



strategies ideas achievements a progress report

City of Boulder Master Plan for Waste Reduction



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BACKGROUND

The city has in place an established 50 percent waste reduction goal. At a May 25, 2004 City Council Study Session, staff was asked to create a plan for a larger vision and options for increasing the city's waste reduction goal. The following plan merges this Council request with the current city focus on master plan development. What follows is a Master Plan for Waste Reduction, identifying within it a "Current Plan," an "Action Plan" and a "Vision Plan."

Council may choose to adopt this Master Plan for Waste Reduction, to be later merged into a larger Strategic Plan for the Office Environmental Affairs and associated with the larger business planning process of the city. A Master Plan for Waste Reduction acts to create a framework for making strategic decisions about waste reduction programs and funding and, similar to the purpose of a citywide Business Plan, will help avoid:

- Maintaining functions at their current levels without comparing those uses to competing needs, implying that what is represents how the future should be;
- Reacting to the most vocal constituents, implying that needs that are heard most frequently and passionately should receive the scarce resources; and/or
- Funding the first few excellent ideas or proposals implying that whatever comes up first should grow.

EXECUTIVE SUMMARY

Boulder has a long tradition of thinking strategically about the future it wants to create.

This Master Plan for Waste Reduction (MPWR) contains goals, objectives, and policy guidance for waste reduction and recycling programs. In addition, it outlines an investment strategy for waste reduction programs in Boulder. This MPWR presents three levels of investment: a fiscally constrained (current) plan of how to use the revenue the city expects to receive from current Trash Tax funding sources, an action plan of how the city could invest in waste reduction if additional revenue becomes available, and a vision plan, a collection of strategies that move the city and the community toward a sustainable low-waste economy.

The sidebar gives a brief overview and presents excerpts from the list of programs anticipated with these three levels of investment.

Current Plan Excerpts

60% by Dec. 2007

- Single-stream recycling at the Boulder County Recycling Center.
- Residential yard and food waste collection.
- Commercial food waste collection.
- C & D debris recycling.
- Ban on electronic scrap.
- More aggressive "pay-as-you-throw".

Action Plan Excerpts

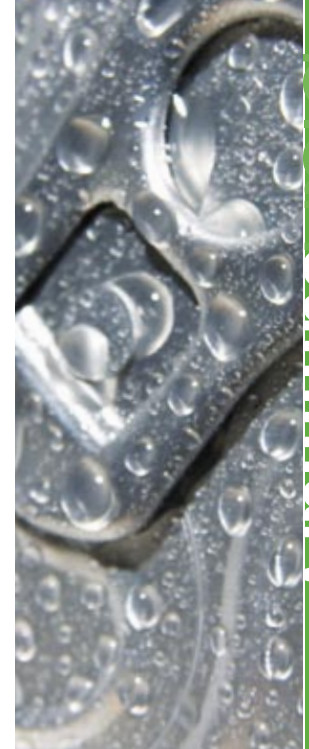
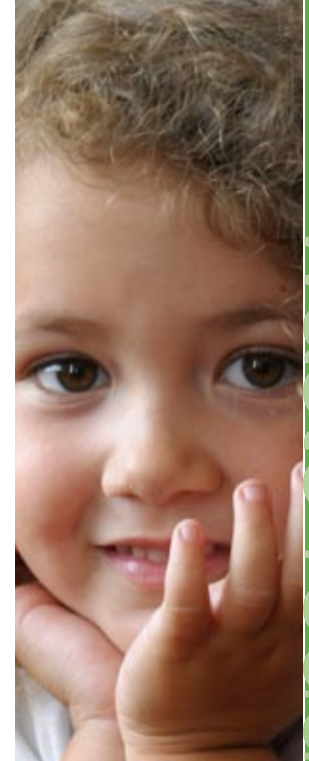
70% by Dec. 2012

- Minimum recycling for multi-family units.
- C & D bond.
- Increase or rebate business Trash Tax.
- Fine for electronics disposal.
- Commercial recycling goal.

Vision Plan Excerpts

85% by Dec. 2017

- Mandatory source separation ordinance.
- Mixed C & D center.
- Local "take back" laws.



WHAT IS A MASTER PLAN FOR WASTE REDUCTION?

This Master Plan for Waste Reduction (MPWR) is an initial attempt to formulate the city's long-range blueprint for waste reduction and smart resource use. This Master Plan attempts to address both material use and waste minimization. The MPWR fits under the policy umbrella of the Boulder Valley Comprehensive Plan (BVCP) and implements the broader community vision contained in the BVCP for the area of Environment, specifically subsections 4.33 through 4.44, Protect Natural Resources: Resource Conservation. This MPWR covers all forms of solid waste, excluding wastewater treatment biosolids, whether it originates from residents, businesses, or the city organization. The MPWR attempts to formulate a roadmap that curbs the general tendency toward waste and instead, harnesses both the community and the economy to be efficient and effective motivators of resource conservation.

HISTORY

Recycling and waste reduction are interwoven into the fabric of what makes Boulder, Boulder. Beginning in 1976, when a group of Eco-Cycle volunteers began collecting recyclable materials from residents in old, yellow school buses, Boulder was one of the first communities in the country to have curbside recycling. In 1989, the city instituted the Trash Tax and took over the curbside recycling program, expanding it city-wide in a partnership between the city, Eco-Cycle and Western Disposal. In 1992, 1995, and in 2001, the city expanded the types of recyclable materials collected. In 2001, the city also transformed the curbside program into a regulated, private sector industry, allowing the existing trash tax funding to be used to expand into commercial recycling and hard-to-recycle materials collection services.



