community Report for the RCAB Meeting on December17, 2014

Zero Waste Update

- Clear Intentions glass recyclers, who have received an RREO grant from the state to establish a plate glass recycling facility, have contacted Boulder County about siting plate glass drop-off sites. They have been in contact with the BCRC and are also planning to contact Habitat for Humanity and the CRC. The infrastructure and education work groups will consider this new opportunity when they discuss C&D diversion options early next year.

- Boulder County and the City of Boulder are progressing with their plans to begin using the Re-TRAC software to monitor diversion successes in 2015. A kickoff meeting was held, and programming of the software has begun.

- BCRC is now accepting clamshells (large strawberry containers and other large salad-type containers with lids). Watch for announcements coming soon.

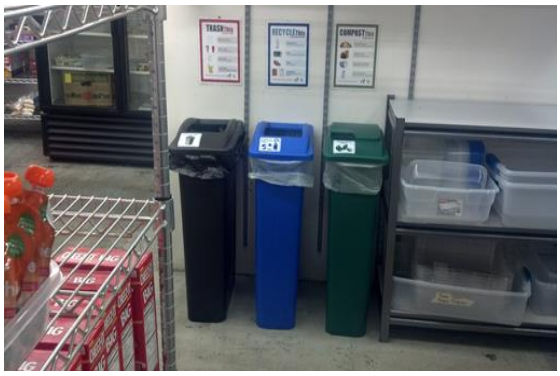
Partners for A Clean Environment – Re-launch

Partners for A Clean Environment (PACE) is re-launching after a hiatus as we created and redesigned our EnergySmart, Water Efficiency, and ZeroWaste services. With new incentives for bins in addition to the city of Boulder and Boulder County incentives, PACE is able to offer a very attractive service to help businesses start a new service, enhance diversion rates, train employees, and get recognized and certified for their efforts.

In 2011, PACE significantly raised the bar for energy and zero waste certification by requiring a 70% diversion rate for waste consistent with the Leadership in Energy and Environmental Design (LEED) criteria. Since then, PACE has worked with more than 3,200 of the 6,000 brick and mortar businesses in Boulder County. Nearly 30% have zero waste opportunities and PACE is working with nearly 70% of them to increase diversion rates.

This year, the newly improved bin incentive has already proved successful with businesses. Launched this summer, nearly 30 businesses have taken advantage of the $250 incentive. Figure 1, below demonstrates the value of having bins that support a clean and orderly diversion area that is less conducive to contamination.

Figure 1. Diversion Containers Before and After Taking Advantage of the PACE Bin Incentive



Jamestown Community Report

Bridget sent the following link to Jamestown's 2014 Year-End Recovery Report

http://jamestownco.org/files/2013/12/2014-Year-End-Report_101214-copy.pdf

ORIGINAL

ORGANICS PROGRAM CONCEPTS FOR CONSIDERATION IN BOULDER COUNTY - DRAFT

Prepared by Lisa Skumatz, SERA, for use of RCAB planning - not to be circulated / used beyond, please.

COML Wgts for scores (add to 100%) ==> 40% 30% 15% 15% 100% 4.8 <==Threshold COML - colored cell

RES Wgts for scores (add to 100%) ==> 40% 30% 15% 15% 100% 5.1 <==Threshold RES - colored cell

			RESIDENTIAL PROGRAMS	Relative	Relative	Relative	Aggress.	WTD		In Place Where in Boulder County? (based on reports from RCAB survey)														
	R/C	ID#		Tons Diverted	City Cost	Gen Cost	(& politics)	SCORE (hi is good)	word for score	Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield	Other	# Towns	Original order	Scoring Notes
EDU	R	E1	Social marketing	ML	MH	0	VL	4.4	M													0	1	
EDU	R	MF1	MF concentrated outreach (city coding NOT organics-centric)	ML	ML	0	VL	5.0	MH	Y	Y	Y	N	N	N	N	N	N	N	N		3	2	
EDU	R	E3	Insink disposals program	L	L	ML	L	4.3	M													0	3	
FAC	R	F1	Dropoff at transfer station or other location (city coding R/YW/FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	4	ed only no $
FAC	R	F2	Wet dry collection system	VH	H	MH	H	4.2	M													0	5	
INC	R	C1	Food scraps (organics) costs embedded for all res customers	H	L	M	MH	5.3	MH	Y	S	NA	Y	NA	N	NA	NA	NA	NA	NA		2	6	
INC	R	I1	Taxes on some material streams	ML	L	L	H	4.2	M													0	7	
INC	R	C2	Require incentive rates for Composting service	H	VL	M	MH	5.6	H													0	8	
INC	R	I2	Change contract payments to favor food / organics tons (for cities with contracts)	M	VL	ML	VL	5.5	MH													0	9	
INC	R	I3	Contract incentives to meet goals (for cities with contracts)	M	L	VL	L	5.4	MH													0	10	
INC	R	I4	Differential tip fees for meeting goals	M	0	L	MH	5.4	MH													0	11	
PGM	R	P1	EOW Trash	H	VL	VL	M	6.2	H													0	12	
PGM	R	C3	PAYT / embedded food scraps (organics) col'n	MH	VL	ML	M	5.5	MH	Y	some	N	Y	N	N	Y?	N	N	N	N		2	13	
PGM	R	P2	Consider EOW Recy to help fund organics coll'n	MH	VL	VL	MH	5.6	H													0	14	
PGM	R	C4	Rebate for food / organics bin	ML	M	0	M	4.2	M													0	15	tons - asssumes this is the only way you can get it funded
PGM	R	P3	Micro can for trash	M	VL	L	ML	5.4	MH													0	16	
PGM	R	C5	Pay more for NOT composting	MH	VL	ML	M	5.5	MH													0	17	
PGM	R	C6	No bin no barrel (FOR ORGANICS)	MH	ML	0	M	5.3	MH													0	18	Assumes cost of compost pgm
POL	R	S1	Measure / estimate current diversion in community and set goals (for organics) (city coding for tons, goal, organics - T / G / O)	VL	VL	0	0	4.9	MH	YYY?	YYY?	YNN ?	YNY ?	NN	YYN	YNY ?	NNN					0	19	assumes 0 cost to HH
POL	R	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	M	L	0	L	5.5	MH													0	6	
POL	R	C10	Consider (organics) contracts for collection to get desired services at desired incentives	VH	ML	0	H	5.8	H													0	21	assumed dev'p cost
POL	R	MF2	City-wide ordinance requiring all MF >x units to get service - ORGANICS (city coding R/O)	ML	VL	M	MH	4.4	M	Y/N	N/N	Y/N	Y/N	N/N	Y/N	N/N	N/N					0	22	savings to HH
POL	R	C7	Mandatory food (organics?) for all HHs	VH	ML	ML	MH	5.5	MH													0	23	VL to City;
POL	R	C8	Disposal ban - food / organics	VH	ML	ML	MH	5.5	MH													0	24	Low cost if change recy freq
POL	R	C9	Mandatory program - enforcement options... FOR ORGANICS	VH	ML	ML	MH	5.5	MH													0	25	Low cost if change recy freq
POL	R	S4	Stop spring clean-ups	M	0	0	MH	5.7	H		Y	Y		Y	Y	Y	Y	Y	Y	Y		9	26	Low cost if change recy freq
REG	R	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	27	savings
REG	R	S2	License with reporting required as part of license (organics) coding: R/O	VL	VL	0	L	4.6	MH													0	28	tons near or far?
REG	R	I5	Hauler license requirements to offer food / organics scrap coll'n	ML	VL	0	L	5.4	MH													0	29	
																						0	30	
																						0	31	

