

# Summit County 5-Year Construction and Demolition Plan



Prepared For:  
Summit County Government

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March 2023



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## 1. Introduction

Construction & Demolition (C&D) debris currently makes up 30% of Summit County’s landfill stream.<sup>1</sup> To meet community waste diversion and climate action goals, Summit County must continue to implement waste diversion policies and materials management programs to effectively increase waste diversion and resource recovery.

A 2018 Summit County waste audit revealed 37% of landfilled C&D debris has the potential to be diverted. Table 1 details material diversion potential based on the audit results.<sup>2</sup>

**Table 1: 2018 SCRAP C&D Audit Results**

Material	Diversion Potential
Untreated wood (primarily pallets)	18%
Rock, Concrete & Grit (mostly stone and brick)	9%
Metals	7%
Cardboard	3%
<b>Total C&amp;D Diversion Potential</b>	<b>37%</b>

Summit County’s C&D Diversion Plan recommendations are based on current and future C&D waste diversion opportunities, existing county and state C&D operations, stakeholder feedback, and communities with active C&D policies and programs.

Plan stakeholders include Summit County Resource Allocation Park (SCRAP), the High Country Conservation Center (HC3), local towns and haulers, local builders and developers, and the Summit County Zero Waste Task Force Committee.

Three Colorado communities and two out-of-state communities were collaboratively chosen by HC3, SCRAP, and VERT Sites for project research and C&D plan development. Communities include Pitkin County, CO; Boulder, CO; Fort Collins, CO; Austin, TX; and Hennepin County, MN. These influential communities have an active sustainability, climate action, or a materials management plan in place along with actively enforced C&D policies or programs. Please see the *Influential Communities Report* in Appendix B for further information.

Six potential policies and programs were also analyzed for plan development. The plan identified two policies and one program for immediate consideration: Waste Diversion Ordinances, C&D Materials Management Plans, and Resource Recovery Grants. Please see the *Policies for Enhancing C&D Waste Diversion in Summit County* report in Appendix A for additional information on these programs.

<sup>1</sup> Souder, Miller, & Associates. Summit County Waste Diversion Study. Page 3. 2019.

<sup>2</sup> Additional C&D Audit results can be found on pages 15 and 16 of the 2019 Study.

In addition, insights from local haulers and contractors confirm the need and desire to recover C&D materials and waste streams. Please visit Appendix D for *Contractor Survey Results* and Appendix C for additional stakeholder feedback in the *Stakeholder Summaries*.

Lastly, Summit County’s Zero Waste Task Force and local government agencies realize the value of C&D diversion and recovery and support the demand for recovering these resources.

**Current C&D Operations: Local**

The SCRAP saw 61,083 tons of loose tonnage enter the landfill in 2022. Of that, the facility estimates 40% of the materials to have come from C&D jobsites. If accurate, this means the SCRAP saw a 10% increase in landfilled C&D materials since the 2018 Study.

Most C&D debris entering the landfill is in mixed loads of construction materials. Currently, the SCRAP does not have the infrastructure to separate and sort mixed C&D loads. Mixed C&D loads can include cardboard, lumber, treated wood, asphalt, concrete, other aggregates, pallets, trash, gypsum, metals, slash, yard trimmings, plastics, and various other items and materials. Contractors may source-separate and recycle some of these materials such as cardboard and scrap metal for a lower disposal fee.<sup>3</sup> See Table 2 for SCRAP’s list of currently accepted C&D materials.

**Table 2: SCRAP C&D Accepted Materials**

Accepts and recycles	Accepts for future recycling and processing
Scrap metal	Construction Wood (clean, nontreated pallets and dimensional lumber)
Cardboard	Concrete (clean, free of rebar and asbestos)
Wood (slash/yard trimmings)	Asphalt (clean, free of rebar and asbestos)

According to the 2018 Waste Diversion Study and stakeholder feedback, untreated wood has a high diversion potential. The SCRAP has received approval and funding to pilot a wood-chipping (pallets and dimensional lumber) program beginning in 2023.

While the SCRAP does accept concrete, asphalt, dirt, and other aggregates for future recycling and processing, Peak Materials is a local, private business that also accepts these materials. Peak uses these materials for environmental reclamation (such as backfilling gravel pits) and repurposes and sells CDOT-approved asphalt to the public. Many local contractors and developers that have concrete, asphalt, and other aggregates produced at their jobsites have these materials sent to Peak Materials. However, Peak’s reclamation backfilling operation is expected to be complete in 5-6 years; therefore, the SCRAP must plan to receive more concrete, asphalt, and other aggregates. The SCRAP accepted 268 tons of concrete in 2022, however, it had to reject a large majority of it due to asbestos and rebar. Please see Table 3 for additional SCRAP C&D 2022 data.

**Table 3: 2022 SCRAP C&D Data**

Material	Tonnage
Concrete	268
Construction Wood	94
Asphalt	52

<sup>3</sup> SCRAP Brochure. <https://www.summitcountyco.gov/DocumentCenter/View/30665/2021-brochure>. 2021.

## ***Current C&D Operations: State***

C&D debris accounts for 26% of Colorado's landfill stream and many communities are addressing the industry's waste generation and disposal.<sup>4</sup> Pitkin County, the City of Boulder, and Fort Collins already have C&D diversion policies and/or programs in place, and the City of Lakewood recently passed a C&D waste diversion ordinance.

Recycle Colorado and Next Cycle are two Colorado organizations that aim to create end-markets and infrastructure for resource recovery and reuse markets in the state. The organizations serve as advisors to advance waste diversion solutions and often influence state policy and legislation. Recycle Colorado's C&D Council is promoting the increase of end markets within the organization's 5-year strategic plan along with deconstruction practices, creation of C&D infrastructure, and implementation of material landfill bans for commonly recyclable or recoverable materials.

## **2. C&D Action Plan**

### ***Plan Objectives***

The C&D Action Plan incorporates two critical objectives and is designed to meet the community's 2035 diversion rate goal of 40%. The plan objectives are:

- Divert 25% of C&D debris from the landfill by 2028.
- Divert 50% of C&D debris from the landfill by 2035.

### ***Plan Goals***

The plan recommends four 5-year goals to increase C&D waste diversion.

#### **GOAL 1: SCRAP to record C&D disposal and diversion data to attain an accurate baseline.**

- 2023 – SCRAP to begin tracking and reporting C&D tonnages quarterly.
- 2023 – Acquire Peak Materials data to include in diversion tonnages.
- 2024 – SCRAP C&D waste audit.

#### **GOAL 2: Develop infrastructure and programs to increase C&D diversion.**

- 2023 – SCRAP to find end markets for concrete and asphalt; SCRAP to begin crushing concrete and convert materials to a crushed product for Summit County Government and resale.<sup>5</sup>
- 2023 – SCRAP to pilot chipping pallets & lumber to create and sell mulch.
- 2023 – Pilot waste diversion project with local contractor(s).
- 2025-2026 – County to assess deconstruction and reuse policy and programs as local and state markets become more available.
- 2026-2027 – SCRAP to implement a fully operational concrete crushing program, as long as there are enough clean concrete tons received and end-markets available.

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<sup>4</sup> Burns & McDonald and SERA. Colorado Solid Waste Integrated Materials Management Plan. June 2016. 6-32.

<sup>5</sup> Contingent upon material volume and contamination.

**GOAL 3: Initiate grant programs to encourage voluntary C&D landfill diversion (before C&D diversion ordinance adoption).**