Boulder residents when surveyed consistently report recycling to be one of Boulder's signature programs, and repeatedly ask for increased recycling opportunities. Eco-Cycle continues to boast 450 active volunteer members in Boulder, and they continue to process the community's recyclables at a recycling facility owned by Boulder County. Their new, "Zero Waste" programs have expanded internationally, where they use Boulder as a model for other communities to follow. Western Disposal has integrated recycling into their modus operandi for their waste business in Boulder and has lobbied other communities in Boulder County to follow in the city's footsteps with respect to programs and legislation surrounding waste reduction and recycling.

The City Council, as part of the 2000 budget process, established a 50 percent waste reduction goal, to be achieved by 2005. The city is approaching that goal, with statistics in 2004 at:

- Single-family residential waste diversion: primarily materials collected through curbside recycling, Spring Clean-up, and the Yard Waste Drop-off Center:
 - ✓ 48 percent [up from 38 percent in 2003]
- Multi-family residential waste diversion:
 - ✓ 13 percent [up from 12 percent in 2003]
- Commercial and industrial waste diversion, predominantly achieved through private, collection contracts with Eco-Cycle, Western Disposal, Green Girl Recycling, Tri-R Recycling, and several other Denver area recycling companies:
 - ✓ 25 percent [up from 23 percent in 2003]

Because approximately 55 percent of Boulder's waste stream is generated by businesses and industry, Boulder's overall community-wide waste diversion for 2003 was 30 percent, up from 26 percent in 2003.

VISION MASTER PLANNING GROUP

A group of experts and interested parties from throughout the Front Range gathered together and over a six month period carefully analyzed potential waste reduction programs for Boulder. This Vision Master Planning working group categorized all the potential new waste reduction programs into three categories: Short-term (0-2 years), Medium-term (2-5 years), and Long-term (5+ years). These categories were based on the following criteria:

- cost
- timing
- political will
- visibility
- diversion potential
- interagency/government cooperation
- infrastructure requirements
- toxicity reduction
- environmental impacts
- market value of recyclables
- program precedent
- viability
- measurability

The group created a laundry list of potential programs, partnerships, legislation, education, and facilities. This list was based on other communities' success stories, strategies that would build upon existing Boulder programs, and strategies that would address specific waste diversion needs in our community. Based on the expertise of the group members, the laundry lists were then categorized into strategies which could be implemented in the short- medium- and long-term planning horizons. Next, staff assigned diversion potential and general cost estimates to the categorized programs, partnerships, legislation, education, and facilities.

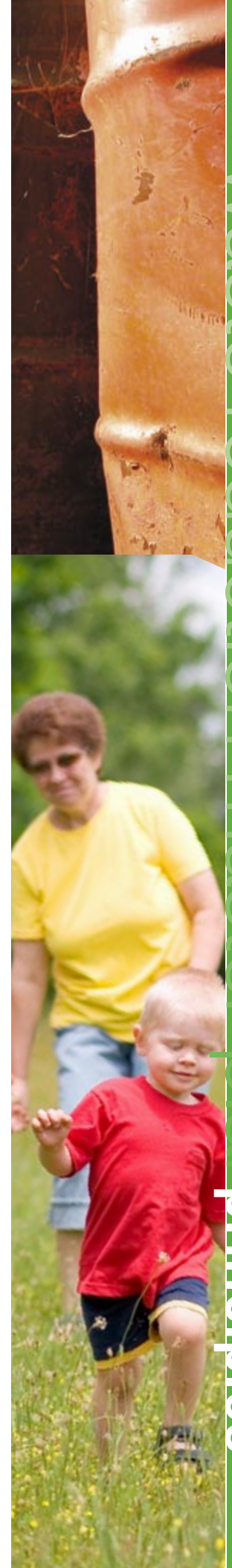
The working group then took this list of strategies and crafted the following vision for the future of waste reduction in Boulder. Upon examination, these short- medium- and long-term categories seemed to parallel the city's master planning process. Therefore, this Master Plan for Waste Reduction was crafted in an effort to create an effective and long-range context for waste reduction and resource conservation.

WHAT ARE THE GUIDING PRINCIPLES OF THIS MASTER PLAN FOR WASTE REDUCTION?

The group's philosophy in selecting these particular strategies was to focus on areas where service voids exist. Once identified, the group felt that in the short-term, the city should either directly provide the community with waste reduction programs that are easy and understandable or alternatively require that private sector businesses provide programs to the community, making participation in them voluntary. Then moving progressively to the medium- and long-term, the group felt it advisable to make recycling mandatory, once the infrastructure exists or alternatively, if convenient, voluntary programs prove not to be successful. The only area where the group felt it was advisable to institute mandatory recycling programs in the short-term was where the toxicity of the waste stream presented a significant environmental threat.

GUIDING PRINCIPLES

- **Identify service voids.**
- **Create effective partnerships** with for-profit and non-profit organizations to expand services with minimal city investment.
- **Support programs** that are convenient.
- **Utilize economic incentives** to alter habitual behavior.
- **Help build infrastructure** and then require its use once it's convenient and economical.