			COMMERCIAL STRATEGIES	Relative	Relative	Relative	ggressiv	WTD		In Place Where in Boulder County? (based on reports from RCAB surve												32	
	R/C	ID#		Tons Diverted	City Cost	Gen Cost	(& politics)	SCORE (hi is good)	word for score	Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield		# Towns	33
EDU	C	E3	Education on bidding / contracts	M	VL	VL	L	5.7	H													0	34
EDU	C	E2	Business recognition program (organics)	L	VL	0	0	5.3	MH													0	35
EDU	C	E5	Free waste audits / visits (organics) (city coding technical assistance)	ML	M	VL	L	4.4	M	Y	Y	N	N	N	N	N						2	36
EDU	C	E1	Com'l outreach / social marketing	L	ML	0	L	4.4	M	N	Y	N	N	N	N	Y						2	37
EDU	C	E4	Outreach on food scraps diversion - door to door	ML	ML	VL	L	4.7	MH													0	38
FAC	C	F1	Dropoff at transfer station or other location. (yw / fw) (city coding R / YW / FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	39
FAC	C	F2	Facility development / partnerships, etc. - regional / area organics	MH	H	VL	M	4.3	M													0	40
INC	C	I1	Taxes on some material streams (e.g. trash, not organics)	M	L	L	H	4.6	MH													0	41
INC	C	C2	Require incentive rates for Composting service	H	ML	M	MH	5.0	MH													0	42
INC	C	I3	Contract incentives to meet goals (organics)	M	L	VL	M	5.1	MH													0	43
INC	C	I4	Differential tip fees for meeting goals (organics)	MH	ML	L	H	4.7	MH													0	44
PGM	C	C3	Food scraps costs embedded for all com'l customers	VH	M	L	H	5.2	MH													0	45
PGM	C	C14	Small businesses added to residential composting program	ML	L	VL	L	5.0	MH													0	46
PGM	C	PAYT1	PAYT composting bag program for small com'l	M	L	M	M	4.6	MH													0	47
PGM	C	PAYT2	PAYT / embedded food scraps col'n with ratio...	H	L	ML	MH	5.4	MH													0	48
PGM	C	C11	Establish limited targeted com'l food scraps program or partner or pilot	MH	M	ML	ML	4.7	MH													0	49
PGM	C	C12	ABC for food	H	ML	L	M	5.4	MH													0	50
PGM	C	P4	Encourage cooperative agreements in neighborhoods / joint coll'n / pay (for organics)?	ML	M	ML	L	4.1	M													0	51
POL	C	S1	Measure / estimate current diversion in community and set goals	VL	L	0	0	4.6	MH													0	52
POL	C	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	MH	ML	L	MH	4.9	MH													0	53
POL	C	C7	Mandatory composting for selected generators	H	M	L	H	4.8	MH													0	54
POL	C	C10	Contracting for collection - community or business association o muni	VH	ML	0	H	5.8	H													0	55
POL	C	C8	Disposal ban - food / organics	VH	ML	L	H	5.5	MH													0	56
POL	C	C9	Mandatory program - enforcement options...	VH	ML	L	H	5.5	MH													0	57
REG	C	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	58
REG	C	S5	Space for containers ordinance	L	VL	VL	L	4.9	MH													0	59
REG	C	S2	License with reporting required as part of license	VL	ML	0	M	3.7	M	Y	Y	Y	N	N	NA	N					CU	3	60
REG	C	I5	Com'l hauler license requirements to offer food scrap coll'n	ML	M	L	M	3.9	M													0	61
REG	C	S7	Require organics plans	L	L	VL	M	4.3	M													0	62
INC	C	I6	Discount / incentive to businesses for compost subscription	M	M	M	ML	4.2	M	Y	Y											0	63
																						2	64

Tons tough
city cost?
VH if EOW trash
assume low costs for targeted biz
have coml lower cost than res
assumes trash contracting that includes other svcs
Hi tons future?
added

ORGANICS PROGRAM CONCEPTS FOR CONSIDERATION IN BOULDER COUNTY - DRAFT

Prepared by Lisa Skumatz, SERA, for use of RCAB planning - not to be circulated / used beyond, please.

