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CHARTING A NEW COURSE IN SOLID WASTE MANAGEMENT FOR COLORADO

FINAL REPORT

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Colorado Department of Public Health and Environment

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Common Acronyms Used in This Report Include

<p><i>AI: Appreciative Inquiry</i></p> <p><i>ADFs: Advance Disposal Fees</i></p> <p><i>C&D: Construction and Demolition</i></p> <p><i>C&I: Commercial and Industrial</i></p> <p><i>CS: Curbside Collection</i></p> <p><i>EPP: Environmentally Preferable Procurement</i></p> <p><i>PPAB: Pollution Prevention Advisory Board</i></p> <p><i>HH: Households</i></p> <p><i>HHW: Household Hazardous Waste</i></p> <p><i>GHG: Green house gases</i></p>	<p><i>LF- Landfill</i></p> <p><i>MFU: Multi-family units</i></p> <p><i>MRF: Material Recovery Facility</i></p> <p><i>MSW: Municipal Solid Waste</i></p> <p><i>PAYT: Pay-As-You-Throw</i></p> <p><i>RREO: Recycling Resources Economic Opportunity</i></p> <p><i>SERA: Skumatz Economic Research Associates</i></p> <p><i>SS: Single Stream Recycling</i></p> <p><i>TS- Transfer station</i></p> <p><i>WTE-Waste to Energy</i></p>
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1: THE MEETINGS AND STAKEHOLDERS

A total of four *Charting a New Course* stakeholder meetings were held over six weeks in the summer/fall of 2010. The meetings created a vision of the next steps for waste reduction, recycling, and composting in Colorado. The goals or “outcomes” of the Visioning Project, as set out by the PPAB, were:

1. *A prioritized list of actionable items*
2. *A list of critical areas of consideration, such as industry trends, overarching issues, regulatory changes, or others*
3. *Information on potential solutions to issues*

The meetings were held in four regions of the state to represent the diversity of Colorado. The results of each meeting are presented separately and statewide results are also presented in this report. The SERA team believes strongly that each portion of the state should be equally represented and the meetings from the diverse regions should not ‘feed’ into a Front Range plan. The four meeting locations, the number of attendees at each, and the regions they were designed to cover, are displayed in the table below:

Table 1.1: Meeting Locations and Attendees

Location	Regions	Date	Attendees
Durango	Western and southern mountains and southwest	September 10, 2010	20
Glenwood Springs	Northern and central mountains and western slope	September 14, 2010	33
Pueblo	South and south east	August 24, 2010	33
Thornton	Front Range, north, and north east	October 1, 2010	61

A priority of the project was to gather input from a wide representation of stakeholders in Colorado. The attendees were chosen to embody all facets of resource management including, but not limited to; haulers, landfill operators, recyclers, processors, non-profits, for profits, generators, schools and universities, regulators, elected officials, city and county staff, trade organizations, chambers of commerce, interested citizens and others. Special effort was taken to include attendees that support diversion as well as those that did not. A total of 147 people

representing a wide variety of stakeholders attended the meetings. Figure 1.1 displays the attendee categories graphically^{1 2}.

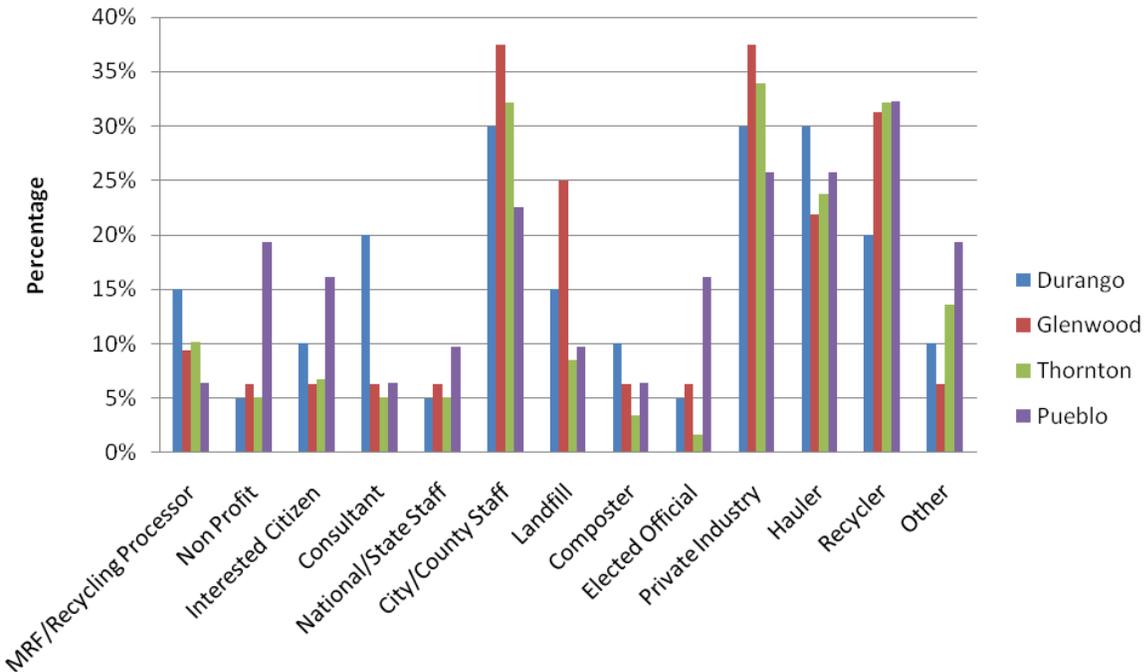


A stakeholder shares his vision for the state

¹ A map displaying the meeting location and attendee representation can be seen in the appendix

² Attendees could fit in more than one category- for example, one attendee could be from a non-profit that operates a MRF and also hauls materials and thus would be in three categories.

Figure 1.1: Meeting Attendees and Categories (Total 147 attendees)



2: CRITICAL AREAS AND ISSUES

The following bullet points cover the critical issues and grant motivations uncovered in the stakeholder meetings. These are items that should lead into the goals of the future RREO grant program, and the grants should support these motivations or work to overcome these issues in a broad sense.

- Environmental impacts:** Stakeholders at all four meetings reported that Colorado’s natural beauty and environment was one of the main motivations for the state to chart a new course in solid waste management. Stakeholders reported the importance of direct environmental impacts such as open/wild space, “green” Colorado, watersheds, recreation areas, hunting/fishing and others. The impact of diversion activities on greenhouse gas emissions was less of a motivator for many of the stakeholders.
- Growing businesses:** Stakeholders were motivated by the potential to grow businesses in diversion, create new jobs, manage materials locally or regionally, develop new ideas/entrepreneurs, and others.
- Regional solutions:** All four regions reported that a



Data collection in Durango

reason the state should chart a new course is to support regional solutions. Each portion of the state felt that solutions that would work in their region might not work in other regions and vice versa.

- **Collaboration and planning:** There is little planning for solid waste, especially on a regional or state level, and regional and statewide collaboration should be supported.
- **Education and outreach:** The need for increased education and outreach was mentioned in all of the meetings by stakeholders.
- **Economic factors:** Diversion is not always an economic winner. A major issue in portions of the state is that recycling costs as much or more than MSW disposal. By charting a new course stakeholders want to make diversion more economically sustainable and competitive with disposal in all portions of the state through local market development, new innovations in hauling/backhauling/cooperatives, or other ideas.
- **Shared responsibility:** Manufacturers need to bear some responsibility for materials management, either through product design or end of life assistance and according to the stakeholders this is a motivator to charting a new course.
- **Regulatory Environment:** Although not a motivation or potential goal of the grants, many of the stakeholders felt that a critical issue that should be addressed was the impact of regulations and permitting issues affecting them. The stakeholders report that regulations should foster growth of diversion, not hinder it, and that overall the permitting process needs to be streamlined.