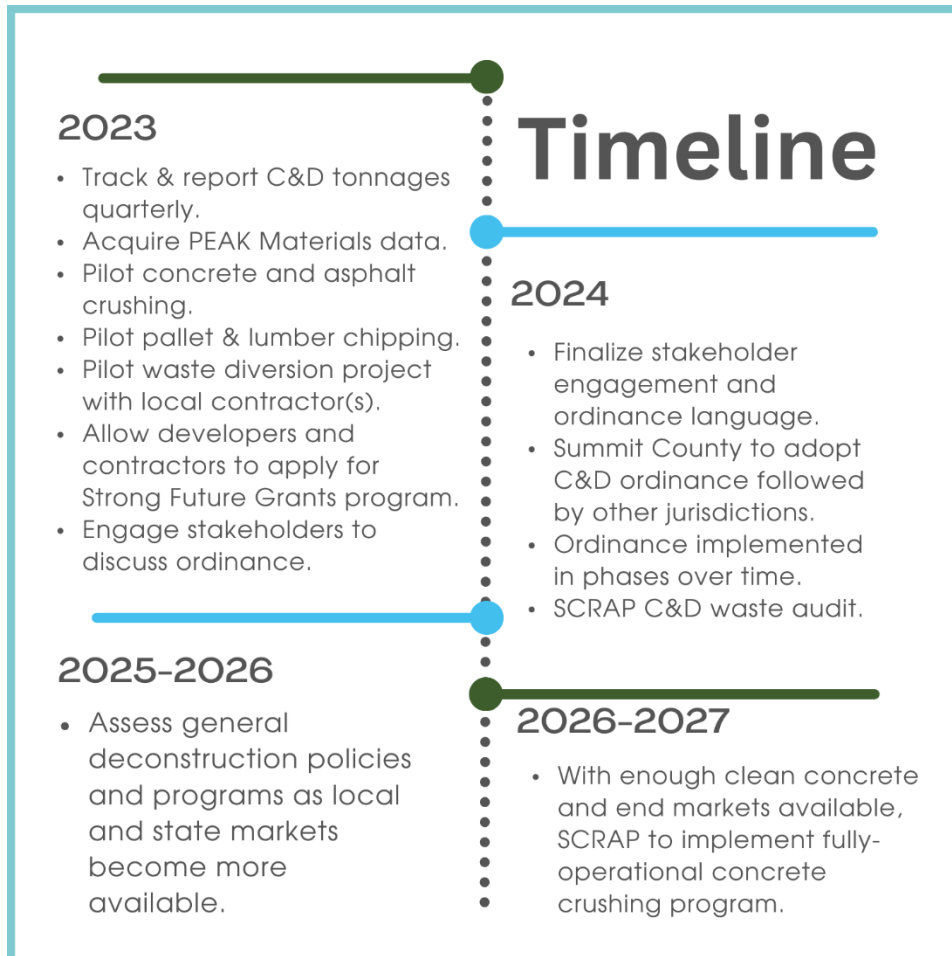
- 2023 – Ensure that developers/contractors diverting C&D materials are eligible to apply for the new Strong Future Community Recycling Grants program.

**GOAL 4: Create local material diversion ordinances to recover C&D debris.**

- 2023-2024 – Stakeholder engagement and ordinance adopted by Summit County Government (other jurisdictions to follow).
- Ordinance to be implemented in cumulative phases with requirements and waste diversion goals to increase over time.
  - Phase 1 – Require commercial and residential projects (new construction, remodels, and demolition) to submit the respective Materials Management Plans.
  - Phase 2 – Require highly recoverable materials from all C&D projects to be diverted from the landfill.
  - Phase 3 – Require a percentage of all C&D project materials to be diverted from the landfill.

**Plan Timeline**

**Figure 1: 5-Year Plan Timeline**



### **3. Additional C&D Waste Diversion Considerations**

#### *3.1. Material landfill bans*

Summit County can implement landfill bans for materials such as cardboard, scrap metal, mattresses, etc. Fort Collins was the first Colorado community to implement a cardboard landfill ban for all generators; this includes residential, commercial, and industry material generators. Please refer to Appendix A, Page 2 to learn more about Fort Collins' ban.

#### *3.2. Tiered Pricing Structure*

Implementing a tiered pricing structure is an additional way to incentivize landfill diversion as tipping fees for mixed C&D loads and contaminated C&D recycle loads would be higher than clean source-separated C&D loads. A disposal pricing structure will be successful if Summit County is able to create viable C&D diversion and recycling programs similar to Pitkin County. Pitkin County currently accepts ten different types of C&D materials for diversion and allows contractors to donate materials and items, which count toward a project's overall diversion requirements. Please refer to Appendix A, Page 6-7 for additional information on Pitkin County.

#### *3.3. Deposits*

Summit County can also consider collecting diversion deposits from affected C&D project sites before a permit, inspection, or certificate of occupancy can be obtained by a contractor. Contractors would pay a refundable deposit that could be calculated based on the project type, materials generated, and a required diversion percentage for the project. Current Colorado communities with C&D deposits include City of Boulder and Pitkin County. To learn more about Material Diversion Deposits please refer to Appendix A, Page 6 and Appendix B, Pages 4 and 5.

#### *3.4. Deconstruction*

Deconstruction and selective demolition are two methods to recover items and materials from construction projects in a more surgical and thorough manner. While Summit County does not currently have infrastructure in place (i.e., reuse centers or markets for deconstructed materials), deconstruction should be considered in the future. Many communities that implement waste diversion ordinances also include deconstruction in the ordinance. Please see Appendix B, Page 4 to learn how Boulder implements deconstruction into their C&D waste diversion ordinance.

### **4. Acknowledgements**

The Summit County 5-Year C&D Diversion would not have been possible without the High Country Conservation Center, the SCRAP, The Summit County Builders Association, local towns, local haulers, local contractors, and the Summit County Zero Waste Task Force.

In addition, the Colorado communities of Boulder, Fort Collins, and Pitkin County and the out-of-state communities of Austin, Texas, and Hennepin County, Minnesota have all provided valuable insights on C&D waste diversion policies and programs.

# Appendices



# **Appendix A**

## **Policies for Enhancing C&D Waste Diversion in Summit County**

# Policies for Enhancing C&D Waste Diversion in Summit County, Colorado



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October 2022



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# 1. Introduction

This report presents six strategies Summit County could implement to increase landfill diversion of construction and demolition (C&D) waste. These strategies are taken from five communities that have existing C&D policies, ordinances, or other waste diversion techniques.

The three Colorado communities compared for this study are Fort Collins, Boulder, and Pitkin County. In addition, the communities of Austin, Texas and Hennepin County, Minnesota are also included.

Table 1 shows key C&D policies for each community. Comparisons of each community as well as if a Zero Waste, Climate Action, or Sustainability plan is in place for these jurisdictions or municipalities.

The findings in this report summarize what these five communities require contractors to do in order comply within their respective community's C&D waste diversion policy.

The objective of this report is to provide actionable C&D waste diversion methods that the Summit County Resource Allocation Park and local jurisdictions could implement for increasing C&D waste diversion.

Table 1: C&D Communities Comparison Chart

COMMUNITY	MATERIAL DISPOSAL BAN(S)	CONSTRUCTION MATERIALS MANAGEMENT PLAN	RESOURCE RECOVERY GRANTS	C&D MATERIAL DIVERSION ORDINANCE	MATERIAL COMPLIANCE DEPOSIT	DISPOSAL PRICING STRUCTURE	ZERO WASTE/ CLIMATE/ SUSTAINABILITY PLAN	COMMUNITY C&D DIVERSION RATES	COMMUNITY OVERALL DIVERSION RATES
PITKIN COUNTY, CO	✗	✓	✗	✓	✓	✓	✓	70-75%	38%
BOULDER, CO	✗	✓	✗	✓	✓	✗	✓	70-80%	44%
FORT COLLINS, CO	✓	✓	✗	✓	✗	✗	✓	CITY HAS NOT BEEN TRACKING	51%
AUSTIN, TX	✗	✓	✗	✓	✗	✗	✓	40-50%	42%
HENNEPIN COUNTY, MN	✗	✗	✓	✗	✗	✗	✓	30%-35%	42%

## 2. Material Disposal Bans

The Summit County Resource Allocation Park (SCRAP) currently accepts clean cardboard, scrap metal, clean concrete, and clean wood from Summit County construction and demolition jobsites. The SCRAP's loose tonnage trash disposal fee is higher than the fees imposed on recoverable materials such as cardboard, concrete, and clean wood which incentivizes contractors to separate these materials from their trash. Jobsite dumpsters are often contaminated with other materials or experience illegal dumping. A material disposal ban can help with contamination by ensuring one or more materials from C&D jobsites is diverted from the landfill.<sup>1</sup>

Fort Collins has a cardboard disposal ban. This ban applies to commercial entities, residents, and C&D jobsites. This ordinance was implemented to help the city divert 50% of the waste stream from landfill disposal and to reduce greenhouse gas emissions. If a hauler deems a trash container to contain 25% or more clean cardboard, it can refuse service until the disposal issue is addressed and the cardboard removed and recycled properly.<sup>2</sup>

A similar ban can be encouraged in Summit County. Materials to consider are those that yield a high recycle rate, materials that can easily be accepted and diverted at the SCRAP, and materials that can easily be collected at construction and demolition jobsites. Examples include scrap metal, clean wood, and concrete and aggregates.

## 3. Building Codes: Construction Materials Management Plans

A Construction Materials Management Plan (CMMP) is a low-cost strategy to implement when first introducing a C&D waste diversion policy or ordinance. A Construction Materials Management Plan sets standards that must be met to proceed with a new construction, addition, or remodel permit or to receive a final Certificate of Occupancy. A CMMP can also be tied to final building inspections.

Both Pitkin County and Austin require a Final Construction Recycling Report or a completed project Diversion Report when a final building inspection is requested.<sup>3</sup>

Boulder requires a Sustainable Deconstruction Plan to be submitted upon project initiation; this plan must be completed prior to issuance of a Certificate of Occupancy. Fort Collins also requires a Construction Waste Management Plan to begin a C&D project and for Certificate of Occupancy.<sup>4</sup>

Summit County government and local jurisdictions will have to consider the time needed to review plans pre- and post-construction as well as how to enforce a Construction Materials Management Plan for permitting purposes.