SORTED BY SCORE

COML Wgts for scores (add to 100%) ==>	40%	30%	15%	15%	100%	4.8	<==Threshold COML - colored cell			
RES Wgts for scores (add to 100%) ==>	40%	30%	15%	15%	100%	5.1	<==Threshold RES - colored cell			

			RESIDENTIAL PROGRAMS	Relative	Relative	Relative	Aggressi	WTD		In Place Where in Boulder County? (based on reports from RCAB survey)														
	R/C	ID#		Tons Diverted	City Cost	Gen Cost	(& politics)	SCORE (hi is good)	word for score	Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield	Other	# Towns	original order	Scoring Notes
PGM	R	P1	EOW Trash	H	VL	VL	M	6.2	H													0	1	
POL	R	C10	Consider (organics) contracts for collection to get desired services at desired incentives	VH	ML	0	H	5.8	H													0	13	
POL	R	S4	Stop spring clean-ups	M	0	0	MH	5.7	H		Y	Y		Y	Y	Y	Y	Y	Y	Y		9	22	savings to HH
INC	R	C2	Require incentive rates for Composting service	H	VL	M	MH	5.6	H													0	27	savings
PGM	R	P2	Consider EOW Recy to help fund organics coll'n	MH	VL	VL	MH	5.6	H													0	9	
INC	R	I2	Change contract payments to favor food / organics tons (for cities with contracts)	M	VL	ML	VL	5.5	MH													0	15	tons - asssumes this is the only way
PGM	R	C3	PAYT / embedded food scraps (organics) col'n	MH	VL	ML	M	5.5	MH	Y	some	N	Y	N	N	Y?	N	N	N	N		2	10	
PGM	R	C5	Pay more for NOT composting	MH	VL	ML	M	5.5	MH													0	14	
POL	R	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	M	L	0	L	5.5	MH													0	18	Assumes cost of compost pgm
POL	R	C7	Mandatory food (organics?) for all HHs	VH	ML	ML	MH	5.5	MH													0	21	assumed dev'p cost
POL	R	C8	Disposal ban - food / organics	VH	ML	ML	MH	5.5	MH													0	24	Low cost if change recy freq
POL	R	C9	Mandatory program - enforcement options... FOR ORGANICS	VH	ML	ML	MH	5.5	MH													0	25	Low cost if change recy freq
INC	R	I3	Contract incentives to meet goals (for cities with contracts)	M	L	VL	L	5.4	MH													0	26	Low cost if change recy freq
INC	R	I4	Differential tip fees for meeting goals	M	0	L	MH	5.4	MH													0	11	
PGM	R	P3	Micro can for trash	M	VL	L	ML	5.4	MH													0	12	
REG	R	I5	Hauler license requirements to offer food / organics scrap coll'n	ML	VL	0	L	5.4	MH													0	17	
INC	R	C1	Food scraps (organics) costs embedded for all res customers	H	L	M	MH	5.3	MH	Y	S	NA	Y	NA	N	NA	NA	NA	NA	NA		2	30	
PGM	R	C6	No bin no barrel (FOR ORGANICS)	MH	ML	0	M	5.3	MH													0	7	
EDU	R	MF1	MF concentrated outreach (city coding NOT organics-centric)	ML	ML	0	VL	5.0	MH	Y	Y	Y	N	N	N	N	N	N	N	N		3	19	assumes 0 cost to HH
POL	R	S1	Measure / estimate current diversion in community and set goals (for organics) (city coding for tons, goal, organics - T / G / O)	VL	VL	0	0	4.9	MH	YYY ?	YYY ?	YNN ?	YNY ?	NN	YYN	YNY ?	NNN					0	3	
REG	R	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	6	
REG	R	S2	License with reporting required as part of license (organics) coding: R/O	VL	VL	0	L	4.6	MH													0	28	tons near or far?
FAC	R	F1	Dropoff at transfer station or other location (city coding R/YW/FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	29	
EDU	R	E1	Social marketing	ML	MH	0	VL	4.4	M													0	5	
POL	R	MF2	City-wide ordinance requiring all MF >x units to get service - ORGANICS (city coding R/O)	ML	VL	M	MH	4.4	M	Y/N	N/N	Y/N	Y/N	N/N	Y/N	N/N	N/N					0	2	
EDU	R	E3	Insink disposals program	L	L	ML	L	4.3	M													0	23	VL to City;
FAC	R	F2	Wet dry collection system	VH	H	MH	H	4.2	M													0	4	ed only no $
INC	R	I1	Taxes on some material streams	ML	L	L	H	4.2	M													0	6	
PGM	R	C4	Rebate for food / organics bin	ML	M	0	M	4.2	M													0	8	
																						0	16	

																							0	31	
			COMMERCIAL STRATEGIES	***Relative***	***Relative***	***Relative***	***Aggressiv***	***WTD***		***In Place Where in Boulder County? (based on reports from RCAB surv***													32	
	R/C	ID#		Tons Diverted	City Cost	Gen Cost	(& politics)	SCORE (hi is good)	word for score	Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield		# Towns	33	
																						0	34	
POL	C	C10	Contracting for collection - community or business association or muni	VH	ML	0	H	5.8	H													0	56	assumes trash contracting that in
EDU	C	E3	Education on bidding / contracts	M	VL	VL	L	5.7	H													0	35	
POL	C	C8	Disposal ban - food / organics	VH	ML	L	H	5.5	MH													0	57	
POL	C	C9	Mandatory program - enforcement options...	VH	ML	L	H	5.5	MH													0	58	
PGM	C	PAYT2	PAYT / embedded food scraps col'n with ratio...	H	L	ML	MH	5.4	MH													0	49	VH if EOW trash
PGM	C	C12	ABC for food	H	ML	L	M	5.4	MH													0	51	assume low costs for targeted biz
EDU	C	E2	Business recognition program (organics)	L	VL	0	0	5.3	MH													0	36	
PGM	C	C3	Food scraps costs embedded for all com'l customers	VH	M	L	H	5.2	MH													0	46	
INC	C	I3	Contract incentives to meet goals (organics)	M	L	VL	M	5.1	MH													0	44	
INC	C	C2	Require incentive rates for Composting service	H	ML	M	MH	5.0	MH													0	43	
PGM	C	C14	Small businesses added to residential composting program	ML	L	VL	L	5.0	MH													0	47	city cost?
POL	C	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	MH	ML	L	MH	4.9	MH													0	54	
REG	C	S5	Space for containers ordinance	L	VL	VL	L	4.9	MH													0	60	Hi tons future?
POL	C	C7	Mandatory composting for selected generators	H	M	L	H	4.8	MH													0	55	have coml lower cost than res
REG	C	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	59	
EDU	C	E4	Outreach on food scraps diversion - door to door	ML	ML	VL	L	4.7	MH													0	39	
INC	C	I4	Differential tip fees for meeting goals (organics)	MH	ML	L	H	4.7	MH													0	45	
PGM	C	C11	Establish limited targeted com'l food scraps program or partner or pilot	MH	M	ML	ML	4.7	MH													0	50	
INC	C	I1	Taxes on some material streams (e.g. trash, not organics)	M	L	L	H	4.6	MH													0	42	tons tough
PGM	C	PAYT1	PAYT composting bag program for small com'l	M	L	M	M	4.6	MH													0	48	
POL	C	S1	Measure / estimate current diversion in community and set goals	VL	L	0	0	4.6	MH													0	53	
FAC	C	F1	Dropoff at transfer station or other location. (yw / fw) (city coding R / YW / FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	40	
EDU	C	E5	Free waste audits / visits (organics) (city coding technical assistance)	ML	M	VL	L	4.4	M	Y	Y	N	N	N	N	N						2	37	
EDU	C	E1	Com'l outreach / social marketing	L	ML	0	L	4.4	M	N	Y	N	N	N	N	Y						2	38	
FAC	C	F2	Facility development / partnerships, etc. - regional / area organics	MH	H	VL	M	4.3	M													0	41	
REG	C	S7	Require organics plans	L	L	VL	M	4.3	M													0	63	
INC	C	I6	Discount / incentive to businesses for compost subscription	M	M	M	ML	4.2	M	Y	Y											2	64	added
PGM	C	P4	Encourage cooperative agreements in neighborhoods / joint coll'n / pay (for organics)?	ML	M	ML	L	4.1	M													0	52	
REG	C	I5	Com'l hauler license requirements to offer food scrap coll'n	ML	M	L	M	3.9	M													0	62	
REG	C	S2	License with reporting required as part of license	VL	ML	0	M	3.7	M	Y	Y	Y	N	N	NA	N					CU	3	61	