FOCUS AREAS

Upon examination, it is clear that two forces have been in place shaping the past 16 years of city waste management policies and programs. In robust budget years (1993-1998), the waste hierarchy, “reduce, reuse, recycle” guided and informed programs and policies. However, in lean budget years, the city has chosen to concentrate limited staff resources on maintaining existing recycling programs, despite the fact that they fall third in this hierarchy. The focus has been on convenient and economically viable recycling programs that have resulted in measurable success.

The city will continue to do what has worked well and has been successful. The public-private partnerships that have been formed to take advantage of an educated population and strong community-based businesses are models throughout the world. In the current restricted budget environment (2000-present) focusing on efficiency, city staff realizes that while it is important to maintain existing programs insofar as they are effective, it is also important that the city audit and analyze the efficiency of programs and when possible, re-structure or eliminate those that do not adequately serve the community.

A significant outcome of the vision planning discussions is the recommendation that as funding becomes available, either from new sources or through program service adjustments, the city should invest more in waste prevention. This could take the form of education, operations and/or legislation in order to appropriately shift more emphasis to the top of the waste hierarchy: Reduce.

1. Reduce
2. Reuse
3. Recycle

INVESTMENT PROGRAM

Current Plan: 60% waste reduction by 2007 – \$1,200,000 total funding

Investment Strategy

The city’s investment strategy for the Trash Tax focuses on building infrastructure by providing convenient programs and services that further waste reduction but are not initially viable for the private sector to provide. Programs and services are designed to be “spun off” when either the economic motivators or the desires of the program participants have shifted sufficiently to allow the private sector to take over. Sometimes this shift requires enabling legislation so that all private sector companies are playing by the same rules.

In all instances, the general investment strategy is for the city to only provide programs that protect the environmental health and safety of the community, always giving preference to cooperative ventures with for-profit and non-profit organizations above sole municipal control.

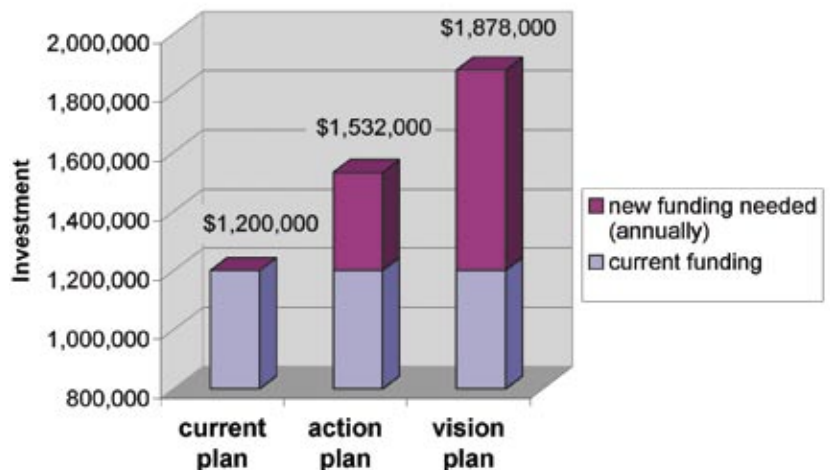


Figure 1

Investment Packages

The “Current Plan” or fiscally constrained plan is based on existing or planned waste reduction programs that use the revenue the city expects to receive from current Trash Tax funding sources.

The philosophy guiding programs and services in the Current Plan is to continue to do what has worked well and has been successful, taking particular care to maintain the many successful public-private partnerships that have been fostered in Boulder. However, while it is important to maintain existing programs insofar as they are effective, it is also important that the city audit and analyze the efficiency of programs and when possible, re-structure or eliminate those that do not adequately serve the community.

Existing programs

The city currently sponsors several waste reduction programs with Trash Tax revenues. These include the following:

- Center for Hard-to-Recycle Materials (CHaRM)
- Boulder Valley School District Education Programs
- Yard Waste Drop-off Center
- Farmers Market Home Composting Education
- Wood Waste Drop-off Center
- Business Recycling Coupons: First three months of recycling service for free.
- Spring Clean-up
- Commercial Compost Collection Incentive
- Fall Leaf Drop-off
- Unlimited corrugated cardboard collection on “the Hill” during August move-in time
- Green Teams, student-to-student outreach in off-campus student residential neighborhoods.
- Neighborhood Community Gardens Compost Project

Many active community organizations and local businesses provide additional waste reduction programs such as Eco-Cycle, ReSource: the used building materials yard, CU Recycling, Extras for Education, Western Disposal and many other privately sponsored recycling programs.

The city contributes funding to Eco-Cycle for their Eco-Cycle Times newspaper, which is a very effective method for educating the community about recycling and waste issues, including material preparation guidelines. It is essential that the materials coming into the Boulder County Recycling Center are clean and uncontaminated. The fact that Boulder’s recyclable materials are consistently among the least contaminated in the industry is a testament to the conscientiousness of our community and the effectiveness of the ongoing community education.

In addition to recycling programs and education, the city has in place some limited waste prevention education. The goal of these programs is to inform residents of waste reduction options available to them in Boulder, including options to reuse materials and encourage “pre-cycling.”