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<sup>1</sup>SCRAP Brochure: [2021 Brochure](#).

<sup>2</sup>City of Fort Collins. Cardboard Recycling: <https://www.fcgov.com/recycling/cardboard>

<sup>3</sup>Pitkin County. Building Inspections: <https://www.landfillrules.com/before-final-inspection> and Austin, Texas: <http://www.austintexas.gov/cdreport>

<sup>4</sup>City of Boulder SDMMMP: <file:///C:/Users/kslau/Downloads/Sustainable%20Deconstruction%20Plan%204.0%20Fillable.pdf>

## 4. Resource Recovery Grants

In addition to policies and ordinances, Resource Recovery Assistance Grants can enhance the diversion of C&D materials from construction projects by providing monetary incentives for waste diversion.

Hennepin County, Minnesota provides deconstruction, demolition, structural moves, and reuse grants which encourage C&D material diversion through deconstruction and reuse. To date, Hennepin County has provided \$60,000 in grants, with an annual grant program budget of \$100,000. The funding is supported by the county's Solid Waste Enterprise Fund.<sup>5</sup>

Recently VERT Sites worked with 5 Senses Hospitality to divert and recover certain material streams and items from their hotel remodel project in Frisco, Colorado. While mattress disposal initially posed a challenge, VERT Sites worked with the SCRAP and the 1A Advisory Committee to secure funding for recycling. In the future, 1A funding could be allocated to demolition or deconstruction diversion opportunities, like what Hennepin County currently has in place.

## 5. C&D Material Diversion Ordinance

A material diversion ordinance requires contractors and builders to divert a certain percentage of materials from their projects or to divert specific materials without a set volume. If using a percentage range, any number can be set forth for a required minimum or maximum project diversion rate.

Austin requires at least 50% of construction and demolition debris to be recycled or reused, although this only applies to projects that are 5,000 sq/ft or larger. Contractors can also meet this requirement by landfilling less than 2.5 pounds of trash per square foot of a project's floor area.<sup>6</sup>

Fort Collins requires the diversion of four materials from jobsites: cardboard, scrap metal, wood, and concrete/asphalt/masonry.<sup>7</sup>

Boulder has a 75% diversion requirement for demolition and deconstruction projects. Contractors can achieve this percentage in several ways: recycling, donation, and repurposing.

Along with meeting a 75% diversion percentage, Boulder, like Fort Collins, requires diversion of at least three material streams.<sup>8</sup>

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<sup>5</sup> Based on conversations with Hennepin County's C&D Waste Specialist.

<sup>6</sup> Retrieved from: <https://www.austintexas.gov/cd>

<sup>7</sup> Retrieved from: <https://www.fcgov.com/recycling/constructiondebris>

<sup>8</sup> Retrieved from:

[file:///C:/Users/kslau/Downloads/Sustainable%20Deconstruction%20Plan%204.0%20Fillable%20\(1\).pdf](file:///C:/Users/kslau/Downloads/Sustainable%20Deconstruction%20Plan%204.0%20Fillable%20(1).pdf)

While new construction projects do not have to divert a set percent of material, they are required to recover clean wood, cardboard, and metal.

Pitkin County's C&D Material Diversion Ordinance requires a Material Diversion Compliance Deposit and establishes a tiered pricing structure for mixed C&D loads. Both strategies are further explained in the following sections.

## **6. Material Diversion Compliance Deposit**

Summit County and local jurisdictions can consider adopting a refundable Material Diversion Compliance Deposit. This means contractors would pay a refundable deposit that is calculated based on various project features. Examples include project type, estimated material tonnages the project will generate, or project square footage. To receive a full or partial deposit refund, a contractor must comply with the diversion requirements.

Current communities with a compliance deposit include Pitkin County and Boulder. Pitkin County and Boulder's deposit program is 100% refundable if contractors meet the diversion requirements. Contractors who do not meet the necessary diversion goals will receive partial to zero refund from their deposit.

Though not intended to be a revenue stream, Pitkin County has seen an increase in revenue from deposits not being refunded. Close to \$3 million in non-refunded deposits has been collected since the county implemented the ordinance in 2020.<sup>9</sup>

## **7. C&D Disposal Pricing Structure**

Pitkin County's C&D Material Diversion Ordinance also establishes a tiered pricing structure for C&D debris.

The last waste diversion method to consider is a tiered pricing structure for C&D material streams. A tiered pricing structure can incentivize contractors to separate and manage dumpster contamination by providing different prices for material disposal. A dumpster that contains both trash and recoverable items would be charged the highest disposal rate while a dumpster free of trash and contaminants would be charged the lowest rate.

Pitkin County is the only community that has a tiered structure disposal for C&D materials. This past spring, the county was forced to increase its Tier 4 price by \$50 due to lack of compliance and diversion numbers not being met by registered C&D projects. See Table 2 on Page 7 for Pitkin's mixed C&D pricing.

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<sup>9</sup> Based on conversations with Pitkin County's Solid Waste Director.

Table 2: Pitkin County, Colorado C&D Disposal Tier Pricing

TIER	COST PER TON	MIXED C&D TIER TONNAGE RANGE
1	\$98.25/TON	0-30 TONS
2	\$118.25/TON	31-60 TONS
3	\$138.25/TON	61 TONS OR MORE
4	\$198.25/TON	ALL MIXED LOADS (TRASH + RECOVERABLES)

Pitkin's pricing structure is based on the project's estimated generated tonnage. Disposal rates are tracked in the county's diversion tracking software, Green Halo. The tracking system monitors load amounts and notifies customers when they reach the tier limit. Once a tier limit has been reached, the scale system will then charge at the next higher tier tipping fee.<sup>10</sup>

Any mixed C&D load containing trash will be charged the highest disposal rate at \$198.25/ton. This is to encourage material separation at jobsites. Source-separated loads of recoverable materials (i.e., loads containing only one type of material) are cheaper to dispose than mixed loads. Disposal rates for source-separated materials range from \$0-\$45/ton for disposal with scrap metal and cardboard being free to dispose. Concrete and other aggregate disposal rates range from \$10-\$45/ton.

## 8. Conclusion

If implemented, these six strategies could help the Summit County community increase its diversion rate. However, it's important to keep in mind that what works in one community might not work in Summit County. Mandating the diversion of materials requires an outlet for them. The county and local jurisdictions should contemplate best practices for Summit County and consider multiple resource recovery strategies for the enhancement and successful increase of construction and demolition waste diversion.

<sup>10</sup> Retrieved from: <https://www.landfillrules.com/construction-and-demolition-debris>



# **Appendix B**

## **Influential C&D Communities & Programs Report**

# INFLUENTIAL C&D COMMUNITIES AND PROGRAMS REPORT



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November 2022



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# 1.0 INTRODUCTION

600 million tons of construction and demolition (C&D) debris was generated in the United States in 2018.<sup>1</sup> In Colorado, C&D materials currently make up 25-60% of landfilled materials throughout the state.<sup>2</sup> For Summit County, Colorado, 30% of landfilled materials come from C&D projects.<sup>3</sup>

The High Country Conservation Center (HC3) administered an RFP for developing a 5-year C&D Debris Recycling Plan to enhance C&D material diversion in Summit County and awarded VERT Sites LLC to lead the process.

One of the primary objectives of the Summit County 5-Year C&D Debris Recycling Plan is to identify three Colorado communities and two out-of-state communities that either have construction and demolition policies, ordinances, or C&D diversion incentives in place. This Influential C&D Communities and Programs Report evaluates three Colorado communities: Pitkin County, The City of Boulder, and the City of Fort Collins, and 2 out-of-state communities: Hennepin County, Minnesota and The City of Austin, Texas.

While other communities across the state and country have C&D programs, these five were chosen for further research based on the potential to implement similar programs in Summit County. All three Colorado communities have C&D waste diversion policies and ordinances in place, and they all have varying requirements for Construction Materials Management Plans. In addition, Austin and Hennepin County each offer similar and alternative solutions for C&D waste diversion. The findings in this report present the current policies or programs these communities have in place and present the challenges and successes of each.

# 2.0 COMMUNITIES

In order to meet community waste diversion goals, climate action goals, or address disposal space issues, forward-thinking communities have adopted and implemented C&D diversion ordinances in conjunction with other materials management policies (e.g., Pay As You Throw programs). One common theme that ties together the five communities featured in this report is waste diversion and climate action goals established in Climate Action or Zero Waste Plans.

1. "Construction and Demolition Debris: Material-Specific Data." EPA, Environmental Protection Agency, <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/construction-and-demolition-debris-material>.