2006 JA 2006

ORGANICS PROGRAM CONCEPTS FOR CONSIDERATION IN BOULDER COUNTY - DRAFT

SORTED BY POLITICS

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COML Wgts for scores (add to 100%) ==>	40%	30%	15%	15%	100%	4.8	<==Threshold COML - colored cell				
RES Wgts for scores (add to 100%) ==>	40%	30%	15%	15%	100%	5.1	<==Threshold RES - colored cell				

	R/C	ID#	RESIDENTIAL PROGRAMS	Relative Tons Diverted	Relative City Cost	Relative Gen Cost	Aggress (& politics)	WTD SCORE (hi is good)	word for score	In Place Where in Boulder County? (based on reports from RCAB survey)														
										Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield	Other	# Towns	original order	Scoring Notes
POL	R	S1	Measure / estimate current diversion in community and set goals (for organics) (city coding for tons, goal, organics - T / G / O)	VL	VL	0	0	4.9	MH	YYY?	YYY?	YNN?	YNY?	NN	YYN	YNY?	NNN						1	
EDU	R	E1	Social marketing	ML	MH	0	VL	4.4	M													0	6	
EDU	R	MF1	MF concentrated outreach (city coding NOT organics-centric)	ML	ML	0	VL	5.0	MH	Y	Y	Y	N	N	N	N	N	N	N	N		0	2	
INC	R	I2	Change contract payments to favor food / organics tons (for cities with contracts)	M	VL	ML	VL	5.5	MH													3	3	
REG	R	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	10	
EDU	R	E3	Insink disposals program	L	L	ML	L	4.3	M													0	28	tons near or far?
FAC	R	F1	Dropoff at transfer station or other location (city coding R/YW/FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	4	ed only no $
INC	R	I3	Contract incentives to meet goals (for cities with contracts)	M	L	VL	L	5.4	MH													0	5	
POL	R	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	M	L	0	L	5.5	MH													0	11	
REG	R	S2	License with reporting required as part of license (organics) coding: R/O	VL	VL	0	L	4.6	MH													0	21	assumed dev'p cost
REG	R	I5	Hauler license requirements to offer food / organics scrap coll'n	ML	VL	0	L	5.4	MH													0	29	
PGM	R	P3	Micro can for trash	M	VL	L	ML	5.4	MH													0	30	
PGM	R	P1	EOW Trash	H	VL	VL	M	6.2	H													0	17	
PGM	R	C3	PAYT / embedded food scraps (organics) col'n	MH	VL	ML	M	5.5	MH													0	13	
PGM	R	C4	Rebate for food / organics bin	ML	M	0	M	4.2	M	Y	some	N	Y	N	N	Y?	N	N	N	N		2	14	
PGM	R	C5	Pay more for NOT composting	MH	VL	ML	M	5.5	MH													0	16	
PGM	R	C6	No bin no barrel (FOR ORGANICS)	MH	ML	0	M	5.3	MH													0	18	Assumes cost of compost pgm
INC	R	C1	Food scraps (organics) costs embedded for all res customers	H	L	M	MH	5.3	MH	Y	S	NA	Y	NA	N	NA	NA	NA	NA	NA		0	19	assumes 0 cost to HH
INC	R	C2	Require incentive rates for Composting service	H	VL	M	MH	5.6	H													2	7	
INC	R	I4	Differential tip fees for meeting goals	M	0	L	MH	5.4	MH													0	9	
PGM	R	P2	Consider EOW Recy to help fund organics coll'n	MH	VL	VL	MH	5.6	H													0	12	
POL	R	MF2	City-wide ordinance requiring all MF >x units to get service - ORGANICS (city coding R/O)	ML	VL	M	MH	4.4	M	Y/N	N/N	Y/N	Y/N	N/N	Y/N	N/N	N/N					0	15	tons - asssumes this is the only way you can get it funded
POL	R	C7	Mandatory food (organics?) for all HHs	VH	ML	ML	MH	5.5	MH													0	23	VL to City;
POL	R	C8	Disposal ban - food / organics	VH	ML	ML	MH	5.5	MH													0	24	Low cost if change recy freq
POL	R	C9	Mandatory program - enforcement options... FOR ORGANICS	VH	ML	ML	MH	5.5	MH													0	25	Low cost if change recy freq
POL	R	S4	Stop spring clean-ups	M	0	0	MH	5.7	H		Y	Y		Y	Y	Y	Y	Y	Y	Y		0	26	Low cost if change recy freq
FAC	R	F2	Wet dry collection system	VH	H	MH	H	4.2	M													9	27	savings
INC	R	I1	Taxes on some material streams	ML	L	L	H	4.2	M													0	6	
POL	R	C10	Consider (organics) contracts for collection to get desired services at desired incentives	VH	ML	0	H	5.8	H													0	8	
																						0	22	savings to HH
																						0	31	