Waste prevention education programs have included seasonal “Eco Elves” holiday waste reduction tips, a “choose to reuse” advertising campaign to promote thrift stores in November and December, and move-out fliers detailing re-use options for CU students distributed in May. The city also sponsors Boulder Valley School District education programs through Eco-Cycle. Children participate in tours of the Boulder County Recycling Center, CHaRM, the ReSource sales yard, as well as Western Disposal’s compost site and the Community Garden’s composting site. In other school education programs, students take a “pre-cycling” shopping trip to a grocery store, participate in “litterless lunch” contests, and try to maximize recycling during locker clean-up time. The city also requires recycling at all special events in Boulder, and encourages “zero waste” events when possible.





New programs initiated in 2005: Laying the groundwork for 50 percent waste diversion

City Council approved funding for waste reduction as part of the 2005 budget process. Programs initiated in 2005 are expected to bring the city's overall recycling rate to approximately 38 percent by the end of the year. If 2005 pilot and research programs are carried out in the following years, current levels of funding are expected to be able to reach the community toward our 50 percent waste diversion goal by the end of 2006, and to 60 percent recycling by the end of 2007.

Single Stream Recycling at the Boulder County Recycling Center (BCRC)

Eco-Cycle and the Boulder County Resource Conservation Division are working together to design a mechanical retrofit to the BCRC to allow the recycling center to accept 'single stream' recyclables, meaning mixed papers, corrugated cardboard and commingled containers could all be delivered to the BCRC in one stream. A new screen at the recycling center would separate the papers from the commingled cans and bottles, and the materials could then be fed through the center's existing processing lines. This retrofit is expected to be in place by January 2007, paving the way for more efficient collection for both residential and commercial recycling customers, as only one cart or dumpster will then be required to collect all of a customer's traditional recyclables. In Boulder, this will translate into higher commercial and multi-family recycling volumes because there are many areas where space constraints are the primary impediment to maximum recycling. Because it is less expensive for haulers to provide single-stream recycling collection, we believe more businesses will likely sign up for recycling, thus increasing the business recycling rate for paper and commingled containers.

Staff estimates that approximately 125 additional businesses and multi-family complexes in Boulder will be able to recycle after the BCRC converts its process. Additionally, businesses that are already recycling will likely be able to increase their diversion due to the collection simplicity. Under the new system, they will be able to put all their recyclable materials in one dumpster, eliminating all the carts and streamlining material handling. Once the BCRC converts its process, staff will track the actual results closely. Although this conversion alone should increase recycling by only 1.4%, it paves the way for the city to coordinate residential yard and food waste collection.

Residential yard and food waste pilot collection

Beginning in April, 2005 and running through November, the city coordinated a pilot collection program where 400 households in two Boulder neighborhoods helped to test a new collection system. Currently, single-family residents use three carts for their trash and recycling. With the pilot program, these same three carts were used to collect trash, recycling, and compostables (yard and food wastes). This is made possible by combining all of the recyclables (commingled containers and mixed paper) together into one cart, exchanging the household's other existing recycling cart for a composting cart, and keeping the third cart for trash collection.

The purpose of this pilot program was to see how much residential food and yard waste is available for composting and how frequently it should be picked up. Staff was also trying to see if a regular, curbside organics collection program can meet a household's needs as well as, or better than, the current annual Spring Clean-up and Fall Leaf Drop-off programs. If this program were to be implemented city-wide for single-family households,

2005 Programs

- Single stream recycling pilot
- Residential yard & food waste collection pilot
- Commercial food waste collection assistance
- Construction & demolition debris collection

the city's goal would be to structure a program that would cost homeowners approximately the same as they pay now for trash and recycling only. It could save the city approximately \$100,000 in the first year of implementation and approximately \$200,000 annually thereafter, by replacing the annual Spring Clean-up and Fall Leaf Drop-off programs. In addition, this type of program could increase the community-wide diversion to approximately 45 percent. This program will be expanded to 2,400 households beginning April, 2006.

Commercial food waste collection programs

Eco-Cycle, BFI, and Western Disposal are all beginning to offer businesses an option of subscribing to separate food waste collection; however, the customer base is currently limited to those businesses that are willing to pay a premium to have their organic materials collected separately for composting. Western Disposal has applied to the State of Colorado Department of Public Health and the Environment for a permit to begin accepting food wastes at its yard waste composting site on 63rd Street. City staff is working closely with all the haulers to design a short-term assistance program that will facilitate more businesses' participation until the economies of scale are sufficient to allow for a self-supporting private sector program. This new food waste subsidy program is expected to divert 6,696 tons annually, or 10 percent of the commercial waste stream. The 6,696 tons is a conservative estimate based on a portion of Boulders commercial establishments' participation.