Statewide Barriers and Gaps

Beyond the overarching issues and motivations listed above, the following barriers and gaps were reported from around the state. Whenever possible, the grant program should be designed to overcome these barriers and gaps. Not all of the barriers and gaps can be alleviated through grant funding. Regional barriers and gaps can be seen in Table A2 in the Appendix. The regional barriers can assist the PPAB in determining how grant money is allocated throughout the various regions of the state.

Table 2.1: Barriers and Gaps (presented in no particular order)

<ul style="list-style-type: none"> • Education/outreach for generators • Education for decision-makers/elected officials • Education curriculum for students in K-12 • Financing for diversion related programs • Regulations from the state do not support the growth of diversion processing- streamlined permitting and regulatory process • There is a need for full scale diversion campus(s) in the mountain and rural regions for drop-off (public) and haulers • Lack of regional facilities for rural communities to bring materials for and open to all • Viable end markets and uses for locally composted materials • Local end-users and manufacturers for commodities • There is not a unified plan or strategy for solid waste in the region or state 	<ul style="list-style-type: none"> • A way for governments, cities, businesses and others to share resources and information regionally and across the state • Access to markets • Economical transportation of commodities to markets • Regionalized and localized cooperation between and among government and private industry • Efforts to address manufacturers including packaging design, information on what can be recycled, producer responsibility, and advance disposal fees or others • Statewide legislation that supports recycling and diversion (measurement, data collection, PAYT, incentives, tax breaks, etc.)
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In addition to the items listed above, the grants should support the following unified goals in the state, as reported by the stakeholders:

- *Increased collaboration between all stakeholders including government and private industry*
- *Education and outreach on recycling and diversion*
- *Programs for all sectors, not just residential*
- *Support for all diversion, not just recycling*
- *Composting and organics programs and processing*
- *Increased access to diversion through curbside or drop-off programs*
- *Some level of involvement, stewardship, and shared responsibility from manufacturers*
- *Job gains locally and regionally*
- *Economically sustainable diversion programs*
- *Localized or regionalized processing and markets for recyclables whenever possible*
- *Pay-as-you-throw*
- *Fee structures that encourage diversion*
- *A healthy environment for wildlife, recreation, and future generations*
- *Streamlined regulations for processors.*

3: ACTIONABLE ITEMS

The items and elements listed in this section are the programs, incentives, infrastructure needs, market development and other ideas that the stakeholders reported will work best in their region. The actionable items were developed through a *fully collaborative process*- these are items that gained the highest level of support from the diverse group of stakeholders and leverage current success.

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The elements and actionable items listed in this section have the greatest potential to move each region, and the state, closer to the vision of the future designed in the workshops. The design elements are the actions that should be supported by the CDPHE, the state, and the collective stakeholders. Instead of guessing which ideas might work, the design elements were planned by looking at what is already working and leveraging existing elements and actors to get the greatest level of success in the region³. The six topics that the stakeholder meetings focused on were:

- Infrastructure and Transportation
- Education
- Programs, services, and incentives
- Market development
- Funding (including grants)
- Legislation⁴

³ The meetings used Appreciate Inquiry to uncover the actionable items. AI takes a systematic approach to the meeting design in which: 1) Attendees are directed to uncover the most successful elements of the current system 2) Identify a 'shared vision' of the future, and 3) Develop ways to build on current success to get from where we are now to the shared vision of the future. AI has been proven to be a successful group change technique practiced throughout the world, and the meeting facilitator, Amanda Trosten-Bloom, is one of the premier national experts of AI.

⁴ Although legislation may not always be directly supported through grants, the planning team felt it would be useful to collect this data.

Combined Grant Support Elements

Table 3.1 includes the options with highest votes from the in-person voting as well as the options receiving highest votes from the electronic voting⁵. Combined, the meeting stakeholders developed over 400 potential elements. Table 3.1 was edited to contain *only* the consolidated list of items or elements that could be supported through the existing RREO and other existing grant programs in the state. A more expansive list can be seen in Tables 3.2 through 3.7. In addition, a full listing of the ideas with the highest level of opposition can be seen in the appendix.

Table 3.1: Consolidated Grant Support Items (from in-Person and E-Voting)⁶

Infrastructure & Transportation	<ul style="list-style-type: none"> • Support landfills becoming a material management location including such aspects as composting, recycling facilities, hard to recycle materials, solar and wind power, gas collection and use, etc. (top in Glenwood, second in Thornton) • Establish logistics network to consolidate loads from rural areas to the front range (top in Pueblo, second in Glenwood) • MRF – recycling, processing, sorting and shipping to/from regionalized areas – open to all, build on public private partnerships (second in Durango) • Public private partnerships to establish back-hauling (tied for top in Pueblo) • Establish/develop/support a hauler network for rural areas, material consolidation, efficient transportation to markets, etc. (tied for top in Pueblo) • Mountains and rural areas have transfer stations with multiple material streams (ex. recyclables, compostables, e-waste, C&D) that go to front range facilities (top in Thornton) • Processing equipment for hard to recycle materials (tied for top in Pueblo)
Programs / Incentives	<ul style="list-style-type: none"> • Centralized drop-off centers that accept all types of divertible material – staffed if possible (top in Pueblo, Glenwood) • Grants supporting residential organics and food waste composting programs (carts, collection, processing, etc.)(second in Thornton) • Recycle network or regional/state co-op for commodity consolidation, selling, marketing, pricing (top in Durango) • Embed the cost of recycling in trash collection (top in Glenwood, Thornton) • Incentives for local use of processed compost materials – particularly on farms (top in Pueblo) • Customer fees / rates (either commercial or residential) that encourage recycling and diversion (beyond only PAYT – could be rebates, coupons, punch cards, others) (top in Glenwood) • Pilot/study/understand impacts of locally-based incentives to encourage green businesses (i.e. reduced permit fees, taxes) (top in Pueblo) • Drop-off for yard waste and/or food waste (top in Glenwood) • Deconstruction mandate – during demolition materials must go to re-use sites (top in Thornton)
Market Development	<ul style="list-style-type: none"> • Work together on a regional level to encourage markets (top in Pueblo, second in Glenwood and Thornton) • Develop/identify/study market for crushed glass and its uses (top in Durango and Thornton) • Regionalization across state borders, not just Colorado (top in Durango, Thornton) • Government (local / state) cooperation and acceptance of products from recycled materials (asphalt shingles, glassphalt, others) (Grants could be used to do demonstration/pilot project to help set

⁵ The in-person voting was completed during the stakeholder meetings, the e-voting was conducted through an on-line survey instrument upon the completion of the meetings. The e-voting allowed all attendees to vote on ideas that may not have arisen as possibilities in their particular Visioning meeting (it allowed votes on the total inventory of strategies developed across all the meetings).

⁶ It is important that the PPAB *not* limit grants to only the ideas listed in these tables. The elements and ideas listed here are those that garnered the largest level of support during the meetings, this does not mean that there are not other viable options to advance solid waste management in the state that are not listed in this report.