2. Recycle Colorado. 2019 C&D End Market Development Report. Page 15. <https://www.recyclecolorado.org/assets/docs/Construction%20%26%20Demolition%20End%20Market%20Development%20Report%202019.pdf>

3. Souder, Miller, & Associates. Summit County Waste Diversion Study. Page 3. 2019.

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## 2.1 BOULDER, COLORADO

### *C&D Programs and Policies*

The City of Boulder implemented a Deconstruction and Demolition waste diversion ordinance in 2016. All residential and commercial Level 4 alterations (projects with a work area that meet or exceed 50% of the building area), and projects seeking full demolition permits must divert 75% of the project's waste.<sup>6</sup> Boulder supports and encourages multiple waste diversion outlets. Approved material diversion can be accomplished by salvaging building materials for donations, recycling recoverable materials, and repurposing or reusing project site materials. In addition to meeting a 75% diversion requirement, all affected demolition projects must divert three city-approved materials, e.g., scrap metal, cardboard, concrete, etc., along with achieving a waste diversion percentage requirement. New construction projects do not have diversion percentage requirements nor is material diversion enforcement currently taking place at new construction sites. The City's main focus for new construction projects is contractor commitment to divert city-approved recoverable materials.<sup>7</sup>

To receive both a demolition permit and a final building inspection at project completion, contractors must pay a non-refundable administrative fee, a refundable Material Diversion Compliance Deposit, and submit a Sustainable Deconstruction Plan before a permit can be issued. They must also provide the project's final material disposal tonnages and costs. The Compliance Deposit is priced at \$1 per square foot, with a minimum fee of \$1,500. For example, a 50,000 square foot project will be charged a \$50,000 Compliance Deposit. Contractors who meet the diversion requirements will receive a full refund; contractors who do not meet the necessary diversion goals will receive partial to zero refund. In addition to the Compliance Deposit, Boulder also charges a non-refundable \$219 administrative fee.<sup>8</sup>

To help contractors achieve these waste diversion goals, material diversion can be tracked on a free City-supplied C&D waste diversion tracking form. The C&D form is submitted upon final inspection request.<sup>9</sup>

Boulder currently has a 44% overall diversion rate and a 78% diversion rate with C&D materials.

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<sup>6</sup> "City of Boulder Sustainable Deconstruction Plan." City of Boulder

<sup>7</sup> [https://bouldercolorado.gov/sites/default/files/2021-04/Sustainable\\_Deconstruction\\_Plan.pdf](https://bouldercolorado.gov/sites/default/files/2021-04/Sustainable_Deconstruction_Plan.pdf).

<sup>8</sup> Based on conversations with the City of Boulder's, Circular Economy Policy Advisor.

<sup>9</sup> Waste Regulations." City of Boulder, <https://bouldercolorado.gov/services/waste-regulations>.

### *Local C&D Disposal Facilities*

Boulder allows multiple outlets for C&D recycling, repurposing, and reuse. This has led to the creation of a strong local reuse market. For example, Reuse Central has been in operation since 1979 and is one of the largest reuse stores in the city. It is a self-funding non-profit with 12 full-time employees. The agency rents land from the city at \$1 per year.<sup>10</sup>

Along with a viable reuse market, Boulder has numerous processors for concrete, aggregate, cardboard and other C&D materials. Western Disposal, a privately owned and operated organization, is a C&D material hauler and transfer station in Boulder. Contractors who partner with Western Disposal can request a "Sort Box" which allows concrete, cardboard, wood, and metal to be combined in a dumpster and later sorted and processed at the facility.<sup>11</sup> As a private hauler and facility, Western Disposal mostly processes its own material loads, however, the transfer station does accept loads from other private haulers which contributes to the city's overall waste diversion percentages. Western Disposal was unwilling to share annual material collection numbers and past and current diversion and landfill numbers.

In 2021, Western Disposal received a Front Range Waste Diversion Grant that funded the purchase of C&D sorting equipment and salaries for two full-time employees. The C&D sorting conveyor system cost roughly \$250,000 and Western's first year's operational cost was \$213,000. Staffing accounts for the majority of costs including allocations for marketing, program management, sorters, and a skid steer operator.<sup>12</sup> Figure 1 shows Western Disposal's C&D sorting and transfer station.



<sup>10</sup> Based on conversations with Resource Central's Floor Manager.

<sup>11</sup> "Construction Waste Sorting & Recycling." Western Disposal, <https://www.westerndisposal.com/wp-content/uploads/2022/03/1-CW-Rep-Flyer-New.pdf>.

<sup>12</sup> Based on conversations with Western Disposal's Community Relations Manager.

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### *C&D Program Staff*

Boulder currently has 2 individuals that review C&D submittals. The City's Circular Economic Policy Advisor (CEPA) and an additional employee. Together, they manage and review all C&D program submittals. The City's CEPA currently handles project exemptions, reconciliations, permitting, and program administrative work in addition to her policy and research work.

### *C&D Program Budget*

Program implementation is estimated to be \$250,000 which includes the staff mentioned above and additional city-department overlaps.<sup>13</sup>

## **2.2 FORT COLLINS, COLORADO**

### *C&D Programs and Policies*

Fort Collins implemented a Construction & Demolition Waste Diversion ordinance in 2012. To receive a building a permit, a Construction Materials Management Plan (CMMP) must be submitted at the time of permit application.<sup>14</sup> For new construction, additions, and remodel projects 2,500 square feet or more, wood waste, scrap metal, concrete (and other aggregates), and cardboard must be recycled. Demolition projects 1,000 square feet or more are required to recycle metal and concrete, aggregate, and masonry.<sup>15</sup> Projects are not required to meet a diversion percentage nor are they required to pay a Diversion Compliance Deposit. Reuse is encouraged but also not required. Failure to comply with the ordinance can result in a \$3,000 a day fine and up to 6 months in jail.<sup>16</sup>

Though the ordinance is ten years old, it has never been enforced prior to 2022.<sup>17</sup> Contractors and builders were not held accountable for C&D waste diversion and the city did not track diversion or issue out-of-compliance warnings.<sup>18</sup> Now, Fort Collins is considering lowering their C&D project minimum of 2,500 square feet to 1,000 square feet and requiring C&D material separation at jobsites. If the latter were to be implemented and a City Inspector or third-party auditor were to visit a project site and see non-separation of C&D materials, the project's contractor would be out-of-compliance.

Adopted in 2013, Fort Collins also has a Material Disposal Ban for cardboard. All

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<sup>13</sup> Based on conversations with the City of Boulder's, Circular Economy Policy Advisor.

<sup>14</sup> "Construction Waste Management Plan & Documentation." City of Fort Collins, [https://www.fcgov.com/recycling/files/construction-waste-management-plan\\_2022.pdf?1643225999=](https://www.fcgov.com/recycling/files/construction-waste-management-plan_2022.pdf?1643225999=).

<sup>15</sup> "Construction Site Recycling." City of Fort Collins, <https://www.fcgov.com/recycling/constructiondebris>.

<sup>16</sup> "Construction Site Recycling." City of Fort Collins, <https://www.fcgov.com/recycling/constructiondebris>.

<sup>17</sup> Based on conversations with the City of Fort Collins Senior Environmental Compliance Specialist.

<sup>18</sup> Based on conversations with the City of Fort Collins Senior Environmental Compliance Specialist.

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cardboard generators must properly divert their cardboard from the landfill stream. Material haulers are exempt from emptying trash receptacles when clean cardboard accounts for at least 25% of the waste. This ordinance was adopted to support City waste diversion and climate action goals.<sup>19</sup>

Fort Collins has a 51% diversion rate, but it is unknown how much of that diversion comes from C&D materials since the city has not been tracking the sector's disposal data or enforcing the ordinance.

#### *C&D Disposal Facilities*

Fort Collins has access to multiple C&D recycling and processing facilities and a small reuse market given the city's proximity to other Front Range communities. Fort Collins had considered constructing a reuse marketplace similar to Resource Central in Boulder as well as a full-scale C&D recycling facility, but the city did not pursue either option. If Fort Collins were to have created a Reuse Warehouse, the cost was estimated to have been \$500,000 and a full-scale C&D Materials Recycling Facility to have been between \$5-7 million.<sup>20</sup>

#### *C&D Program Staff*

Fort Collins hired 2 Environmental Compliance Specialists in late winter 2022. Their roles are to re-introduce the C&D Waste Diversion Ordinance to contractors and to re-educate the community the Ordinance exists.<sup>21</sup>

#### *C&D Program Budget*

Program budget was not shared.

## **2.3 UNINCORPORATED PITKIN COUNTY, COLORADO**

#### *C&D Programs & Policies*

Unincorporated Pitkin County adopted a C&D ordinance in 2019 and implemented it in 2020. Projects requiring a building or demolition permit in unincorporated areas of the county must participate in the C&D Debris Recovery Program. The C&D's program goals are to extend the life of Pitkin County's landfill and to recover materials from the landfill. Prior to obtaining a building permit, contractors must sign a Recoverable Materials Diversion Acknowledgement form and pay a refundable Material Diversion Compliance

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<sup>19</sup> "Cardboard Disposal Ban, Now What?" City of Fort Collins, <https://www.fcgov.com/recycling/pdf/cardboard-disposal-ban.pdf?1384553584=>

<sup>20</sup> Zero Waste Associates. Road to Zero Waste Plan - Fort Collins, Colorado. [https://www.fcgov.com/recycling/pdf/RZW\\_Report\\_Jan2014.pdf?1391705638](https://www.fcgov.com/recycling/pdf/RZW_Report_Jan2014.pdf?1391705638). Page ii. 2013.