			COMMERCIAL STRATEGIES	Relative	Relative	Relative	ggressiv	WTD		In Place Where in Boulder County? (based on reports from RCAB surve													32	
	R/C	ID#		Tons Diverted	City Cost	Gen Cost	(& politics)	SCORE (hi is good)	word for score	Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield		# Towns	33	
EDU	C	E2	Business recognition program (organics)	L	VL	0	0	5.3	MH													0	34	
POL	C	S1	Measure / estimate current diversion in community and set goals	VL	L	0	0	4.6	MH													0	36	
REG	C	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	53	
EDU	C	E3	Education on bidding / contracts	M	VL	VL	L	5.7	H													0	59	
EDU	C	E5	Free waste audits / visits (organics) (city coding technical assistance)	ML	M	VL	L	4.4	M	Y	Y	N	N	N	N	N						0	35	
EDU	C	E1	Com'l-outreach / social marketing	L	ML	0	L	4.4	M	N	Y	N	N	N	N	Y						2	37	
EDU	C	E4	Outreach on food scraps diversion - door to door	ML	ML	VL	L	4.7	MH													2	38	
FAC	C	F1	Dropoff at transfer station or other location. (yw / fw) (city coding R / YW / FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	39	
PGM	C	C14	Small businesses added to residential composting program	ML	L	VL	L	5.0	MH													0	40	
PGM	C	P4	Encourage cooperative agreements in neighborhoods / joint coll'n / pay (for organics)?	ML	M	ML	L	4.1	M													0	47	city cost?
REG	C	S5	Space for containers ordinance	L	VL	VL	L	4.9	MH													0	52	
PGM	C	C11	Establish limited targeted com'l food scraps program or partner or pilot	MH	M	ML	ML	4.7	MH													0	60	Hi tons future?
INC	C	I6	Discount / incentive to businesses for compost subscription	M	M	M	ML	4.2	M	Y	Y											0	50	
FAC	C	F2	Facility development / partnerships, etc. - regional / area organics	MH	H	VL	M	4.3	M													2	64	added
INC	C	I3	Contract incentives to meet goals (organics)	M	L	VL	M	5.1	MH													0	41	
PGM	C	PAYT1	PAYT composting bag program for small com'l	M	L	M	M	4.6	MH													0	44	
PGM	C	C12	ABC for food	H	ML	L	M	5.4	MH													0	48	
REG	C	S2	License with reporting required as part of license	VL	ML	0	M	3.7	M	Y	Y	Y	N	N	NA	N					CU	0	51	assume low costs for targeted biz
REG	C	I5	Com'l hauler license requirements to offer food scrap coll'n	ML	M	L	M	3.9	M													3	61	
REG	C	S7	Require organics plans	L	L	VL	M	4.3	M													0	62	
INC	C	C2	Require incentive rates for Composting service	H	ML	M	MH	5.0	MH													0	63	
PGM	C	PAYT2	PAYT / embedded food scraps col'n with ratio...	H	L	ML	MH	5.4	MH													0	43	
POL	C	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	MH	ML	L	MH	4.9	MH													0	49	VH if EOW trash
INC	C	I1	Taxes on some material streams (e.g. trash, not organics)	M	L	L	H	4.6	MH													0	54	
INC	C	I4	Differential tip fees for meeting goals (organics)	MH	ML	L	H	4.7	MH													0	42	tons tough
PGM	C	C3	Food scraps costs embedded for all com'l customers	VH	M	L	H	5.2	MH													0	45	
POL	C	C7	Mandatory composting for selected generators	H	M	L	H	4.8	MH													0	46	
POL	C	C10	Contracting for collection - community or business association or muni	VH	ML	0	H	5.8	H													0	55	have coml lower cost than res
POL	C	C8	Disposal ban - food / organics	VH	ML	L	H	5.5	MH													0	56	assumes trash contracting that includes other svcs
POL	C	C9	Mandatory program - enforcement options...	VH	ML	L	H	5.5	MH													0	57	
																						0	58	

ORGANICS PROGRAM CONCEPTS FOR CONSIDERATION IN BOULDER COUNTY - DRAFT

SORTED BY TONS

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COML Wgts for scores (add to 100%) ==> 40% 30% 15% 15% 100% 4.8 <==Threshold COML - colored cell

RES Wgts for scores (add to 100%) ==> 40% 30% 15% 15% 100% 5.1 <==Threshold RES - colored cell