	<ul style="list-style-type: none"> standards) (top in Glenwood) Inform businesses and marketplace of materials / recycled commodities that are available and where(top in Durango) Uncover ways to encourage businesses to use local supply of diverted commodities or manufacture recycled products – pilot or demonstration projects to determine impacts of programs (i.e. less taxes, more subsidies)(top in Pueblo, Durango, Glenwood)
Education	<ul style="list-style-type: none"> Clear, consistent messaging for what can be recycled locally, regionally (top in Glenwood, second in Pueblo, Durango) Emphasize that recycling is a service in education pieces and that it costs money to provide the service (top in Glenwood, third in Pueblo) Inform public about existing facilities and infrastructure so they can use them more (top in Durango) K-12 schools program / curriculum (top in Thornton) Educate government / elected officials (local and state level)(top in Durango) Community wide events promoting recycling (top in Pueblo)
Grants	<ul style="list-style-type: none"> Grants preference / funding for infrastructure (top 3 in all regions) Grants for school education programs on recycling and pilot schools programs (top 3 in all regions except Thornton) Encourage grant awards regionally to address needs of local communities (Durango, Glenwood)
Legislation	<ul style="list-style-type: none"> Expanded grants program, focusing on infrastructure, market development, new technologies (top in Pueblo, Glenwood, Thornton) Provide incentives for inter / intra governmental coordination (regional planning) on a local and regional level (top in Glenwood, second in Pueblo) Statewide PAYT with embedded recycling, potentially for larger communities first (top in Glenwood, second in Durango) Product stewardship / producer responsibility legislation to reduce packaging (top in Glenwood) Streamline and clarify regulatory processes and permitting, efficient / timely approval, reduce obstacles (top in Durango) (Grant could support a demonstration/pilot project that could help set guidelines or potentially other options) More funding, authority, or grants for building local MRFs (tied for top in Pueblo) More funding, authority, or grants in rural communities (top in Durango) E-waste disposal ban (tied for top in Thornton) Local or state bottle bill, ADFs, or others (tied for top in Pueblo)
Funding	<ul style="list-style-type: none"> Manufacturers pay for programs or takes material back for recycling (top in Glenwood and Thornton) Pay as you throw (PAYT) (top in Durango) Pooling resources (financial, capital) among jurisdictions (top in Glenwood) Discounts for using recycled materials in construction projects (funded by higher fees for those not using recycled) (top in Pueblo) C&D deposit program that is rebated if recycling target met – local (top in Thornton)

The elements in Tables 3.2 through 3.7 are those that rose to the top through the Visioning meetings. The tables below allow the PPAB to see the top ideas (including grant ideas and ideas beyond the scope of the RREO grant program) for each region as developed by the stakeholders.

How to use the tables: The actionable item tables are designed to allow the PPAB to identify the elements that the regional stakeholders reported should be supported. Each row displays one element and the four columns on the right side show which meeting/region(s) showed support for the element. Many of the elements rose to the top of the voting in more than one region. During grant evaluation, the PPAB can use these tables to see if the submittal supports, either directly or indirectly, one or more of the elements listed below, and whether the regional attendees identified the element as a priority in that region. The final column, suitability, shows the consultant's judgment on the potential of the RREO grant program to support the element (H=High, M=Medium, L=Low) Some elements may not be supported through grant awards.

Table 3.2: Actionable Items - Infrastructure and Transportation (H=High, M=Medium, L=Low)

	Durango	Glenwood	Pueblo	Thornton	Suitability
Infrastructure/Transportation					
Hub and spoke system-Build/support regional facilities- include all commodities, not just some	X	X	X		H
Establish back-hauling networks (potentially with large retailers, incentive based, CDOT, or others)	X	X			H
Regional MRFs (especially in low population density areas) (potentially looking at other states too)		X	X		H
Establish logistics network to consolidate loads from rural areas to the front range or other market area	X	X	X		H
Either mandate a contract with hauler or pay at disposal location(transfer station/landfill) to pay for recycling facility and transportation	X				L
Create transportation networks to prioritize the collection of commodities		X			H
Regional facility for processing tires		X			H
Tax credit for private commodity haulers		X			L
Regionalize collection infrastructure- share resources and information		X			M
Homes retrofitted with heavy duty food waste disposals use sewage lines to transport organics to WWTP for composting		X			H
Support and develop local end users to minimize transportation needs			X		M
Remove legislative barriers to transportation			X		L
Planning studies to determine optimal regional locations for Hubs in Hub and Spoke system			X		H
Increased use of railways			X		L
Review and remove regulatory hurdles for local small businesses to develop processing infrastructure locally			X		L
Landfills become a material management location including composting, MRFS solar and wind power, gas collection and use, etc.				X	H
Support for processing equipment for hard to recycle materials				X	H
In front range, there should be 6 facilities within 50 miles of each other including and major population. The facilities should be: MRF, Compost facility, Center for Hard to Recycle Materials (CHaRM), Construction and demolition, Reuse area, Biodeisel				X	H
Mountains and rural have transfer stations collecting 6 streams that go to front range facilities- (MRF, Biodiesel, CHaRM, C&D, Reuse, Compost)				X	H
Anaerobic digesters with gas collection				X	H
Dedicated public landfill for Construction and Demolition waste, especially recycled asphalt				X	H
In-state paper mills				X	L

Table 3.3: Actionable Items - Education

	Durango	Glenwood	Pueblo	Thornton	Suitability
Education					
K-12 schools program/curriculum- also consider college curriculum/extended education	X	X	X	X	H
Educate government/elected officials- gather the info collected at these visioning meetings and regional differences and bring to state capital- share with legislators	X				L
Develop solid waste/recycling lab with colleges	X				H

	Durango	Glenwood	Pueblo	Thornton	Suitability
Education					
Public schools recycling programs (for Ex.- drop-off bins to classrooms, talk with student council, get the students running programs and creating materials)	X				H
Resource manual for teachers	X				H
Emphasize that recycling is a service in education pieces and that it costs money to provide the service		X			H
Businesses promote recycling opportunities when available		X			H
Community wide events promoting recycling			X		H
Inform public about existing facilities and infrastructure so they can use it more			X		H
PAYT education			X		H
HHW education			X		H
Education on job creation impacts from recycling			X		H
Increased funding toward educational programs and grassroots groups				X	H
Clear consistent messaging for what can be recycled locally				X	H
All stakeholders work together to agree on a consistent message				X	M
Bilingual programs				X	H
Message effectiveness is measured and then the effective ones are repeated				X	H

Table 3.4: Actionable Items - Programs, Services and Incentives

	Durango	Glenwood	Pueblo	Thornton	Suitability
Programs/services/incentives					
Pay-as-you-throw- potential options include statewide, city or county based, and/or in rural areas	X	X	X	X	H
Incentive (grants) for local use of processed materials including: compost materials (particularly on farms), local green businesses, manufacturers using recycled feedstocks, etc	X		X	X	L
Drop-off centers- public/private partnerships, staffed when possible- look at all materials, not just conventional recyclables	X			X	H
Remove state/national/local incentives on petro-based fertilizers and instead support local organic compost		X		X	L
Tax breaks for 'green' businesses- both locally and state level			X	X	L
Increase landfill tip fees/surcharges on MSW to discourage landfill disposal and encourage diversion		X		X	L
Burn ban and illegal dumping enforcement	X				M
Drop-off for yard waste and/or food waste	X				H
Embed the costs of recycling in trash collection	X				H
Single stream recycling	X				H
Recycling/composting rebates	X				M
Focus on re-use programs- particularly in the commercial and industrial sectors		X			H
Commercial food waste composting programs in mountain communities- user pay program		X			H
C&D deposit with mandated diversion of materials		X			H
Discounts on compost end product for HHs and Businesses that are composting		X			L
Eliminate licensing fee/taxes, etc. for resource recovery programs. Increase the same to landfills to make up for shortfalls		X			L

	Durango	Glenwood	Pueblo	Thornton	Suitability
Programs/services/incentives					
Financial incentives for families that are recycling- coupons, rebates on bills, PAYT, or others, especially in rural and low income areas			X		M
Communication and transparency between regions and municipalities			X		H
Plastic bag tax			X		M
Deconstruction mandate- during demolition materials must go to re-use sites when available				X	H
Drop and swap stores for paints and reusable's and durable goods				X	H
City sponsored hard to recycle events				X	H

Table 3.5: Actionable Items - Market Development

	Durango	Glenwood	Pueblo	Thornton	Suitability
Market Development					
Incentives to use local recycled/diverted supply- i.e. less taxes, more subsidies	X		X	X	L
Require recycled material use if specification standards are otherwise met		X		X	M
Form an economic development group locally, regionally, and state wide		X	X		H
Promote/support market for crushed glass and its uses	X				L
Enterprise zone or tax credits to lure green businesses	X				L
Information transfer for 'green' businesses- workshops, marketing info, branding	X				H
Tax incentives for businesses that use or manufacture recycled products		X			L
Environmentally Preferable Procurement for recycled materials/compost (local, regional, state)		X			H
Government (local/state) cooperation and acceptance of products from recycled materials (roofs to roads, glassphalt)		X			H
Specify regional source of recycled materials used in recycled products		X			M
Regionalization across state borders			X		M
Ease in permitting process locally to help promote business growth			X		L
Marketing to increase local compost use in rural area and cities				X	H
Multiple clearinghouses for end-use ideas with ties to practical application				X	H
Support crumb rubber use in asphalt				X	H

The following two tables, funding and legislation, contain items that may be difficult to support through the grant program. However, some items (such as PAYT under the heading of Funding or product stewardship under the Legislation heading) are items that may be supported through grants.