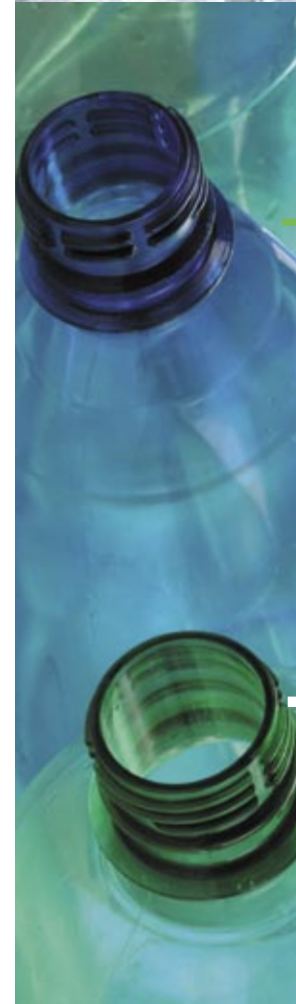
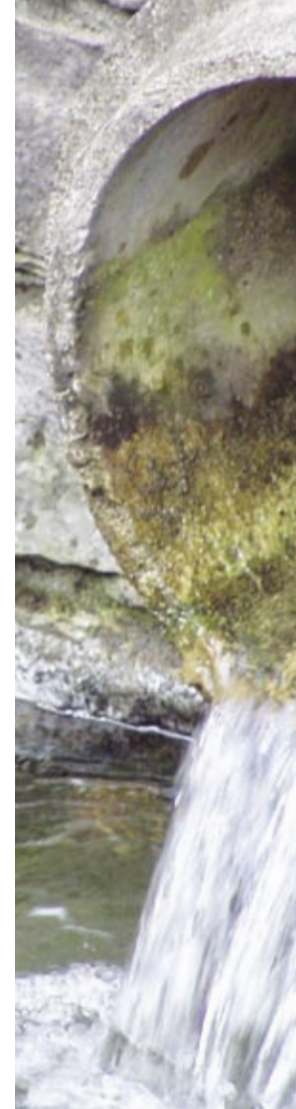
Construction and Demolition (C & D) debris

Staff is continuing to work with the Holiday Neighborhood to recycle construction waste from this model building project. Beginning in 2003, the city began working with the Center for Resource Conservation, Colorado Waste Services hauling company, Eco-Cycle and five prominent developers (Coburn Development, Affordable Housing Alliances, Wolff-Lyon, Wonderland Properties and Peak Properties) to maximize the waste diversion from this 333 unit housing project. Between August 2003 and September 2004, 414 tons of material were diverted. This represents approximately 50 percent of the total waste stream from the project.

The city Trash Tax funds continue to support the Wood Waste Drop-off Center located at Western Disposal's transfer station. This drop-off provides a lower cost alternative to the landfill for contractors and homeowners to recycle dimensional lumber. In 2003, this drop-off center diverted 521 tons of wood waste, and in 2004 the center diverted 587 tons from the city of Boulder. Each year of operation, the drop-off center has become more cost effective with the cost per ton decreasing from \$35 to \$25 per ton.

City staff is working to create more available C & D recycling opportunities for builders and remodelers to conveniently and cost effectively maximize their construction waste recycling. The city has partnered with the Boulder Green Building Guild, a non-profit building industry organization, to provide Green Points workshops and outreach to the building community. Through this partnership, the city has been able to reach many contractors who are now 'building green,' and seeding the market to create a positive environment for regional construction recycling haulers to solicit business in the Boulder market.

Staff is also investigating the logistics required for a one to two year mini-grant program for waste haulers to provide construction recycling services. Another option to seed the private sector's desire to start-up construction waste recycling businesses could also include a short term rebate program for C & D recycling offered to homeowners or builders. In addition, staff is investigating other communities' legislative initiatives such as a demolition bond deposit program (see below, in Action Plan section). The intent of these programs is to make the marketplace conducive for recycling to be cost competitive with waste disposal.





“Recycle Row”

As part of a multi-year capital improvement project, city staff has been working with EcoCycle, Western Disposal, and ReSource to plan and conceptually develop Recycle Row, the one mile section of 63rd Street between Arapahoe and Valmont Roads, as a one-stop-shop where Boulder residents and businesses can access facilities to meet all their waste reduction and recycling needs. This stretch of roadway, one of the few remaining undeveloped industrial areas in the city, is currently the home of the Boulder County Recycling Center as well as ReSource, the used building materials yard. An aerial photograph follows, as Figure 2.

As the population centroid of Boulder County, this section of the city can serve as a gateway to Boulder from the east, providing a human-scale planned development that reflects the values of our community and is welcoming to visitors. Taken together, the planned uses for this one stretch of roadway will house the Center for Hard-to-Recycle Materials