	R/C	ID#	RESIDENTIAL PROGRAMS	Relative Tons Diverted	Relative City Cost	Relative Gen Cost	Aggress (& politics)	WTD SCORE (hi is good)	word for score	In Place Where in Boulder County? (based on reports from RCAB survey) Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield	Other	# Towns	Original order	Scoring Notes
POL	R	S1	Measure / estimate current diversion in community and set goals (for organics) (city coding for tons, goal, organics - T / G / O)	VL	VL	0	0	4.9	MH	YYY?	YYY?	YNN ?	YNY ?	NN	YYN	YNY ?	NNN					0	1	
REG	R	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	6	
REG	R	S2	License with reporting required as part of license (organics) coding: R/O	VL	VL	0	L	4.6	MH													0	28	tons near or far?
EDU	R	E3	Insink disposals program	L	L	ML	L	4.3	M													0	29	
EDU	R	E1	Social marketing	ML	MH	0	VL	4.4	M													0	4	ed only no $
EDU	R	MF1	MF concentrated outreach (city coding NOT organics-centric)	ML	ML	0	VL	5.0	MH	Y	Y	Y	N	N	N	N	N	N	N	N		3	3	
FAC	R	F1	Dropoff at transfer station or other location (city coding R/YW/FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	5	
REG	R	I5	Hauler license requirements to offer food / organics scrap coll'n	ML	VL	0	L	5.4	MH													0	30	
PGM	R	C4	Rebate for food / organics bin	ML	M	0	M	4.2	M													0	16	
POL	R	MF2	City-wide ordinance requiring all MF >x units to get service - ORGANICS (city coding R/O)	ML	VL	M	MH	4.4	M	Y/N	N/N	Y/N	Y/N	N/N	Y/N	N/N	N/N					0	23	VL to City;
INC	R	I1	Taxes on some material streams	ML	L	L	H	4.2	M													0	8	
INC	R	I2	Change contract payments to favor food / organics tons (for cities with contracts)	M	VL	ML	VL	5.5	MH													0	10	
INC	R	I3	Contract incentives to meet goals (for cities with contracts)	M	L	VL	L	5.4	MH													0	11	
POL	R	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	M	L	0	L	5.5	MH													0	21	assumed dev'p cost
PGM	R	P3	Micro can for trash	M	VL	L	ML	5.4	MH													0	17	
INC	R	I4	Differential tip fees for meeting goals	M	0	L	MH	5.4	MH													0	12	
POL	R	S4	Stop spring clean-ups	M	0	0	MH	5.7	H		Y	Y		Y	Y	Y	Y	Y	Y	Y		9	27	savings
PGM	R	C3	PAYT / embedded food scraps (organics) col'n	MH	VL	ML	M	5.5	MH	Y	some	N	Y	N	N	Y?	N	N	N	N		2	14	
PGM	R	C5	Pay more for NOT composting	MH	VL	ML	M	5.5	MH													0	18	Assumes cost of compost pgm
PGM	R	C6	No bin no barrel (FOR ORGANICS)	MH	ML	0	M	5.3	MH													0	19	assumes 0 cost to HH
PGM	R	P2	Consider EOW Recy to help fund organics coll'n	MH	VL	VL	MH	5.6	H													0	15	tons - asssumes this is the only way you can get it funded
PGM	R	P1	EOW Trash	H	VL	VL	M	6.2	H													0	13	
INC	R	C1	Food scraps (organics) costs embedded for all res customers	H	L	M	MH	5.3	MH	Y	S	NA	Y	NA	N	NA	NA	NA	NA	NA		2	7	
INC	R	C2	Require incentive rates for Composting service	H	VL	M	MH	5.6	H													0	9	
POL	R	C7	Mandatory food (organics?) for all HHs	VH	ML	ML	MH	5.5	MH													0	24	Low cost if change recy freq
POL	R	C8	Disposal ban - food / organics	VH	ML	ML	MH	5.5	MH													0	25	Low cost if change recy freq
POL	R	C9	Mandatory program - enforcement options... FOR ORGANICS	VH	ML	ML	MH	5.5	MH													0	26	Low cost if change recy freq
FAC	R	F2	Wet dry collection system	VH	H	MH	H	4.2	M													0	6	
POL	R	C10	Consider (organics) contracts for collection to get desired services at desired incentives	VH	ML	0	H	5.8	H													0	22	savings to HH
																						0	31	

			COMMERCIAL STRATEGIES	Relative	Relative	Relative	ggressiv	WTD		In Place Where in Boulder County? (based on reports from RCAB surve												32	
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																						0	34
POL	C	S1	Measure / estimate current diversion in community and set goals	VL	L	0	0	4.6	MH													0	53
REG	C	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	59
REG	C	S2	License with reporting required as part of license	VL	ML	0	M	3.7	M	Y	Y	Y	N	N	NA	N					CU	3	61
EDU	C	E2	Business recognition program (organics)	L	VL	0	0	5.3	MH													0	36
EDU	C	E1	Com'l outreach / social marketing	L	ML	0	L	4.4	M	N	Y	N	N	N	N	Y						2	38
REG	C	S5	Space for containers ordinance	L	VL	VL	L	4.9	MH													0	60
REG	C	S7	Require organics plans	L	L	VL	M	4.3	M													0	63
EDU	C	E5	Free waste audits / visits (organics) (city coding technical assistance)	ML	M	VL	L	4.4	M	Y	Y	N	N	N	N	N						2	37
EDU	C	E4	Outreach on food scraps diversion - door to door	ML	ML	VL	L	4.7	MH													0	39
FAC	C	F1	Dropoff at transfer station or other location. (yw / fw) (city coding R / YW / FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	40
PGM	C	C14	Small businesses added to residential composting program	ML	L	VL	L	5.0	MH													0	47
PGM	C	P4	Encourage cooperative agreements in neighborhoods / joint coll'n / pay (for organics)?	ML	M	ML	L	4.1	M													0	52
REG	C	I5	Com'l hauler license requirements to offer food scrap coll'n	ML	M	L	M	3.9	M													0	62
EDU	C	E3	Education on bidding / contracts	M	VL	VL	L	5.7	H													0	35
INC	C	I6	Discount / incentive to businesses for compost subscription	M	M	M	ML	4.2	M	Y	Y											2	64
INC	C	I3	Contract incentives to meet goals (organics)	M	L	VL	M	5.1	MH													0	44
PGM	C	PAYT1	PAYT composting bag program for small com'l	M	L	M	M	4.6	MH													0	48
INC	C	I1	Taxes on some material streams (e.g. trash, not organics)	M	L	L	H	4.6	MH													0	42
PGM	C	C11	Establish limited targeted com'l food scraps program or partner or pilot	MH	M	ML	ML	4.7	MH													0	50
FAC	C	F2	Facility development / partnerships, etc. - regional / area organics	MH	H	VL	M	4.3	M													0	41
POL	C	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	MH	ML	L	MH	4.9	MH													0	54
INC	C	I4	Differential tip fees for meeting goals (organics)	MH	ML	L	H	4.7	MH													0	45
PGM	C	C12	ABC for food	H	ML	L	M	5.4	MH													0	51
INC	C	C2	Require incentive rates for Composting service	H	ML	M	MH	5.0	MH													0	43
PGM	C	PAYT2	PAYT / embedded food scraps col'n with ratio...	H	L	ML	MH	5.4	MH													0	49
POL	C	C7	Mandatory composting for selected generators	H	M	L	H	4.8	MH													0	55
PGM	C	C3	Food scraps costs embedded for all com'l customers	VH	M	L	H	5.2	MH													0	46
POL	C	C10	Contracting for collection - community or business association or muni	VH	ML	0	H	5.8	H													0	56
POL	C	C8	Disposal ban - food / organics	VH	ML	L	H	5.5	MH													0	57
POL	C	C9	Mandatory program - enforcement options...	VH	ML	L	H	5.5	MH													0	58