Table 3.6: Actionable Items - Funding

	Durango	Glenwood	Pueblo	Thornton	Suitability
Funding					
Pay-as-you-throw	X	X	X	X	H
Mil Levy (Local Environmental fee/tax)		X	X	X	L
Tax on toxics to fund other programs	X		X		L

	Durango	Glenwood	Pueblo	Thornton	Suitability
Funding					
Changes to current solid waste user fee at landfill to help pay for recycling/composting and increase costs of MSW disposal- consider revolving loan fund, finding another source for CERCLA	X			X	L
Advanced disposal fees on certain products		X		X	M
Tax/permit fee breaks, tax credits, or others for recyclers, businesses that use recycled products, 'green' businesses, etc.			X	X	L
Discounted surcharge on tip fees for communities recycling or meeting goals	X				M
Micro-loan program for small business development	X			X	H
Pre-paid recycling punch card	X				H
Backhauling non-profits or others	X				H
Special tax districts to help pay for recycling	X				L
Pooling resources (financial, capital) among jurisdictions		X			M
Construction and Demolition Deposit with mandated percentage diverted		X			H
Encourage grant awards on a regional basis (higher scores for regional collaboration) to address needs of local communities in the region		X			H
Bottle bills		X			L
Grants to help make recycled end-products more affordable		X			M
Discounts for using recycling in construction projects (funded by higher fees for those not using recycled materials)		X			M
Sales tax surcharge at the state-level or local level		X			L
Grants that focus on infrastructure and market development		X			H
ADFs- Disposal or end of life costs are incorporated in process/user fees			X		M
Grant funds better advertised to all eligible stakeholders			X		H
User fee on mixed waste on service bills and no tax on source separated discards for local program funding				X	L
End-user fee for disposal put in cost up-front to fund local recycling projects				X	L
C&D deposit program that is rebated if recycling target met – local				X	H

Table 3.7: Actionable Items - Legislation

	Durango	Glenwood	Pueblo	Thornton	Suitability
Legislation					
Product stewardship/producer responsibility	X	X		X	M
Allow for regional differences in regulations and laws- localized regs and legislation	X		X		L
Statewide diversion goals		X		X	L
PAYT		X		X	H
Efficient and timely permitting	X				L
Regulatory thresholds for facilities based on volumes of materials accepted at the facility	X				L
Reconsider composting classifications and thresholds in permitting	X				L
Incentives for inter/intra governmental coordination on a local and regional level		X			H
Bottle bill		X		x	L
Funding for building local MRFs			X		H
Statewide ballot initiative focusing on diversion created through a collaborative stakeholder process			X		L
Get local government buy-in for legislation/ordinances			X		M

	Durango	Glenwood	Pueblo	Thornton	Suitability
Legislation					
Educate legislators			X		M
Bottle bill				X	L
Require commercial businesses to choose from a menu of recyclables				X	H
Keep all surcharges and fees off limits to balance state budgets				X	L
Requirements for recyclable material content in manufacturing				X	M

Keys to Successful Programs

Finally, by knowing the characteristics of currently-successful programs, the RREO grants, and other projects in each region, can to build on these core success factors to increase long-term project viability in the future. The following table highlights the combined factors for success in each region. These are the elements that the PPAB can use to rate a grant application's chances to succeed.

Table 3.8: Why Programs Are Working Now – Elements to Look for in Grant Submittals

Durango	
<ul style="list-style-type: none"> • Convenience/accessibility- whether through curbside/ rotating drop-offs/ multiple regional sites/hub and spoke, etc. • Appropriate infrastructure, making the best use of existing infrastructure, and limiting redundancy • Creates new business activity- filling a niche, competition drives efficiency • Green enterprises from value added services- building on existing and successful services to provide more value for customers • Pay-as-you-throw • Planning for long term sustainability/viability 	<ul style="list-style-type: none"> • Evolution of services over time- grow businesses/commodities/services by getting one established and then adding more • Diversifying businesses- more commodities/services to limit risk • Staffed drop-offs • City/County/State support, buy-in, and funding • Collaboration between all groups and players with open communication and relevant stakeholders • Public private partnerships • Education at all levels- Schools, generators, staff, elected officials, decision-makers
Glenwood Springs	
<ul style="list-style-type: none"> • Getting public buy-in through grassroots organizations and background education • Governmental support at the local, regional, and state level- including financial, educational, and on the end-market side thru EPP • Save money for generator • Creates revenue opportunities for processor • Program is not dependent on world markets- work with local markets or markets that are more secure • Programs that create jobs • Increased public awareness of options, end results, costs, etc. • Efforts to gather higher levels of participation among generators 	<ul style="list-style-type: none"> • Customer service and value added services • Effective project management • Programs that match community values, desires, and needs, not ones that are forced • Programs that have political support locally • Access to commodity markets • Targeting money making commodities first • Sharing program costs- the programs that make money help pay for those that operate in the red • Efficient logistics in transportation • Buy-in from participants and program managers • Regionally specific solutions • Collection has to meet end-market demands for product quality and volume

Pueblo	
<ul style="list-style-type: none"> • Having a champion • Setting clear goals • Availability of outside resources • Open communication • Creative financing • Data collection/pilot programs • Compromise in collaboration • Collaborative success • Grass roots support • Mandates • Recruiting volunteers 	<ul style="list-style-type: none"> • “Free” service to community • Diversity of stakeholders • Social education • Changing the community mind-set • Incentives • Education and training for staff • Education/outreach for elected officials • Multiple entities coming together to support a common goal • Defining available resources • Using available resources • Participant buy-in
Thornton	
<ul style="list-style-type: none"> •Community involvement •Government involvement •Education at all levels- Schools, generators, staff, elected officials, decision-makers •Standardized programs- what can be recycled, how, etc. •Having a champion for the program •Shared responsibility for program success/partnerships •Mandates, ordinances, and laws •Having funding available •Increased convenience for businesses and residents •Services and programs meet a public demand for a service •Programs that reduce or avoid GHG emissions •Cost reductions in programs, running programs more efficiently, using technology (high or low) to make a program work best •More consumer demand for recycled materials or re-used materials •Incentives- PAYT residential, tax or others commercial 	<ul style="list-style-type: none"> •Compliance and enforcement •Collaboration between all groups and players with open communication and relevant stakeholders •Social marketing for education •A program that is feasible for all parties involved, financially and technically •Affordability for rate payers/generators and service providers •There is a demand for recycling programs from the public •High levels of participation •Innovation- non-traditional waste management technologies •Support of elected officials •Grassroots support •Coalition building among disparate groups •Taking risks- but doing your homework before you take the risks •Following economic drivers •Heightened awareness among the public about waste, recycling, costs, ghg •Customized and adaptable programs

APPENDIX

Recommendations on Additional Potential Solutions

The following set of recommendations and action items was developed, based on the design elements drafted and selected during the meetings as well as the electronic voting follow-up to the meeting.⁷