<sup>21</sup> Based on conversations with Fort Collins Senior Environmental Specialist.



Deposit priced at \$1,000 per ton of waste generated.<sup>22</sup> For example, if a demolition project were to estimate 50,000 tons of debris will be generated by demolition activity, then \$50,000 must be collected by the Solid Waste Center. The C&D Specialist follows up with contractors to ensure affected projects are correctly estimated. The Materials Diversion Acknowledgement form and the Compliance Deposit must be collected before a permit can proceed to "Building Review" with the county's Building Department.<sup>23</sup> Contractors who do not pay a deposit nor submit the Acknowledgement form will not receive a permit to proceed with demolition.

All affected projects must register on Green Halo, a customizable Materials Management tracking software that allows contractors, recyclers, and other entities to comply with local, state and federal recycling guidelines.<sup>24</sup> The County subscribes to the software and provides access to contractors and builders.

Pitkin County's largest C&D material streams are concrete, rock, dirt/sand/gravel, which accounts for 55-60% of the program's overall diversion rate. The program's overall diversion rate hovers between 70-75%, but because some projects had exceptionally high levels of concrete and other aggregates, the overall waste diversion rate for C&D projects in unincorporated Pitkin County is currently 84.56%.<sup>25</sup>

Figure 2 - Pitkin County Solid Waste Center Concrete and Rock Disposal Site



### *C&D Disposal Facilities*

Pitkin's Solid Waste Center accepts C&D material as well as clean wood/lumber, green waste/yard waste, scrap metal, and cardboard. Concrete and other aggregates are crushed on-site once per year. The cost to do so ranges from \$250,000-\$300,000 and the process can take a couple months to complete since the Solid Waste Center averages 2,000 tons or more per year in concrete and other aggregates. The Center

<sup>22</sup> "How to Calculate the Diversion Compliance Deposit." Pitkin County, <https://static1.squarespace.com/static/5af283bdfcf7fd4b0e042c20/t/6054e870d7fe6973f242b9e3/1616177266013/How+to+Calculate+My+DCD.pdf>.

<sup>23</sup> "Before Permit Issuance." Pitkin County, <https://www.landfillrules.com/before-permit-issuance>.

<sup>24</sup> Visit [Green Halo Systems](#).

<sup>25</sup> Based on conversations with Pitkin County's C&D Specialist and current Green Halo data.

has seen 8,229 tons of concrete in 2022.<sup>26</sup> The County then resells the crushed concrete as a final product for use. See Figure 2 for Pitkin's concrete and aggregate crushing operation. Wood waste is another material the Solid Waste Center processes and resells to the public.<sup>27</sup> The Center takes clean pallets and dimensional lumber, grinds the material into wood chips, and resells the product to the public.

Lastly, the Solid Waste Center utilizes a tiered pricing structure for C&D disposal. Disposal prices are based on tons of waste generated by jobsites and whether dumpster loads are contaminated. Mixed C&D loads are charged more than source-separated loads. A load that has mixed C&D recyclables and trash is charged the highest disposal rate of \$198.25/ton. The tier structure was implemented to encourage diversion. Disposal rates are tracked in the county's diversion tracking software, Green Halo. The tracking system monitors disposal amounts and notifies customers when they reach a tier limit. Once a tier limit has been reached, the scale system charges at the next higher tier tipping fee.<sup>28</sup> See Table 1 below for Pitkin County's tier C&D price structure.

TABLE 1: PITKIN COUNTY, CO., C&D DISPOSAL TIER PRICING		
TIER	COST PER TON	MIXED C & D TIER TONNAGE RANGE
1	\$98.25 /TON	0-30 TONS
2	\$118.25 /TON	31-60 TONS
3	\$138.25 /TON	61 TONS OR MORE
4	\$198.25 /TON	ALL MIXED LOADS (TRASH + RECOVERABLES)

Pitkin County and the surrounding areas do have a small reuse market and a couple reuse stores such as Habitat for Humanity, but overall there is not a very strong reuse market in the area. To challenge this, the Solid Waste Center has the "Motherlode Mercantile" which it opened in June of 2022. It's a material and item drop-and-swap located at the Solid Waste Center. The public can donate and purchase gently used items and materials that otherwise might have been thrown away.

<sup>26</sup> Based on conversations with Pitkin County's C&D Specialist.

<sup>27</sup> Based on conversations with Pitkin County's Solid Waste Director.

<sup>28</sup> "Construction & Demolition Debris." Pitkin County, <https://www.landfillrules.com/construction-and-demolition-debris>.

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### *C&D Program Staff*

Pitkin County hired a C&D Specialist in 2020 to oversee the C&D diversion program. He currently reviews all C&D program documents, collects and refunds deposits, visits project sites, and provides quarterly trainings on the program and C&D disposal. The Motherlode Mercantile has one person who oversees the donation and resell operation. This person accepts, prices, and sells all items as well as determines what items are acceptable based on the Solid Waste Center's guidelines.

### *C&D Program Budget*

The C&D Specialist had a hiring range of \$50,000-\$70,000 and the Motherlode Mercantile budget was not available.

## **2.4 HENNEPIN COUNTY, MINNESOTA**

### *C&D Programs & Policies*

The Minnesota Pollution Control Agency has a focus on extending the life of existing commercial and residential structures and the reuse of building materials. In Minnesota, 90 percent of construction and demolition debris is generated by commercial and residential redevelopment.<sup>29</sup> Hennepin County, Minnesota has worked with its local jurisdictions and the MPCA to implement an effective C&D waste diversion program without developing or enforcing C&D waste diversion policies or ordinances.

In 2020, Hennepin County introduced deconstruction and reuse grants for contractors and homeowners to incentivize deconstruction projects and reuse of construction materials. To date, Hennepin County has awarded \$60,000 in C&D grant funding to 40 projects.<sup>30</sup>

Hennepin County does not require certain materials to be diverted and tracked, nor does the County require a Material Diversion Compliance Deposit or a Construction Materials Management Plan. County staff does conduct pre-demolition inspections of residential and commercial properties to help ensure regulated materials are removed prior to demolition. A follow up inspection is generally not required.<sup>31</sup>

Hennepin County has a landfill diversion rate of 42% and had a C&D

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<sup>29</sup> "Managing Building Materials." Minnesota Pollution Control Agency, <https://www.pca.state.mn.us/air-water-land-climate/managing-building-materials>.

<sup>30</sup> Based on conversations with Hennepin County's Environmental Specialist.

<sup>31</sup> Based on conversations with Hennepin County's Environmental Specialist.

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diversion rate of 30% in 2013.<sup>32</sup>

### *C&D Disposal Facilities*

A secondary goal of providing Resource Recovery grants is to support local and state reuse markets and to increase awareness of deconstruction. Minnesota and Hennepin County have a number of reuse stores and strong markets for most C&D reuse items. However, a major challenge to the state's reuse market can be an occasional surplus of inventory.<sup>33</sup>

There are two privately owned and operated C&D recycling facilities in Hennepin County, and neither could be reached for comment on material and tonnage collection, material diversion, and operating costs.

### *C&D Program Staff*

Currently, the County employs only one Environmental Specialist, and she conducts one to three site inspections a month. She reports that the County is not ready to implement ordinances or policies that mandate C&D waste diversion and recovery.<sup>34</sup>

### *C&D Program Budget*

The overall program's cost is estimated to be \$200,000 and includes grant funding and funds for one employee and marketing efforts.<sup>35</sup>

## **2.5 AUSTIN, TEXAS**

### *C&D Programs & Policies*

Austin regulates all single-family, multi-family, and commercial C&D projects 5,000 square feet and larger; in practice, this has meant that most affected projects are commercial.

The ordinance was adopted in 2016, and waste diversion mandates were implemented in two phases: additions and remodels in 2016 and demolition projects in 2019.<sup>36</sup> C&D waste diversion is part of the City's Resource Recovery Master Plan, which set a goal of achieving zero waste by 2040. As of now, Austin's diversion rate hovers around 42% with C&D program diversion to be between 40-50%.<sup>37</sup>

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<sup>32</sup> Foth. Construction & Demolition Diversion Capacity Study. Page 6. 2015.

<sup>33</sup> Based on conversations with Hennepin County's Environmental Specialist.

<sup>34</sup> Based on conversations with Hennepin County's Environmental Specialist.

<sup>35</sup> Based on conversations with Hennepin County's Environmental Specialist.

<sup>36</sup> "Zero Waste by 2040." City of Austin, <https://www.austintexas.gov/zerowaste>.

<sup>37</sup> Based on conversations with Austin's Conservation Manager.