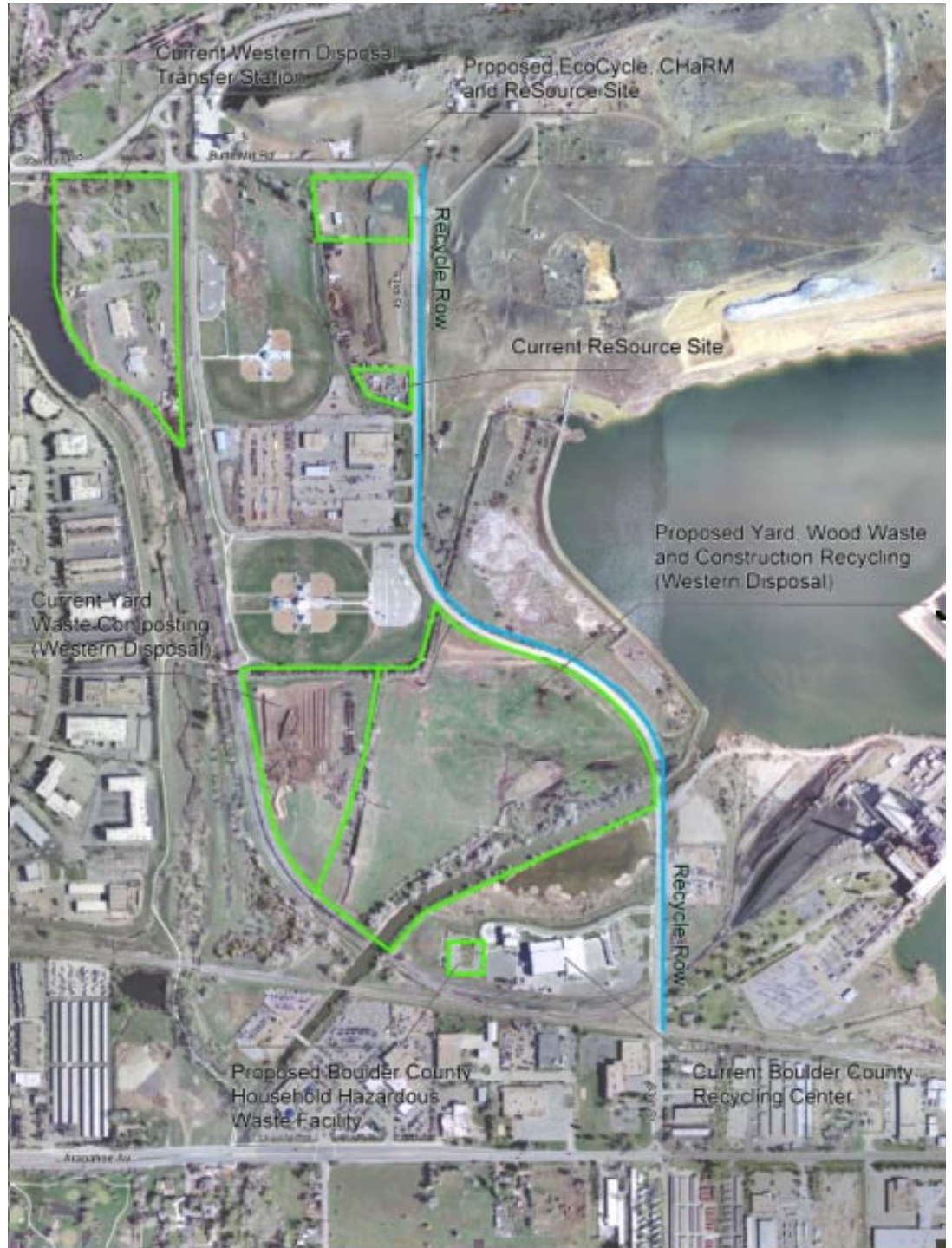


Figure 2

(CHaRM, the computer and consumer electronics recycling facility), ReSource, the used building materials yard, the new household hazardous waste and small business hazardous waste facility, a yard waste drop-off center, a yard and food waste composting center, and the county recycling drop-off center. In addition, the Center for Resource Conservation plans to create a sustainable living resource center to be co-located with ReSource. This would be an education center where visitors could learn about green building techniques, alternative energy and energy conservation options. There is also the potential to develop a construction and wood waste processing center, expansion for Eco-Cycle and ReSource, as well as other smaller-scale re-processors, essentially creating a market development zone for recycling-related businesses.

Creating Recycle Row will put Boulder in a position to maximally expand waste reduction services beyond the traditional recyclables, allow for operations that refurbish and upgrade recyclable materials, and demonstrate sustainability to our community and visitors alike.

NEW PROGRAMS FOR 2006

(all funding included in current Trash Tax revenues)

1. **Expand the current yard/food waste collection pilot program to 2,400 households.** Investigate further the issues surrounding city-wide regular curbside yard and food waste collection. **New diversion potential:** 1.3% of the residential waste stream (.7% of the overall waste stream) **Estimated cost** (one year): \$25,000
2. **Institute reporting requirements for recycling haulers.** Similar to the reporting requirement for trash haulers currently in place. **No new diversion potential** specifically attributable to this activity. **Estimated cost** (annually): \$1,500 in staff time
3. **Conduct a Construction and Demolition Waste Diversion Potential Study.** Staff found that by extrapolating from the number and size of building permits issued for construction by the city in a typical recent year, the amount of available construction debris for recycling from new construction and remodels was significantly less than anticipated. However, these estimates did not include recovered material from demolition projects. The working group concurred that it would be advantageous to conduct case studies of the potential diversion from demolition projects. Staff agreed it would be helpful to cooperate with the Center for Resource Conservation on a study of this sort. **No new diversion potential** specifically attributable to this activity. **Estimated cost** (yr 1): \$10,000 - \$50,000
4. **Work to expand CHaRM.** As part of the Recycle Row project, expand the city of Boulder-Eco-Cycle Center for Hard-to-Recycle Materials to allow for more electronics re-use and future diversion of new hard-to-recycle materials such as textiles, carpet, carpet padding, non-container glass, and Styrofoam®. This entails re-locating Eco-Cycle from the City Municipal Service Center property. Although the new diversion potential is relatively small, the materials are a significantly toxic part of the waste stream. **New diversion potential:** 0.3% of the commercial/industrial waste stream (0.2% of the overall waste stream) **Estimated cost** (total, yrs 1-3): \$400,000 to re-locate Eco-Cycle;
5. **Implement and expand commercial assistance programs.** Building on the “3-months-free” coupon designed to incite new businesses to sign up for recycling service, design an incentive and subsidy program to encourage more aggressive recycling by businesses who are already aware, but not maximizing their waste diversion. Base some technical assistance programs on the PACE model. **New diversion potential:** 8% of the commercial/industrial waste stream (4% of the overall waste stream) **Estimated cost** (annually): \$100,000.
6. **Complementary programs.** These programs provide beneficial support for existing programs, often in the forms of education and outreach or “buy recycled.” Although their merit is undeniable, it is difficult to attribute a precise diversion quantity to these specific programs.