Thornton Stakeholders

Grants: Grants should target infrastructure, schools programs, market development, and new technologies, and include regional awards addressing local-suited needs. The State should avoid grants providing discounts on purchase of recycled content goods or for bins. Two regions felt training on the application process wasn't needed. Overall, work to increase the grant amounts by increasing the tip fee surcharge⁸

Actions →

- CDPHE PPABAC assigns extra points to grant applications addressing: infrastructure, schools programs, market development, and new technologies.⁹ CDPHE PPABAC perhaps incorporates a two-part set-aside: 2/3 based on Front Range / non-Front Range allocations (potentially 60/40 respectively within that 2/3 set-aside), and one-third awarded to leading or innovative projects, regardless of location.
- Examine specific elements with highest votes / support statewide and regionally to help guide the awarding of grants within these categories and regions (e.g. composting infrastructure gaps in some regions, establishing backhauling cooperatives in other regions, regionalized facilities with local-appropriate technologies, etc.).
- PPABAC explores the role that CDPHE and PPABAC may take in the discussions of the next round of surcharge negotiations / stakeholder meetings (to discuss the two elements of recommendations, including increasing the fee¹⁰, and developing a two-tiered fee), and the potential for expanding grant funds (lottery funds, etc.). Otherwise identify groups that may be appropriate for bringing these issues forward.

Additional Action Comments / Recommendations Based on Themes and Broader Research →

- CDPHE PPABAC awards extra points for projects that: 1) partner (public / private); 2) involve regional collaboration; 3) show economic efficiency (cost per ton diverted or other type metric); 4) address more than one stream. Other expressions of buy-in from local

⁷ The action items draw from both the elements preceding, but also cross categories in some cases. The action items are those that CDPHE can take directly.

⁸ The majority of stakeholders supported this action but there was opposition from many of the landfill representatives to higher surcharges

⁹ PAYT was also mentioned in several sections.

¹⁰ Note the split vote on this issue of raising the fee that arises in the section on programs / incentives.

jurisdictions (perhaps beyond letters, if already required) would help address the repeated suggestion that “buy-in” was a component of successful programs.

- *If it is allowed legally, PPABAC may need to do outreach to engage specific stakeholders who are in a good position to help provide some of these solutions to encourage them to apply for grants. A portion of the meeting stakeholders had never even heard of the RREO grants.*

Legislation: PPAB should provide incentives for inter / intra governmental cooperation (for example, for in regional planning). Consider legislation requiring statewide Pay as you Throw (PAYT) with embedded recycling for larger communities, but recognize that communities in the Pueblo area are not in favor of this strategy. There is support for more funding, authority, and grants in rural areas (Durango). The Durango region in particular is also particularly interested in quicker and streamlined permitting / regulation / approval processes, with local and site flexibility, and attention to the composting and recycling facilities. For example, there are perceived regulatory barriers / hurdles on the (private) development of processing facilities (noted by Pueblo and Durango).¹¹ Easing the permitting process to encourage business growth was also mentioned.¹² There is some regional support for an electronic scrap (e-waste) ban, but negative reactions to other bans (yard waste). The regions are split (voting results that were both highly positive and highly negative) on product stewardship / producer responsibility legislation to reduce packaging, ADF, and bottle bills. Avoid mandated recycling of materials for either residents or businesses. There is some regional support for a two-tiered statewide diversion goal (lower goal in rural areas) (from Glenwood and Durango), but opposition to measurement and reporting at landfills (from Glenwood).

Actions →

- *CDPHE works with representatives from the Pueblo, Durango, and Glenwood areas (perhaps through survey, interviews, meetings, evaluation studies or other methods) to identify the particularly troublesome regulatory processes. Compare time and success of permitting needed facilities across regions and identify contributing issues for any important disparities,*
- *PPABAC should provide the results of the study to the leading environmental agencies in the State, who may wish to pick up the ball on moving forward some of the legislative suggestions (particularly legislation, but also programs, funding, market development, etc.) embedded in this report.*
- *Prepare / provide a short lunch-and-learn / workshop and 2-page fact sheet highlighting the main findings from the report to legislators.¹³*
- *CDPHE PPAB considers allowing grants for regional solid waste management plans if multiple jurisdictions participate. Alternatively, CDPHE provides examples of or presentations on the Wyoming legislation (as one consistent example) to environmental groups who examine the potential of this and other legislation implied / suggested by the Visioning meetings.*

Additional Action Comments / Recommendations Based on Themes and Broader Research →

- *There is some action on local, regional, state ADFs, producer responsibility options and take-back being conducted in the Boulder area and at the State level through CAFR’s*

¹¹ Listed under infrastructure voting.

¹² In association with Market Development, as well.

¹³ Explore *whether CML or other organizations can help provide a conduit / partner for this education / outreach (they do help provide education on studies on tax financing and other elements of interest at the local and broader level).*

product stewardship council. CDPHE should monitor progress to identify options that may work elsewhere in the state or may make sense at the state level.

Funding: Pay as you throw (PAYT user fee program) was recommended / recognized as a strong method of funding local recycling and programs. Others recommended augmenting recycling funding from lottery proceeds (and for the grant program, higher tip fee surcharges were supported, as mentioned above). To fund recycling, there was support for manufacturer pay or take back for recyclables. Efficiencies through pooling of resources (financial and capital) among jurisdictions were also suggested as a funding aid. Construction and demolition programs can be self-funding through a deposit-type program. One region is interested in tax credits, rebates, or permit discounts for businesses using recycled materials. Do not implement additional surcharges at recycling or diversion facilities to increase funds.

Actions →

- *CDPHE provides links and outreach on (existing and possibly new) PAYT resources for communities within the State, and collects / disseminates case studies and other information on successful examples in Colorado. Workshops or webinars (again, new or leveraging existing efforts) may be a valued resource. The attendees may provide a way to reach out to the relevant decision-makers for strong participation.*

Additional Action Comments / Recommendations Based on Themes and Broader Research →

- *There was interest in ADFs and extended producer responsibility(EPR)/ manufacturer take-back as local or state considerations. Case studies and / or feasible and proven local EPR and ADF approaches would likely be valuable to some of the attendees (and thus, for several communities statewide). It might be worth adding an ADF / responsibility segment to the workshops / webinars discussed above or to web resources and links that illustrate feasible local (and potentially, state) options.*
- *The surcharge issues are addressed under legislation, but are also relevant here.*

Infrastructure and Transportation: The regulatory process around private development of processing facilities is seen as a barrier (in Durango and Pueblo). Regional cooperation and regionalization was identified as a strategy for leveraging facility access, including regional MRF development with shipments to regionalized areas; transportation-based and transfer station-based consolidation strategies for aggregating rural loads for delivery to the Front Range; avoid over-investment in equipment to make sure the resources meet the needs, and expansion of landfill sites beyond disposal (adding recycling, gas collection and other components). The use of donated / discounted backhaul space was proposed as a strategy for rural areas, as was a hauler network. There was some regional support for hard to recycle processing facilities (Pueblo area). Construction and demolition facilities and natural gas refueling stations were not supported.

Actions →

- *CDPHE / PPABAC uses grant process to help address infrastructure needs specific to the various regions / areas as prioritized by the stakeholder visioning meetings to meet local/regional needs efficiently and avoiding over-investment.*

- CDPHE reassesses its permitting processes (in particular for composting), to improve speed, flexibility / responsiveness, consistency, and throughput to support more local infrastructure.
- CDPHE can explore the possibility of setting up a clearinghouse, cooperative, or otherwise facilitate options for local facilities / jurisdictions for massing commodities, backhauling options, etc.
- CDPHE hosts stakeholder meetings on regional cooperation and transportation challenges / solutions, especially in rural and mountainous areas.