Affected C&D projects must divert 50% of waste or dispose no more than 2.5 pounds of trash per square foot. Even though Austin adopted the ordinance in 2016, enforcement has been little to non-existent and contractor reporting has been voluntary until a few years ago. A 2020 proposal to increase the required waste diversion of 50% to 75% for C&D projects did not pass.<sup>38</sup>

To address the lack of reporting and municipal enforcement, City management began exploring C&D software programs in late 2020.

Now, the city now requires all affected projects to register on Re-TRAC, a web-based software that organizes, manages, and measures municipal waste and recycling programs.<sup>39</sup>

A Final Construction Recycling Report must be submitted upon final inspection request. The City considered implementing a Material Diversion Compliance Deposit but learned they did not have the legal authority to do so.<sup>40</sup>

### *C&D Disposal Facilities*

There are five main C&D recycling processors in Austin. Most are privately owned and operated. Austin has robust markets for concrete/aggregate, metals, cardboard, plastics (rigid), and lumber.<sup>41</sup> Austin also has at least five regional reuse centers, and the City created an interactive Reuse Directory to connect the community to resources for donation, resale, rental, and repair.<sup>42</sup>

### *C&D Program Staff*

Two new staff members were recently hired to form a Construction & Demolition Recycling Compliance Team. The Conservation Manager oversees these roles.

### *C&D Program Budget*

The City's C&D diversion program cost were not disclosed but is estimated to cost between \$300,000-\$400,000 annually. These figures include staffing, marketing, and the city's partnership with Re-TRAC.<sup>43</sup>

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<sup>38</sup> "Ordinance NO. 20151119-098." City of Austin, <https://www.austintexas.gov/edims/document.cfm?id=244998>

<sup>39</sup> Visit Austin's Re-TRAC site: <https://connect.re-trac.com/registration/austin-cdordinance>.

<sup>40</sup> Based on conversations with Austin's Conservation Manager.

<sup>41</sup> Burns and McDonald." Economic Impact Study on C&D Diversion Requirements.

[https://www.austintexas.gov/sites/default/files/files/FINAL%20Economic%20Impact%20Study%20on%20C%26D%20Diversion%20Requirements\\_06-02-20.pdf](https://www.austintexas.gov/sites/default/files/files/FINAL%20Economic%20Impact%20Study%20on%20C%26D%20Diversion%20Requirements_06-02-20.pdf). ES-5 and ES-6. 2020.

<sup>42</sup> Visit Austin's Reuse Directory: <https://austinreusedirectory.com/>.

<sup>43</sup> Based on conversations with Austin's Conservation Manager.

# 3.0 COMMUNITY COMPARISONS

The following four tables show the similarities and differences these communities share regarding their C&D policies and programs.

**Table 2: C&D Communities Comparison Chart**

COMMUNITY	MATERIAL DISPOSAL BAN(S)	CONSTRUCTION MATERIALS MANAGEMENT PLAN	RESOURCE RECOVERY GRANTS	C& D MATERIAL DIVERSION ORDINANCE	MATERIAL COMPLIANCE DEPOSIT	DISPOSAL PRICING STRUCTURE	ZERO WASTE/ CLIMATE/ SUSTAINABILITY PLAN	COMMUNITY C& D DIVERSION RATES	COMMUNITY OVERALL DIVERSION RATES
PITKIN COUNTY, CO	✗	✓	✗	✓	✓	✓	✓	70 -75%	38%
BOULDER, CO	✗	✓	✗	✓	✓	✗	✓	70 -80%	44%
FORT COLLINS, CO	✓	✓	✗	✓	✗	✗	✓	CITY HAS NOT BEEN TRACKING	51%
AUSTIN, TX	✗	✓	✗	✓	✗	✗	✓	40 -50%	42%
HENNEPIN COUNTY, MN	✗	✗	✓	✗	✗	✗	✓	30-35%	42%

**Table 3: Communities with Reuse Markets**

COMMUNITY	ITEM DONATIONS	RECLAIMED BUILDING MATERIALS
PITKIN COUNTY, CO	✓	✗
BOULDER, CO	✓	✓
FORT COLLINS, CO	✓	✓
AUSTIN, TX	✓	✓
HENNEPIN COUNTY, MN	✓	✓

**Table 4: C&D Materials Accepted for Recycling and Recovery at Communities**

COMMUNITY	SCRAP METAL	CONCRETE/ AGGREGATE/ ASPHALT	UNTREATED WOOD/ LUMBER	PLASTIC (RIGID)	SHINGLES	GYPSUM	CARDBOARD
PITKIN COUNTY, CO	✓	✓	✓	✗	✗	✗	✓
CITY OF BOULDER, CO	✓	✓	✓	✓	✗	✗	✓
CITY OF FORT COLLINS, CO	✓	✓	✓	✗	✗	✗	✓
CITY OF AUSTIN, TX	✓	✓	✓	✓	✗	✗	✓
HENNEPIN COUNTY, MN	✓	✓	✓	✗	✗	✗	✓

**Table 5: Communities with Material End-Market Solutions**

PITKIN COUNTY, CO	✓	✓	✓	✗	✗	✗	✓
CITY OF CO	✓	✓	✓	✓	✗	✗	✓
CITY OF FORT COLLINS, CO	✓	✓	✓	✗	✗	✗	✓
CITY OF TX	✓	✓	✓	✓	✗	✗	✓
HENNEPIN COUNTY, MN	✓	✓	✓	✗	✗	✗	✓



# **Appendix C**

## **Stakeholder Summaries**

# Summit County 5-Year C&D Plan: C&D Project Stakeholder Summaries



Prepared For:  
Jen Schenk  
The High Country Conservation Center  
Aaron Byrne  
SCRAP

Prepared By:  
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VERT Sites LLC

November 2022

## Project Stakeholders

1. SCRAP
2. Towns
3. Contractors and Builders
4. Haulers
5. Zero Waste Task Force
6. HC3 (summary is not applicable)

### 1. SCRAP

#### ***Current Operations***

VERT Sites and HC3 took a tour of the SCRAP in September of 2022 to view current C&D operations.

The SCRAP is roughly 400 acres with an anticipated closing date of 2054. The SCRAP currently has one dual-stream MRF with a new a single-stream recycling facility being constructed. In addition, a new scale and gatehouse are also under construction.

The County has a Designated Disposal Site ordinance for materials but often allows recyclables such as scrap metal, asphalt, and concrete to leave as well as other approved materials.

Most of the C&D debris entering the SCRAP is loose tonnage that is mixed. C&D is currently not separated at the SCRAP and the facility does not have equipment for C&D material sorting.

Scrap metal and concrete are often received as source-separated while other C&D materials are often received mixed. Mixed C&D materials include cardboard, lumber, asphalt, concrete, pallets, with metals and cardboard sometimes mixed in.

The SCRAP's biggest potential for C&D diversion is cardboard and scrap metal. These 2 material streams have been the top streams the past 4 years. The 2018 Waste Audit is additional data that supports this claim.

According to the SCRAP, C&D loose tonnage disposal typically spikes between April/May through October/November and subsides some October – February.

The SCRAP currently accepts and recycles these C&D materials:

- Scrap Metal
- Cardboard
- Concrete (clean, free of rebar and asbestos)
- Slash/yard trimmings

The SCRAP currently accepts these C&D materials for future recycling and processing:

- Dimensional Lumber
- Pallets
- Asphalt
- Concrete (clean, free of rebar and asbestos)

## **Possible SCRAP C&D Programs**

### **1. Concrete Crushing/Reuse**

The County has been able to divert concrete, asphalt, dirt, and rocks with Peak Materials operations close by. Peak accepts asphalt to repurpose and sell CDOT approved hot and warm mix asphalt to the public. Peak's backfilling operation is expected to be completed in 5-6 years. The SCRAP will therefore have to plan to receive more of these materials. A concrete recycling program is possible, and the SCRAP considers it would take 3-5 years to implement. For the program to be successful, materials must be clean and additional equipment and operators will be needed. Contaminated concrete is not accepted at the SCRAP and concrete with asbestos has been an important concern for the facility.

### **2. Wood Chip Program: Dimensional Lumber/Clean Wood**



It is projected that the SCRAP can potentially create a pallet recycling and a dimensional lumber recycling program soon (2-3 years). The SCRAP, haulers, and contractors see the value in such a program. While there might not space near the current pallet collection area, the SCRAP can investigate additional areas where an operation can go.

### **3. Information and Data Management**

The SCRAP currently cannot track all materials, material streams, and material sector generators manually. The SCRAP will potentially be able to have improved tracking and data management opportunities with the new scale house.

Additional cost will be associated for data management and tracking. For example, Green Halo charges Pitkin County \$99/month and \$3 per resident. For Summit County, then, the cost could be between \$90,000 - \$100,000 annually.

## **2. Towns**

HC3, VERT Sites, Summit County, and local Summit County towns held a 1-hour Zoom meeting on November 7, 2022. The towns were provided the Policies and Programs report for review.