Hi tons future?

city cost?

added

tons tough

assume low costs for targeted biz

VH if EOW trash

have com'l lower cost than res

assumes trash contracting that includes other svcs

SORTED BY CITY COST

ORGANICS PROGRAM CONCEPTS FOR CONSIDERATION IN BOULDER COUNTY - DRAFT

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COML Wgts for scores (add to 100%) ==> 40% 30% 15% 15% 100% 4.8 <==Threshold COML - colored cell

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INC	R	I4	Differential tip fees for meeting goals	M	0	L	MH	5.4	MH													0	1	
POL	R	S4	Stop spring clean-ups	M	0	0	MH	5.7	H		Y	Y		Y	Y	Y	Y	Y	Y	Y		9	12	
POL	R	S1	Measure / estimate current diversion in community and set goals (for organics) (city coding for tons, goal, organics - T / G / O)	VL	VL	0	0	4.9	MH	YYY?	YYY?	YNN ?	YNY ?	NN	YYN	YNY ?	NNN					0	27	savings
REG	R	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	6	
REG	R	S2	License with reporting required as part of license (organics) coding: R/O	VL	VL	0	L	4.6	MH													0	28	tons near or far?
REG	R	I5	Hauler license requirements to offer food / organics scrap coll'n	ML	VL	0	L	5.4	MH													0	29	
POL	R	MF2	City-wide ordinance requiring all MF >x units to get service - ORGANICS (city coding R/O)	ML	VL	M	MH	4.4	M	Y/N	N/N	Y/N	Y/N	N/N	Y/N	N/N	N/N					0	30	
INC	R	I2	Change contract payments to favor food / organics tons (for cities with contracts)	M	VL	ML	VL	5.5	MH													0	23	VL to City;
PGM	R	P3	Micro can for trash	M	VL	L	ML	5.4	MH													0	10	
PGM	R	C3	PAYT / embedded food scraps (organics) coll'n	MH	VL	ML	M	5.5	MH	Y	some	N	Y	N	N	Y?	N	N	N	N		0	17	
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INC	R	C2	Require incentive rates for Composting service	H	VL	M	MH	5.6	H													0	13	
EDU	R	E3	Insink disposals program	L	L	ML	L	4.3	M													0	9	
INC	R	I1	Taxes on some material streams	ML	L	L	H	4.2	M													0	4	ed only no $
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EDU	R	MF1	MF concentrated outreach (city coding NOT organics-centric)	ML	ML	0	VL	5.0	MH	Y	Y	Y	N	N	N	N	N	N	N	N		2	7	
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POL	R	C7	Mandatory food (organics?) for all HHs	VH	ML	ML	MH	5.5	MH													0	19	assumes 0 cost to HH
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PGM	R	C4	Rebate for food / organics bin	ML	M	0	M	4.2	M													0	5	
EDU	R	E1	Social marketing	ML	MH	0	VL	4.4	M													0	16	
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																						0	41	

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SORTED BY GEN COST

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COML Wgts for scores (add to 100%) ==> 40% 30% 15% 15% 100% 4.8 <==Threshold COML - colored cell

RES Wgts for scores (add to 100%) ==> 40% 30% 15% 15% 100% 5.1 <==Threshold RES - colored cell

			RESIDENTIAL PROGRAMS	Relative Tons Diverted	Relative City Cost	Relative Gen Cost	Aggress (& politics)	WTD SCORE (hi is good)	word for score	In Place Where in Boulder County? (based on reports from RCAB survey)														
	R/C	ID#								Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield	Other	# Towns	Original order	Scoring Notes
POL	R	S4	Stop spring clean-ups	M	0	0	MH	5.7	H		Y	Y		Y	Y	Y	Y	Y	Y	Y		9	27	savings
POL	R	S1	Measure / estimate current diversion in community and set goals (for organics) (city coding for tons, goal, organics - T / G / O)	VL	VL	0	0	4.9	MH	YYY?	YYY?	YNN ?	YNY ?	NN	YYN	YNY ?	NNN					0	6	
REG	R	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	28	tons near or far?
REG	R	S2	License with reporting required as part of license (organics) coding: R/O	VL	VL	0	L	4.6	MH													0	29	
REG	R	I5	Hauler license requirements to offer food / organics scrap coll'n	ML	VL	0	L	5.4	MH													0	30	
POL	R	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	M	L	0	L	5.5	MH													0	21	assumed dev'p cost
EDU	R	MF1	MF concentrated outreach (city coding NOT organics-centric)	ML	ML	0	VL	5.0	MH	Y	Y	Y	N	N	N	N	N	N	N	N		3	3	
PGM	R	C6	No bin no barrel (FOR ORGANICS)	MH	ML	0	M	5.3	MH													0	19	assumes 0 cost to HH
POL	R	C10	Consider (organics) contracts for collection to get desired services at desired incentives	VH	ML	0	H	5.8	H													0	22	savings to HH
FAC	R	F1	Dropoff at transfer station or other location (city coding R/YW/FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	5	
PGM	R	C4	Rebate for food / organics bin	ML	M	0	M	4.2	M													0	16	
EDU	R	E1	Social marketing	ML	MH	0	VL	4.4	M													0	2	
PGM	R	P2	Consider EOW Recy to help fund organics coll'n	MH	VL	VL	MH	5.6	H													0	15	tons - asssumes this is the only way you can get it funded
PGM	R	P1	EOW Trash	H	VL	VL	M	6.2	H													0	13	
INC	R	I3	Contract incentives to meet goals (for cities with contracts)	M	L	VL	L	5.4	MH													0	11	
INC	R	I4	Differential tip fees for meeting goals	M	0	L	MH	5.4	MH													0	12	
PGM	R	P3	Micro can for trash	M	VL	L	ML	5.4	MH													0	17	
INC	R	I1	Taxes on some material streams	ML	L	L	H	4.2	M													0	8	
INC	R	I2	Change contract payments to favor food / organics tons (for cities with contracts)	M	VL	ML	VL	5.5	MH													0	10	
PGM	R	C3	PAYT / embedded food scraps (organics) col'n	MH	VL	ML	M	5.5	MH	Y	some	N	Y	N	N	Y?	N	N	N	N		2	14	
PGM	R	C5	Pay more for NOT composting	MH	VL	ML	M	5.5	MH													0	18	Assumes cost of compost pgm
EDU	R	E3	Insink disposals program	L	L	ML	L	4.3	M													0	4	ed only no $
POL	R	C7	Mandatory food (organics?) for all HHs	VH	ML	ML	MH	5.5	MH													0	24	Low cost if change recy freq
POL	R	C8	Disposal ban - food / organics	VH	ML	ML	MH	5.5	MH													0	25	Low cost if change recy freq
POL	R	C9	Mandatory program - enforcement options... FOR ORGANICS	VH	ML	ML	MH	5.5	MH													0	26	Low cost if change recy freq
POL	R	MF2	City-wide ordinance requiring all MF >x units to get service - ORGANICS (city coding R/O)	ML	VL	M	MH	4.4	M	Y/N	N/N	Y/N	Y/N	N/N	Y/N	N/N	N/N					0	23	VL to City;
INC	R	C2	Require incentive rates for Composting service	H	VL	M	MH	5.6	H													0	9	
INC	R	C1	Food scraps (organics) costs embedded for all res customers	H	L	M	MH	5.3	MH	Y	S	NA	Y	NA	N	NA	NA	NA	NA	NA		2	7	
FAC	R	F2	Wet dry collection system	VH	H	MH	H	4.2	M													0	6	
																						0	31	