Additional Action Comments / Recommendations Based on Themes and Broader Research →

- CDPHE has amassed information on the types and locations of existing processing and other infrastructure around the state to create a ‘wasteshed’ map. CDPHE might consider preparing interactive maps and other tools that would assist stakeholders in identifying suitable facilities, and develop cooperative backhauling and other arrangements that might improve the feasibility and effectiveness of solid waste management alternatives. This will also help in the development of hub and spoke rural systems, potentially applying for ARRA funding similar to the “Balers and Trailers” rural grant program in New Mexico.

Program / Incentives: There was support for residential organics and food waste programs, and for embedding the cost of recycling in the trash bill, with especially strong support in the Front Range. In the less urban areas (Glenwood, Pueblo areas) centralized drop-off centers collecting a wide range of materials had particular support (including yard and potentially food waste). Leveraging the regional suggestions for infrastructure, there was also strong support for a recycling network or state cooperative for marketing / selling recycled commodities. Incentive-based fees / rates of several kinds to encourage diversion behaviors were supported. Incentives for local use of compost material (especially on farms, and especially from Pueblo discussions) , PAYT and other residential incentives, and incentives to business to encourage use of diverted materials or manufacture recycled products were recommended. There was a split vote – support and opposition – to increases in landfill tipping fees to discourage disposal and reduce the relative cost of recycling. Other suggestions included local incentives for green businesses. Respondents opposed a burn ban and additional illegal dumping enforcement, and were split in their opinions on deconstruction mandates.

Actions →

- CDPHE should support preparation of a case studies report or other document/website tools to share programs, data, and information, on successful programs throughout Colorado. This tool acts as a technology transfer to let communities build on successful programs in the state.
- Statewide BMPs to leverage successful practices.
- CDPHE PPABAC works through the grants process to support priority programs and incentives that are well-matched to the region (and its local needs, gaps, and potential, and available resources).

Additional Action Comments / Recommendations Based on Themes and Broader Research →

- CDPHE should leverage the success stories from this project. CDPHE should consider sponsoring a workshop or series of workshops or webinars developed from this study to

help educate solid waste managers around the state on programs that are successful in various regions of the State that may work or adapt well to other regions of the State.

- *Similarly, educating legislators will help forward the goals of the study and help let legislators know what has been possible, and what may be possible in the future.*

Market Development: Regional cooperation to encourage markets, and working across borders, had strong support. In addition, identifying options for glass markets was also supported. Another key strategy in market development was governmental cooperation and acceptance of products using recycled content materials (roof to roads, glassphalt, etc.), and providing information / education to businesses and the marketplace about available products that use recycled content. Incentives (taxes / subsidies, etc.) to business to encourage use of diverted materials or manufacture recycled products were also supported. There was opposition to landfill bans (as a market development strategy) and to regulations encouraging commercial / industrial re-use.

Actions →

- *CDPHE PPABAC can add points or preference for grants in the areas of market development uncovered in the visioning workshops (and presented in the prioritized list in this report).*
- *CDPHE may host regional workshops, foster the growth of regional economic development councils, or develop a web or other clearinghouse to share information on commodities, collected, available, and potentially available for end-users.*
- *CDPHE may prepare informational materials or case studies on taxes or incentive examples that have been used in other locations to develop markets, unless there are more direct methods that are legal under Colorado law. The CDPHE / PPAB might consider funding a pilot test of incentives that might provide feedback on the potential from these types of incentives.¹⁴*
- *Develop model language, support R&D (through grants or direct assistance), help write EPP, and other actions to encourage the use of recycled commodities in road base, construction, manufacturing, local compost use and others to help support local end markets. In particular CDPHE should focus on compost, glass, and shingle use by CDOT.*

Additional Action Comments / Recommendations Based on Themes and Broader Research →

- *CDPHE should work with Governor's Energy Office and other organizations to get recycling into the green economy plan for the state and ensure that diversion plays a role similar to energy efficiency and renewables in the state's priorities*
- *Continue to share information on diversion / accurate measurement, and commodities available in the state so businesses outside state can see materials that could be used as inputs.*
- *Market development grants need to be selected carefully. Based on research on market development grants / assistance programs in other states, there are a number of models that have not led to strong return for the grant investment. Market development efforts that fundbusiness development plans have done poorly; helping businesses with "skin in the game" and a real product has been more fruitful. Grant programs with designs that helped spur demand for an existing, but small-scale product were relatively successful in helping*

¹⁴ It might not technically be a tax incentive, but mimicking the size and intent might provide information about the tonnage potential of this type of initiative.

bring production to better economies of scale (e.g. a grant program that “matched” a percent of purchase price to bring down costs of recycled content products for schools, government, and non-profits). Washington’s Clean Washington Center (CWC) advised to make sure any R&D or technology granting projects allowed no confidentiality of the results (public money), and that this was a sticking point after-the-fact for several of their grant projects.

Education: Three types of messaging were strongly supported across the regions: clear, consistent messaging about what can be recycled locally; clarifying that recycling is a service that is not free; and information about existing facilities and services to increase recycling. The top ranked regional elements included K-12 curriculum (Thornton) and there was some support for curriculum in higher learning institutes. There was support for educating governmental / elected officials, and making sure the visioning results are presented / relayed to legislators. Community events promoting recycling were also of interest. There was opposition to: developing recycling labs with the colleges, developing a resource manual for educators, bilingual outreach, and measurement / evaluation of outreach initiatives.

Actions →

- *Support education on the local and potentially county level through grant awarding, particularly in curriculum.*
- *Clear and consistent messaging about the benefits of recycling and composting is desired, but how, what and where to divert materials is not the same statewide and should be responsibility of local entities. Thus, these efforts may or may not be appropriate for grant awards.*

Additional Action Comments / Recommendations Based on Themes and Broader Research →

- *SERA expands the “... Visioning / Charting a New Course...” website to provide links to existing resources on the topics that arose as part of the project discussions. The resources would be useful to attendees, city / county/state staff, haulers, elected officials, and potentially legislators. SERA assembles case studies (and particularly contact information and associated web links) based on some of the successful programs and options that resonated with other attendees, and that might be useful to other locations within the State. Topics include: PAYT, local ADFs, low-tech MRF options, and other options that may suite areas of Colorado and/or for which information on pros / cons / implementation information would be valuable.*
- *As a follow-on, SERA writes short articles for state-read publications, including CAFR newsletter, CML newsletter, and submits abstracts to state conferences (CML, CCI, CAFR, SWANA, other) to reach out on the project and particularly, the successful models that can be leveraged and the “next steps” to help move all regions of the State toward the shared Vision and its building blocks.*
- *CDPHE should help raise awareness of activities in higher education / colleges to provide recycling/diversion certification and classes.*

What Programs are Working Now

While the workshops were designed to gather new and innovative ideas, it was also important to avoid losing programs that are already working, and avoid planning new programs that would conflict with what works well in each region. In order to leverage the successful elements of

existing programs when moving forward, the stakeholders identified which programs in their region and around the state were working well, and then collaborated to uncover the elements that made those programs successful. By focusing on what is already working the RREO PPAB can see what has worked in the past as a guide to what may potentially work in the future.