Six programs and policies were presented to town building and permitting departments. Below are the findings from each town and the stakeholder results.

### ***Breckenridge Representative***

- Expressed concerns about interdepartmental crossover and additional duties. Overall, the town representative believes the town supports diverting more materials from Breckenridge C&D projects.
- Town projects currently divert concrete and asphalt to Peak Materials through their contractors.
- Did not express interest in a diversion deposit program.
- Expressed high interest in Construction Materials Management Plans.

### ***Silverthorne Representative***

- Expressed high interest in a CMMP and believes it is a good starting point for the county to consider.

### ***Dillon Representative***

- Expressed high level of concern of a C&D program implementation due to being a department of one.

### ***Frisco Representative***

- Believes a CMMP is the most attractive program to begin a C&D policy or program but is curious how it will be enforced, i.e., haulers, towns, county enforcement.

### ***Summit County Representative***

- The County's Planning Director expressed concerns on policy interactions between departments – building vs. planning and the staff needed for program implementation.

***The one common concern all towns shared:***

***Staff for compliance and implementation.***

***The one common program all support:***

***Construction Materials Management Plans for C&D projects***

## **3. Contractors and Builders**

### ***Local Builders***

VERT Sites met with 3 local builders: Iron Forest Builders, Campbell Construction, and Summit Homes Construction. VERT Sites also spoke with Gorman USA about their new construction housing project, Alta Verde II, starting in the spring of 2023.

## Iron Forest

VERT Sites met with Iron Forest Builders at 3 sites, all located in the Peak 7 neighborhood in Breckenridge. 2 sites were a remodel/addition, and one site was a new construction build. All sites were residential projects. Iron Forest primarily builds residential homes, additions, and remodels.

### *Discussion Points*

- Per HOA provisions, only 1 dumpster is allowed per site on Peak 7.
- Illegal dumping has been a problem for Iron Forest at these 3 sites and their other sites.
- Town regulations on having dumpsters on roadways.
- Framing materials (dimensional lumber) are their biggest issue and their number 1 jobsite material they use.
- Expressed interest in a dumpster at recycling centers for dimensional lumber collection.
- Typically, their sites have anywhere from 15-18 rolloff services and they usually use 1 rolloff for all jobsite material disposal.
- It can be harder in the winter but it doesn't slow construction down.
- An incentive program might be a good place to start.
- Typically, do not generate a rolloff's worth of cardboard at their sites.

### *Hauling & Disposal*

Iron Forest typically hires a C&D hauler for material disposal.



Pictured to your left are Iron Forest dumpsters at 3 of their jobsites on Peak 7. Per HOA rules, only 1 dumpster is allowed per project site.

## Campbell Construction

VERT Sites met with Campbell Construction at a Highlands remodel project in Breckenridge in early October.

Campbell Construction builds residential homes, remodels, and additions as well as multi-family commercial construction units. They are one of the largest local builders and developers along with Summit Homes Construction.

### *Discussion Points*

- Jobsite space issues due to town and HOA regulations
- Jobsite space issues due to weather
- Recycle metals either at the recycle centers or hold on to recycle down in Denver
- Expressed interest in a building reuse center but not expressed interest in utilizing one for clients

- Scrap wood is not usable wood. They tend to either reuse lumber as a heat source for homes or toss out. Would like to be able to recycle wood
- Support the county's effort in C&D waste diversion ordinance
- Shared that most contractors need to be forced to divert or be incentivized to do so

### *Hauling & Disposal*

Campbell Construction utilizes commercial C&D haulers as well as hauls their own jobsite materials and loads. They have various trailer sizes for jobsites and material loads.



At this specific jobsite located in the Highlands in Breckenridge, Campbell is not allowed to have a dumpster on the road. This is a home remodel project. There are clear signs of space issues between materials, a trailer for trash, work, and not pictured portable sanitation. A dumpster in the driveway is not feasible given other project needs so the contractor self-hauls trash in their trailer.

### **Summit Homes Construction**

VERT Sites, along with HC3, was able to meet and see Summit Homes Construction newest multi-family residential construction project in Silverthorne.

Summit Homes Construction is a residential builder and remodeler, and they also build multi-family construction projects and developments. Smith Ranch is their latest multi-family neighborhood development project.

### *Discussion Points*

- Jobsite space issues due to weather, materials, shipments, and project phases. It was also mentioned that crew vehicles can create issues as well.
- Do have extra scrap wood due to framing and will use as a heat source for homes or throw away.
- Express language barrier concerns,
- Dumpsters can also be an issue with services due to space, e.g., car parked in front of it.
- Expressed interest in cardboard recycling from projects if possible.
- Wood and cardboard are their biggest materials they can divert.

## Hauling & Disposal

Summit Homes uses commercial haulers for their materials



Summit Homes construction site in Silverthorne. 6<sup>th</sup> and Blue Crossing project.

## Contractor Survey

The C&D Project created and administered a 9-question survey to local builders and contractors. There were 54 completed surveys with a total of 67 overall respondents. Below are survey results.

- New homes, remodels, and additions make up the dominant builds in the county. Commercial construction is second followed by commercial multi-family.
- If possible, 61% responded that they donate unwanted items from remodels.
- 50% of the responders self-haul materials to the SCRAP and 56% self-haul recycling to the local recycle centers.
- 41% of contractors responded that they will sometimes reuse building materials.
- 52 responded that they recycle scrap metal and cardboard.
- 54 responded that they could recycle scrap metal, cardboard, dimensional lumber, and concrete/aggregates/asphalt.
- 62 responded with a total of 87% saying they would like to recycle more at their jobsites.

## Contractor Challenges (based on survey results)

- Cost (disposal, labor, transportation)
- Transportation (getting service on time, taking materials)
- Space (HOA's, weather, towns, materials, trade partners)
- Training (English and Spanish)
- Education (knowing what they can divert)



## 4. Haulers

Summit County has 3 main commercial C&D haulers: Summit Rolloffs, Timberline Disposal & Recycling, and Waste Management. This project identified the most involved haulers with C&D projects to be Summit Rolloffs and Timberline Disposal & Recycling.

This section will focus mostly on commercial haulers but it is important to keep in mind that many contractors self-haul materials to SCRAP, recycle centers, and outside the county (scrap metal to Denver).

The Project's haulers were interviewed and asked numerous questions on C&D disposal. Below are the results.

- Both haulers can and will take materials to Peak Materials
- Both haulers can provide multiple dumpster sizes for material streams and items
- Both haulers provide dumpsters for C&D recycling
- Both haulers can provide data to contractors, i.e., tonnage reports
- Haulers cannot provide compliance or enforcement at jobsites (their sole purpose is to haul materials from Point A to Point B)
- Based on what haulers are seeing, lumber should be considered a new recycling opportunity (ZWTF note)

## 5. Zero Waste Task Force

The Zero Waste Task Force met in-person on December 7, 2022. Included in the presentation were five communities with C&D policies and/or programs in place, as well as six policies and/or programs to consider for potential implementation.

The group was provided the Influential Communities Report for review.

A breakout session was designed based on input from the Town and County Stakeholder meeting to gather feedback on diversion opportunities. Feedback from each group is below.

### *Breakout Group 1: C&D Diversion Ordinance and Construction Materials Management Plans*

The Diversion Ordinance and CMMP group determined an ordinance and a CMMP would yield a high diversion potential if implemented correctly and that these 2 strategies would be the most for towns to implement.

The group shared these concerns for implementation:

- Moral responsibility
- Enforcement
- Compliance
- Infrastructure

Lastly, the group leaned towards an ordinance with a focus on diverting specific materials from jobsites versus material diversion percentage requirements.

### *SCRAP Operations & Program Comments*

The key takeaway from this breakout session is that all 3 haulers expressed how contractors are asking about lumber recycling and all received clarity on what the SCRAP accepts in regards concrete, lumber, and pallets.

There were positive comments from all on a lumber recycling program and the possibility of concrete crushing.

Below are additional notes.

- Aaron noted that the SCRAP has improved tracking opportunities with the new scale house and that additional reporting systems will have a cost. Aaron voiced that SCRAP cannot currently track everything manually.
- SCRAP wants to know if the contractors will be able to separate materials and haulers want to know how to hold the contractors accountable.
- Aaron pointed out that we have 30 years left in the landfill and we need to do something.
- Haulers tracking C&D project requirements is not realistic.
- Timeframe to implement; Short 1-3 years = pallets; Med 3-5 years = concrete

### *Breakout Group 2: SCRAP Operations & Program Comments*

The key takeaway from this breakout session is that all 3 haulers expressed that contractors are inquiring about lumber recycling and all received clarity on what the SCRAP accepts in regard to concrete, lumber, and pallets.

There were positive comments from all on a lumber recycling program and the possibility of concrete crushing.