			COMMERCIAL STRATEGIES	Relative	Relative	Relative	ggressiv	WTD		In Place Where in Boulder County? (based on reports from RCAB surve													32	
	R/C	ID#		Tons Diverted	City Cost	Gen Cost	(& politics)	SCORE (hi is good)	word for score	Boulder	BoCo	L'mont	Lville	Lyons	Super	Lafayette	Erie	Jamestown	Ward	Broomfield		# Towns	33	
																						0	34	
REG	C	L1	Lobby for better facility siting standards at state	VL	VL	0	VL	4.8	MH													0	59	
EDU	C	E2	Business recognition program (organics)	L	VL	0	0	5.3	MH													0	36	
POL	C	S1	Measure / estimate current diversion in community and set goals	VL	L	0	0	4.6	MH													0	53	
REG	C	S2	License with reporting required as part of license	VL	ML	0	M	3.7	M	Y	Y	Y	N	N	NA	N					CU	3	61	
EDU	C	E1	Com'l outreach / social marketing	L	ML	0	L	4.4	M	N	Y	N	N	N	N	Y						2	38	
POL	C	C10	Contracting for collection - community or business association or muni	VH	ML	0	H	5.8	H													0	56	assumes trash contracting that includes other svcs
FAC	C	F1	Dropoff at transfer station or other location. (yw / fw) (city coding R / YW / FW)	ML	M	0	L	4.5	M	YYY	YYN	Y?Y	Y??	Y?N	YYY	YNN	YYN	NNN	YNN	NYN		0	40	
REG	C	S5	Space for containers ordinance	L	VL	VL	L	4.9	MH													0	60	Hi tons future?
EDU	C	E3	Education on bidding / contracts	M	VL	VL	L	5.7	H													0	35	
REG	C	S7	Require organics plans	L	L	VL	M	4.3	M													0	63	
PGM	C	C14	Small businesses added to residential composting program	ML	L	VL	L	5.0	MH													0	47	city cost?
INC	C	I3	Contract incentives to meet goals (organics)	M	L	VL	M	5.1	MH													0	44	
EDU	C	E4	Outreach on food scraps diversion - door to door	ML	ML	VL	L	4.7	MH													0	39	
EDU	C	E5	Free waste audits / visits (organics) (city coding technical assistance)	ML	M	VL	L	4.4	M	Y	Y	N	N	N	N	N						2	37	
FAC	C	F2	Facility development / partnerships, etc. - regional / area organics	MH	H	VL	M	4.3	M													0	41	
INC	C	I1	Taxes on some material streams (e.g. trash, not organics)	M	L	L	H	4.6	MH													0	42	tons tough
POL	C	S3	Procurement - require use of local compost material - city & maybe bldg codes, etc.	MH	ML	L	MH	4.9	MH													0	54	
INC	C	I4	Differential tip fees for meeting goals (organics)	MH	ML	L	H	4.7	MH													0	45	
PGM	C	C12	ABC for food	H	ML	L	M	5.4	MH													0	51	assume low costs for targeted biz
POL	C	C8	Disposal ban - food / organics	VH	ML	L	H	5.5	MH													0	57	
POL	C	C9	Mandatory program - enforcement options...	VH	ML	L	H	5.5	MH													0	58	
REG	C	I5	Com'l hauler license requirements to offer food scrap coll'n	ML	M	L	M	3.9	M													0	62	
POL	C	C7	Mandatory composting for selected generators	H	M	L	H	4.8	MH													0	55	have coml lower cost than res
PGM	C	C3	Food scraps costs embedded for all com'l customers	VH	M	L	H	5.2	MH													0	46	
PGM	C	PAYT2	PAYT / embedded food scraps col'n with ratio...	H	L	ML	MH	5.4	MH													0	49	VH if EOW trash
PGM	C	P4	Encourage cooperative agreements in neighborhoods / joint coll'n / pay (for organics)?	ML	M	ML	L	4.1	M													0	52	
PGM	C	C11	Establish limited targeted com'l food scraps program or partner or pilot	MH	M	ML	ML	4.7	MH													0	50	
PGM	C	PAYT1	PAYT composting bag program for small com'l	M	L	M	M	4.6	MH													0	48	
INC	C	C2	Require incentive rates for Composting service	H	ML	M	MH	5.0	MH													0	43	
INC	C	I6	Discount / incentive to businesses for compost subscription	M	M	M	ML	4.2	M	Y	Y											2	64	added