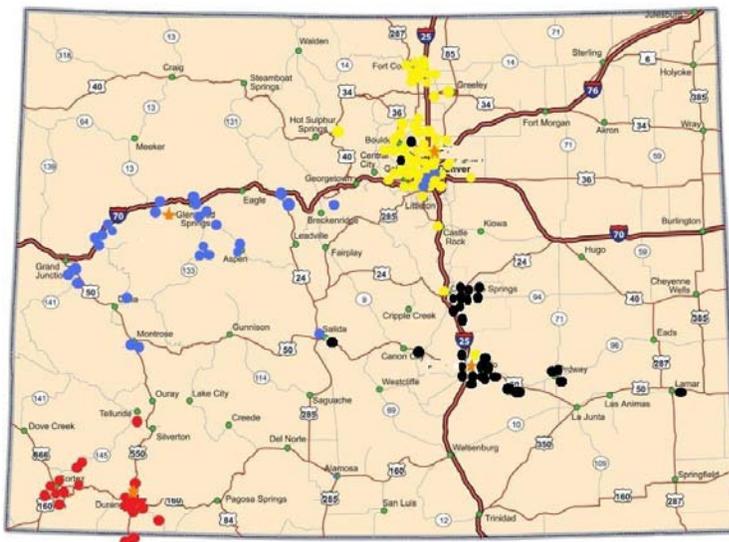
Table A.1: What Programs Are Working Now

Durango	
<ul style="list-style-type: none"> • Single stream and cardboard drop-offs in Northern New Mexico, subsidized program, hauler runs/owns equipment • Expanding and utilizing existing facilities and curbside recycling in Cortez- the program is paid for on monthly trash bills but voluntary participation. • Small compost operations in telluride and Mancos started by private companies to fill a “niche” and meet demand • Developing a member based association of solid waste professionals that is paid for thru member dues and provides training/education • Mobile recycling trailer drop-off on schedule for location/date/time operated by the Ute Mountain tribe in Towaoc. The landfill and the tribes support it financially and it is free to generators • The four corners recycling initiative in Montezuma County is a 501c3 combining federal agency, grassroots organization, and private industry to provide drop-off recycling in rural areas • College recycling education in Fort Lewis College, Durango 	<ul style="list-style-type: none"> • National park recycling program at Mesa Verde partnering private business and federal park service which share costs for program and provide service to visitors • Growing a new business from scratch- Working with the local university, EPA economic development grants, and County to start new diversion business • Pay-as-you-throw in Durango- City collects recyclables and includes the cost of service in all residential bills uses PAYT rates for residential service and makes recycling available to MF and business • CFL recycling drop-off in various retail locations throughout Montezuma County. Started by Empire Electric Coop now funded through stores that have the buckets. • Bio-solids composting in Mesa County • Local mini-MRF • County convenience center for drop-off of all types of materials at La Plata County old landfill sites and current transfer station funded through County General Fund
Glenwood Springs	
<ul style="list-style-type: none"> • Curbside recycling in Montrose provided by City with recycling costs embedding rates for ‘free’ recycling • Paper only recycling drop • Local zero waste events in Pitkin County and elsewhere • Pitkin County landfill for resource recovery including wood, YW, recyclables, MSW and others paid for through user fees and enterprise fund • Create an innovative product out of recycled materials • Regional public partnerships in Garfield County for composting, HHW, and E-waste • Non-profit education initiatives • 18 county tire recycling program in Central and South East Colorado 	<ul style="list-style-type: none"> • Statewide grants supporting mountain projects provided by RREO grants • Low-tech processing for local markets and recyclables using the available resources and meeting needs with resources • Commingling recycling (single stream) at the curb • Local drop-off recycling center in Downtown Aspen paid for by the County (through landfill and other fees) and accepting recyclables and yard waste • Mobile recycling trailer drop-off going to 4 towns/month, 1 week each • Local transfer station that acts as recycling/diversion hub for multiple towns • Mesa County Composting for organics, bio-solids and animal mortalities
Pueblo	
<ul style="list-style-type: none"> • HHW Event in Pueblo ran by public agencies, staffed by volunteers and requiring a small user fee • Town Hall Meetings in Winter Park/Frasier to define resources in community and spur entrepreneurs in recycling • Recycling co-op in Southeast with community collaboration and buy-in • San Luis Valley Tire diversion/shredding funded by 	<ul style="list-style-type: none"> • Pueblo Community Recycling Plan using divers collaboration/stakeholders to make a plan • HHW program that is free to community funded by tip fees at landfill • Single stream recycling • Composting business • Prison recycling using education and training for prisoners

<p>DOLA</p> <ul style="list-style-type: none"> • Colorado Springs “scar on the mountain” project working with a committee of haulers, public entities and a state grant to 	<ul style="list-style-type: none"> • WSRC education and outreach program to teach about the full process of recycling
Thornton	
<ul style="list-style-type: none"> • Single stream recycling throughout the Front Range • Centralized education and outreach program around entire county in Boulder (School programs, bi-lingual, etc.) • Pay-as-you-throw in multiple Front Range cities • Waste collection routing efficiency and logistical planning to reduce costs by hauler • Recyclebank incentive program provided by haulers • Household Hazardous Waste Program in Jefferson County with curbside collection and drop-off • City and County Trash Tax paid by residents and businesses to fund diversion programs(Boulder) • Single hauler contract with embedded recycling costs and PAYT (Louisville, Lafayette, Golden) • Unique tailored business focusing on commercial customer recycling services in Denver • State level product stewardship in other States (WA, CA, OR, ME) • Denver Academy Student Education • Drop-off recycling in Westminster free to residents paid for by City • Red Rocks recycling program supported by private company and City • Organic food waste collection ordinance in Boulder County • Oil collection provided by private business 	<ul style="list-style-type: none"> • RREO Grant program statewide • Mandatory pay -embedded residential recycling costs at the curb in Superior • Fort Collins Drop-Off center supported by City • Collection of cooking oil from commercial entities • Commerce City recycling contest incentive program for residential households randomly auditing residential set-outs • ReSource (non-profit) recycling yard for construction material in Boulder County • Larimer County landfill accepting multiple streams, gas collection for energy, and HHW education center for public and school field trips • Private hauler providing a ‘free’ public roll-off for recycling in Aurora • City of Denver automated collection system • Ft. Collins PAYT ordinance • Waste diversion specialist position at New Belgium Brewing company increasing corporate diversion • Roofs-to-Roads program in Boulder County (using asphalt shingles in road base) • Pueblo Comprehensive Waste Plan • Private Manufacturer using more post consumer plastic in production (Otto Carts) as a value added product

Meeting Attendees

Meeting Attendee Location (Red=Durango, Blue=Glenwood Springs, BLACK=Pueblo, YELLOW=Thornton)



Barriers and Gaps by Region

Table A2: Barriers and Gaps

Durango	
<ul style="list-style-type: none"> • Education for generators on benefits, costs, how and where and why to recycle • Education for decision-makers/elected officials • Education curriculum for students in k-12 • Financing for diversion related programs • Regulations from the state do not support the growth of diversion processing in the region • Manufacturer responsibility, advanced disposal fees, or others • Distance to markets, no major highways • Rural populations with low densities 	<ul style="list-style-type: none"> • Centralized regional facility to collect, process, and transport materials economically • Pay-as-you-throw programs • Funding for recycling and diversion beyond just SWUF • Research and technologies focusing on rural communities • Composting processing capacity and programs • Ways to transport materials to markets economically • Limited budgets for counties/municipalities • It costs more to divert than to dispose
Glenwood Springs	
<ul style="list-style-type: none"> • There is no recycling or diversion specific goals/legislation from the state • Not enough incentives for diversion- this could be incentives for generators (i.e. PAYT), incentives for businesses (tax breaks), or haulers (tip fee surcharges) • A full scale diversion campus in the mountain region • Regional facilities for rural communities to bring materials for and open to all • Education for generators on the impacts of recycling • Convenient drop-off locations throughout the mountain region • Rural and low population density areas • It costs more to divert some commodities than it does to dispose (i.e. glass) 	<ul style="list-style-type: none"> • A way for governments, cities, and others to share resources around the region • Easy access to markets or local markets for materials • Technological advances in processing, manufacturing, etc. • School curriculum • Government and private partnerships • Support for recycling programs • Economical transportation of commodities to markets • Curbside recycling to residents- embedded in trash rates • Curbside composting options • Tourists and resort areas with large population fluxes seasonally
Pueblo	
<ul style="list-style-type: none"> • Facilities to collect, process, and transport commodities • Regionalized and localized cooperation between government and private industry • Composting facilities • Drop-off sites for diversion • State legislation pushing a recycling/diversion goal • Statewide push to implement pay-as-you-throw in local communities • Education programs and curriculum in public schools are needed 	<ul style="list-style-type: none"> • Data from the commercial sector on what is happening • Support for material re-use and repurposing, not just recycling • A statewide clearinghouse, website, or information source on what facilities exist, linking suppliers and needs together • Rural populations/low income populations/ and low population density • Elected official and decision-maker support in the region • Recycling is not economically feasible in all places in the region
Thornton	
<ul style="list-style-type: none"> • Statewide legislation that supports recycling and diversion • Statewide measurement and reporting of tonnages, diversion, etc. that is consistent • Efforts to address manufacturers including 	<ul style="list-style-type: none"> • Public private partnerships are not widespread • Local end-users and manufacturers for commodities • Tip fees do not encourage diversion and are too low