- Continued marketing of the CU Green Teams, student-to-student outreach operated by the CU Environmental Center.
- Enhanced recycling education in K-12 Boulder Valley School District.
- Put recycling requirements in the model lease for rental properties.
- Proclamations, endorsements and awards for recycling challenges in neighborhoods and HOA communities.
- Continue giving good reasons on how recycling positively impacts our community.
- Mini grants for C & D haulers/businesses.
- Create a recycling market development zone (as part of Recycle Row).
- Encourage on-site re-use and/or salvage of C & D waste.
- Encourage recycling collection service sharing where space is a significant constraint, or include commercial collection on residential routes.

NEW PROGRAMS FOR 2007
(all funding included in current Trash Tax revenues)

- 7. Expand the yard/food waste collection pilot program city-wide.** In 2007 implement yard/food waste collection program. If possible replace once-per-year Spring Clean-up and Fall Leaf Drop-off programs with more convenient weekly or bi-weekly yard waste collection from April through November. **New diversion potential:** 14% of the residential waste stream (7% of the overall waste stream) **Estimated cost** (yr 1): \$300,000 **Estimated cost** (subsequent years): \$200,000
- 8. Ban e-scrap (Residential and Commercial/Industrial).** The European Union estimates that 10 lbs. per person per year of electronics end up in the waste stream. Work with manufacturers and retailers to institute legislation that would ban electronics from being disposed of in the trash. Though these represent a small portion of the waste stream by weight, they represent a significantly toxic portion of the waste stream. **New diversion potential:** 1.5% of the overall waste stream **Estimated cost** (yrs 1 & 2): \$10,000 in staff time; \$10,000 in education materials **Estimated cost** (subsequent years): \$5,000 staff time [enforcement]
 - Increase Education about electronic waste toxicity issues.
- 9. Coordinate a multi-family complex volunteer coordinator network.** This will increase recycling in multi-family complexes. Coordinate in conjunction with the haulers and the C.U. Environmental Center’s student Green teams & Eco-Cycle. Implement subsequent to conversion to single-stream recycling. **New diversion potential:** 0.4% of the commercial/industrial waste stream (0.1% of the overall waste stream) **Estimated cost** (annually): \$1,500 in staff time
- 10. Complementary programs.** These programs provide beneficial support for existing programs, although it is difficult to attribute a precise diversion quantity to these programs.
 - Small scale pilot projects to test new programs.
 - Require local compost mix as a soil amendment for new housing projects.
 - Conduct a market development study for construction waste (e.g., gypsum wallboard)

**Action Plan: 70% waste reduction by 2012 –
\$1,532,000 total funding; \$332,000 new funding**

This “Action Plan” represents the next best steps toward reaching the community’s waste reduction goals if additional funding becomes available.

The strategies contained in the Action Plan are presented as a package that together would reach the city to 70 percent waste reduction. It is anticipated that program initiation would be staggered over the period between 2007 and 2012, taking into consideration the cost, political viability, diversion potential and adherence to the Focus Areas waste hierarchy outlined above on page six. The strategies are listed in a general order, based on their adherence to the waste hierarchy as well as the Guiding Principles discussed above, on page five, namely:

- **Identify service voids.**
 - **Create effective partnerships with for-profit and non-profit organizations.**
 - **Support programs that are convenient.**
 - **Utilize economic incentives to alter habitual behavior.**
1. **Complementary programs.** These programs provide beneficial support for other recycling programs, often in the forms of education and outreach or “buy recycled.” Although it is difficult to attribute a precise diversion quantity to these specific programs, their merit is undeniable. To the extent that these programs focus on the higher tiers of the waste hierarchy described on page six (“Reduce” and “Reuse”), they should be implemented as early as possible in the Action Plan time frame.
 - A. Waste exchange (approximately \$25,000: staff time and advertising)
 - B. In-store de-packaging requirements/ point of purchase recycling; focus on shoe stores first (\$10,000: staff time)
 - C. Require recycling plans during construction phase of commercial building process, then validate plans once occupied
 - D. Non- traditional market development assistance (\$6,500: staff time)
 - E. Require businesses to prepare recycling plans (\$16,500: staff time & outreach)
 - F. Require mandatory recycling language in commercial leases (\$6,500: staff time)
 - G. Recycling bins in all public places (approximately \$50,000 for bins)
 - H. Pay for plastic bags at grocery stores
 2. **Conduct a Service Void Analysis study.** Initiate a study to identify areas where recycling services are not available, and also identify current service vulnerabilities, such as sectors where one company provides a service that only caters to a sub-section of the population. **No new diversion potential** specifically attributable to this activity. **Estimated cost** (one-time): \$25,000 - \$50,000
 3. **Construction and demolition recycling bond.** A deposit would be levied prior to issuance of a construction or demolition permit to be fully refunded upon documentation of reuse and/or recycling of waste materials. This should be implemented only after a series of viable end-use markets are available. **New diversion potential:** currently unknown% of the waste stream (see discussion above, New Programs for 2006: 3, page 8) **Estimated cost** (yrs 1 & 2): \$10,000 in staff time; **Estimated cost** (subsequent years): minimal staff time
 4. **Investigate a more aggressive residential “pay-as-you-throw” ordinance.** Investigate increasing the relative costs of the 64- and 96-gallon trash subscriptions, such that a greater incentive will be in place for waste diversion. Implement this only after the yard and food waste collection program is implemented. **New diversion potential:** 8% of the residential waste stream (4% of the overall waste stream) **Estimated cost** (yr 1): \$8,500 in staff time; **Estimated cost** (subsequent years): minimal staff time