<p>packaging design, information on what can be recycled, producer responsibility, and advance disposal fees</p> <ul style="list-style-type: none"> • Pay-as-you-throw programs • Waste-to-energy plants for residual materials, methane gas at landfills, and anaerobic digestion of organics • K-12 curriculum • Viable end markets and uses for locally composted materials • Education for decision-makers • Commercial recycling programs- there is little to no control currently for the commercial sector 	<ul style="list-style-type: none"> • A way for communities, non-profits, businesses, and others to share information • Access to construction and demolition debris facilities, hard to recycle facilities, MRFs, and compost facilities for all communities in the Front Range and northeast • Grant money to support programs should be increased • There is not a unified plan or strategy for solid waste in the region or state • Recycling does not always pay for itself
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Design Element Voting

Finally, the ideas and strategies for the design elements arose organically within each meeting, depending on the discussion, participants, and other factors. As a consequence, within the sessions, not all participants were able to vote across all ideas. We sent a follow-up opportunity for attendees to vote on ideas that might not have been raised in their session, in case it might be important. These results are presented in Table A3, with an “X” indicating a high vote. These votes augment Tables 3.1-3.7 in several ways:

- They provide votes on elements that were phrased in a similar way, with feedback on all items from participants in all meetings;
- They include positive and negative reactions to elements – helping highlight those elements with strong objections for some stakeholders (last 4 columns), which might help guide grant awards; and
- They include votes from some target stakeholders / invitees that were not able to attend the meetings.

Table A3. Combined Electronic and In-Person Voting Results / Recommendations

Infrastructure/Transportation	Positive				Negative			
	D	G	P	T	D	G	P	T
Grants preference / funding for infrastructure	X	X	X	X				
Grants for school education programs on recycling and pilot schools programs	X	X	X					
Encourage grant awards regionally to address needs of local communities	X	X						
Increase grant funding through higher tip fee (potentially two-part)				X				
Grants to make recycled end-products more affordable					X	X	X	
Use other sources beyond solid waste user fees to help fund the RREO grant-potentially fees on recycling or composting tons						X		X
Training on grant application / process						X		X
Grant preferences for bins								X

Legislation	Positive				Negative			
	D	G	P	T	D	G	P	T
Expanded grants program, focusing on infrastructure, market development, new technologies		X	X	X				
Provide incentives for inter / intra governmental coordination (regional planning) one local and regional level		X	X					
Statewide PAYT with embedded recycling, potentially for larger communities first	X	X					X	
Product stewardship / producer responsibility legislation to reduce packaging		X						
Streamline and clarify regulatory processes and permitting, efficient / timely approval, reduce obstacles	X							
Quicker permitting for recycling and composting facilities in particular	X							
More funding, authority, or grants for building local MRFs			X					
More funding, authority, or grants in rural communities	X							
E-waste disposal ban				X				
State bottle bill			X				X	
Two-tiered statewide diversion goals with lower goals for more rural areas	X	X						
Mandatory recycling for certain materials in the residential sector						X	X	
Tonnage reporting at landfills						X		
Mandatory recycling for large businesses							X	
ADFs or product takebacks with fees					X			
Yard waste disposal ban					X			X
Develop statewide ballot initiative through collaborative stakeholder process						X		X
Green building codes					X			

Funding	Positive				Negative			
	D	G	P	T	D	G	P	T
Manufactures pay for programs or takes material back for recycling		X		X				
Pay as you throw (PAYT)	X							
Pooling resources (financial, capital) among jurisdictions		X						
Lottery proceeds for recycling			X	X				
Discounts for using recycling in construction projects (funded by higher fees for those not using recycled)			X					
C&D deposit program that is rebated if recycling target met – local				X				
Tip fee surcharges paid by recycling facilities as well as landfills					X	X		X
Pre-paid recycling punch card						X	X	X

Infrastructure and Transportation	Positive				Negative			
	D	G	P	T	D	G	P	T
Review and remove regulatory hurdles for local small businesses to develop processing infrastructure (top in Pueblo and Durango)	X		X					
Landfills become a material management location including composting, recycling facilities, solar and wind power, gas collection and use, etc.		X		X				
Establish logistics network to consolidate loads from rural areas to the front range		X	X					

MRF – recycling, processing, sorting and shipping to regionalized areas – open to all, build on public private partnerships	X							
Public private partnerships to establish back-hauling for free or large discounts			X					
Establish a hauler network for rural areas			X					
Mountains and rural have transfer stations with six-streams that go to front range facilities (MRF, biodiesel, CHaRM, C&D, Reuse, compost)				X				
Dedicated public landfill for construction and demolition					X	X		X
Compressed natural gas refueling stations					X	X	X	X

Programs and Incentives	Positive				Negative			
	D	G	P	T	D	G	P	T
Centralized drop-off centers that accept all types of divertible material – staffed if possible		X	X					
Residential organics and food waste composting programs				X				
Recycle network or state co-op for commodity selling, marketing, pricing	X							
Embed the cost of recycling in trash collection		X		X				
Incentives for local use of processed compost materials – particularly on farms			X					
Increase landfill tip fees / surcharges on MSW to discourage LF and encourage diversion		X			X	X		X
Customer fees / rates (either commercial or residential) that encourage recycling and diversion (beyond PAYT – could be rebates, coupons, others)		X						
Locally-based incentives to encourage green businesses (i.e. reduced permit fees, taxes)			X					
Drop-off for yard waste and/or food waste		X						
Deconstruction mandate – during demolition materials must go to re-use sites				X	X			
Burn ban and illegal dumping enforcement					X	X	X	X

Market Development	Positive				Negative			
	D	G	P	T	D	G	P	T
Work together on a regional level to encourage markets		X	X	X				
Develop / identify market for crushed glass and its uses	X			X				
Regionalization across state borders, not just Colorado	X			X				
Ease the permitting process locally to encourage business growth	X							
Government (local / state) cooperation and acceptance of products from recycled materials (roof to roads, glassphalt, others)		X						
Inform businesses and marketplace of materials / recycled commodities that are available	X							
Incentives for businesses to use local supply of diverted commodities or manufacture recycled products – i.e. less taxes, more subsidies	X	X	X					
Landfill bans (as a way to generate supply of commodities and encourage end-users to move into state)					X	X	X	X
Regulations that encourage commercial industrial re-use					X		X	

Education	Positive				Negative			
	D	G	P	T	D	G	P	T
Clear, consistent messaging for what can be recycled locally, regionally	X	X	X					
Emphasize that recycling is a service in education pieces and that it costs money to provide the service		X	X					
Inform public about existing facilities and infrastructure so they can use them more	X							
K-12 schools program / curriculum				X				
Gather the information collected at the visioning meetings and regional differences and bring to state capital- share with legislators			X					
Educate government / elected officials	X							
Community wide events promoting recycling			X					
Develop solid waste / recycling lab with colleges						X		X
Resource manual for teachers							X	
Bilingual programs, education programs to address underserved communities, and outreach designed for hard to reach populations					X			
Message effectiveness is measured and then the effective ones are repeated (state assistance and grants to track successful outreach and how to conduct)								X