5. **Minimum multi-family unit recycling requirement.** Early in 2008, require by ordinance a minimum recycling service level per unit for multi-family units. **New Diversion potential:** 7% of the residential waste stream (3% of the overall waste stream) **Estimated cost** (year 1): \$6,500 in staff time plus \$10,000 in education materials
6. **Institute a fine for disposing of commercial electronics in the Trash.** A ban on some “e-scrap” already exists for commercial and industrial users. Increase education and institute a fine for illegally disposing of cathode ray tubes in the trash. **New diversion potential:** 1% of the commercial waste stream (0.5% of the overall waste stream) **Estimated cost** (year 1): \$6,500 in staff time plus \$10,000 in education materials **Estimated cost** (annually, thereafter): \$5,000 in staff time
7. **Legislate a commercial recycling goal.** Institute a “Rates and Dates” law, where a certain percentage of the commercial waste stream must be recycled by 2012. This encourages private sector haulers to provide increased commercial recycling services. Define recycling to include specific, targeted materials. If goal is not met, in 2012, a commercial source separation ordinance should be instituted (see Vision Plan: 1, below) **New diversion potential:** 10% of the commercial waste stream (5% of the overall waste stream) **Estimated cost** (year 1): \$6,500 in staff time plus \$10,000 in education materials
8. **Increase or rebate the Trash Tax for commercial businesses.** Once the Boulder County Recycling Center converts to single-stream recycling, and ensuring adequate recycling opportunities are made available, increase the Trash Tax, such that businesses have a concrete economic incentive to recycle (ensure there’s no Trash Tax on the yards recycled). Alternately, businesses could also get a specific rebate on their Trash Tax if they proved they were recycling. **New diversion potential:** 5% of the commercial/industrial waste stream (2.5% of the overall waste stream) **Estimated cost** (year 1): \$8,500 in staff time

**Vision Plan: 85% waste reduction by 2017 –
\$1,878,000 total funding; \$678,000 new funding**

This “Vision Plan” represents the future of waste reduction in Boulder, from our current perspective of the early 21st century. It is anticipated that as technology progresses and trends in material use and waste management advance, the Vision Plan will need to be updated to continue to represent an achievable ideal for a sustainable, low-waste community.

The strategies contained in the Vision Plan are presented as a package that together would reach the city to 85 percent waste reduction. It is anticipated that program initiation would be staggered over the period between 2012 and 2017. The strategies are envisioned as longer-term solutions to difficult waste management issues. Some of them are mandatory recycling or “pre-cycling” ordinances, employed as a last resort, only if voluntary programs prove to not be successful. Some of the strategies represent large capital investments, creating infrastructure required to make recycling convenient enough to be economically viable. In this Vision Plan, it is particularly important for the city to adhere to the guiding principles of this Master Plan, following the general investment strategy where the city always gives preference to cooperative ventures with for-profit and non-profit organizations above sole municipal control.

1. **Institute a commercial source-separation ordinance.** If the “rates and dates” ordinance described above (Action Plan: # 6) is not effective. Require that any business that generate substantial amounts of paper and/or cardboard separate this material from the trash. May also include compostable organic materials above a certain quantity. **New diversion potential:** 20% of the commercial/industrial waste stream (11% of the overall waste stream) **Estimated cost** (yr 1): \$10,000 - \$20,000 staff time and outreach materials (range depends on number of materials targeted) **Estimated cost** (annually, thereafter): \$ 5,000 staff time.

2. **Mixed Waste Construction and Demolition (C & D) debris Recycling Center.** Help private sector to capitalize on a mixed waste C & D recycling center for use county-wide. May include business plan feasibility analyses, permitting assistance, low-interest loans, etc. **New diversion potential:** currently unknown% of the waste stream (see discussion above, Short-Term strategy #4) **Estimated cost** (year 1 through year 3): \$10,000 - \$250,000 staff time and financial assistance (range depends on level of sponsorship and/or ownership)

3. **Complementary Programs.**

- Local producer “take back” laws where possible
- Exempting areas from “floor/area ratios” in designing new construction for recycling

IMPLEMENTATION – NEXT STEPS

At the time of drafting this Master Plan for Waste Reduction, city staff embarked on a business and public input process during the second half of 2005. This involved several open houses, a tabletop display explaining the Master Plan with comment solicitation cards which was moved about town, a community-wide survey, a utility bill insert, and a “Recycling 101” short course. Staff also hosted a focus group with businesses representing retail, office buildings, manufacturers, hospital employees, apartment owners, and restaurants. In addition, city staff presented the Master Plan for public and Board comment at two city Environmental Advisory Board meetings and a Boulder County Resource Conservation Advisory Board meeting.

Staff presented the results of this feedback process to City Council at a study session on November 22, 2005 and will present a Master Plan for Waste Reduction to Council for acceptance on April 18, 2006.

With acceptance of this plan, the city will commit itself to the strategies contained in the Current Funding program and to actively lay the groundwork and pursue funding needed to implement the Action Plan.