#### *Breakout Group 2 Notes*

- Aaron noted that the SCRAP has improved tracking opportunities with the new scale house and that additional reporting systems will have a cost. Aaron voiced that SCRAP cannot currently track everything manually.
- SCRAP wants to know if the contractors will be able to separate materials and haulers want to know how to hold the contractors accountable.
- Aaron pointed out that we have 30 years left in the landfill and we need to do something.

### *Breakout Group 3: Material Disposal Ban*

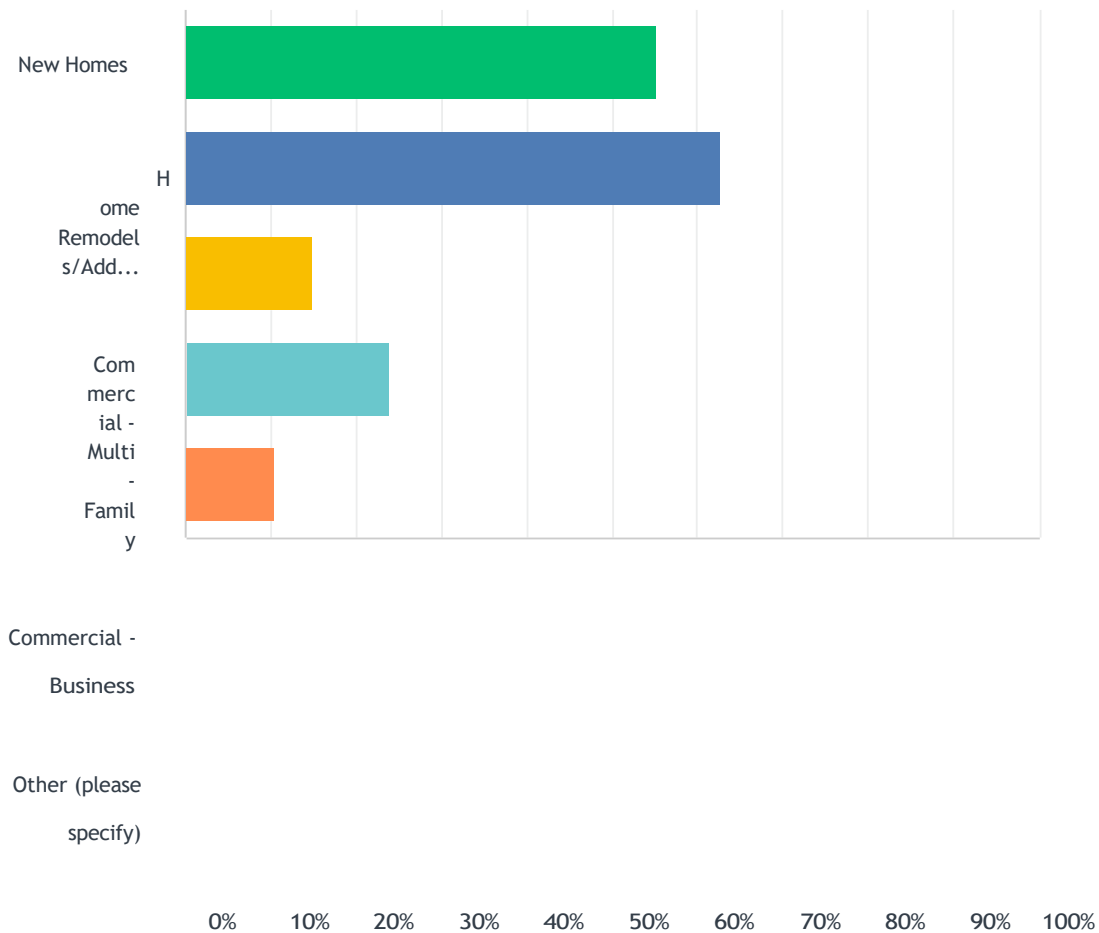
There was little or zero interest for a material disposal ban and this has been taken into consideration for the C&D Action Plan.

# **Appendix D**

## **Contractor Survey Results**

Q1 What type of projects do you predominately build? Check all that apply.

Answered: 67 Skipped: 0



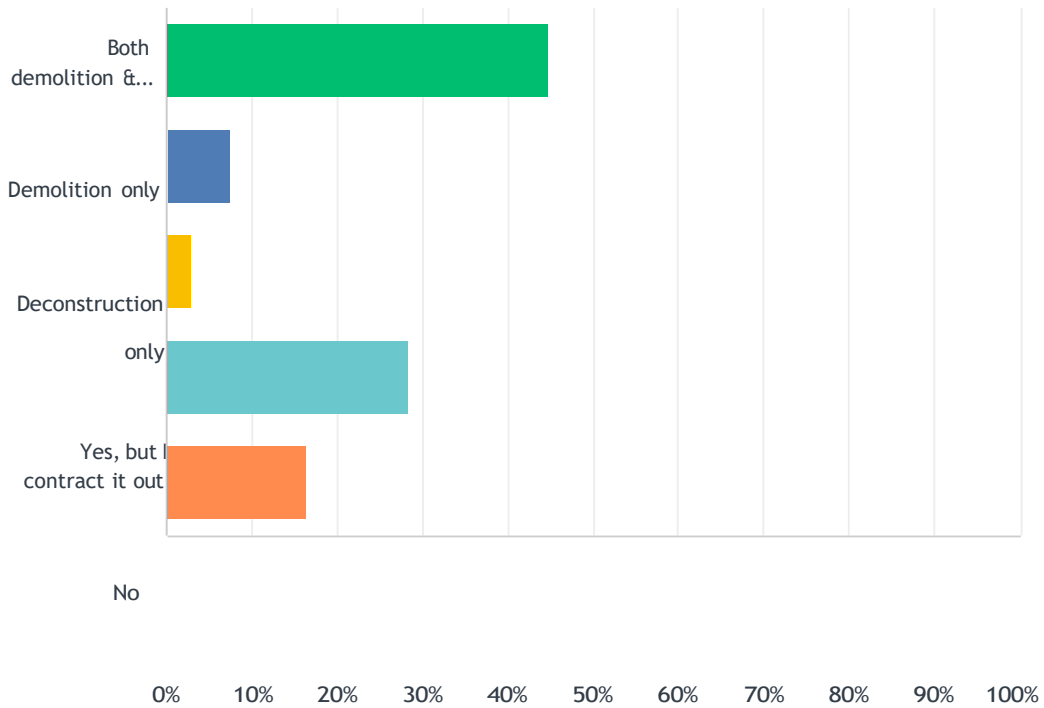
ANSWER CHOICES	RESPONSES	
New Homes	55.22%	37
Home Remodels/Additions	62.69%	42
Commercial - Multi-Family	14.93%	10
Commercial - Business	23.88%	16

Other (please specify) 10.45% 7

Total Respondents: 67

Q2 Do you perform any demolition or deconstruction work?

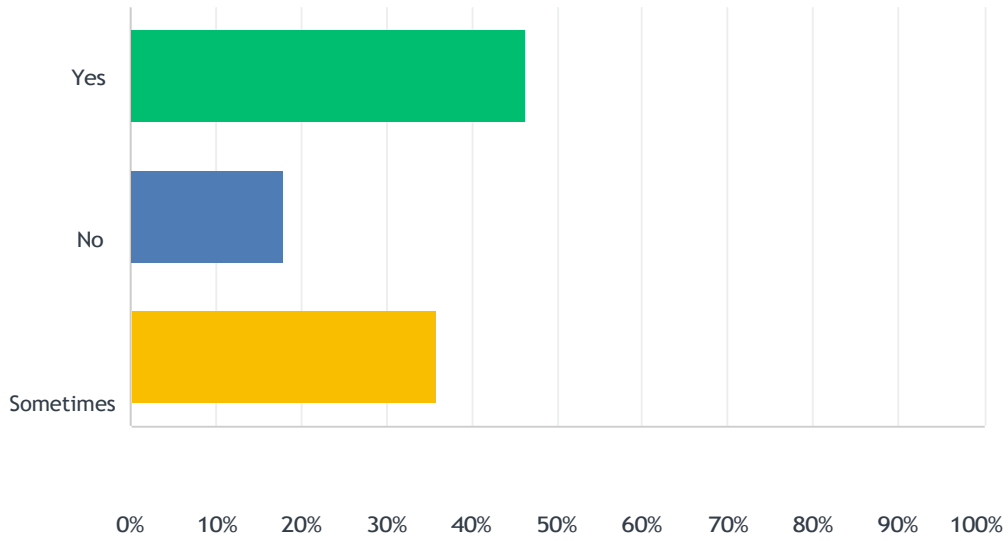
Answered: 67 Skipped: 0



ANSWER CHOICES	RESPONSES	
Both demolition & deconstruction	44.78%	30
Demolition only	7.46%	5
Deconstruction only	2.99%	2
Yes, but I contract it out	28.36%	19
No	16.42%	11
<b>TOTAL</b>		<b>67</b>

### Q3 Do you currently recycle any jobsite materials?

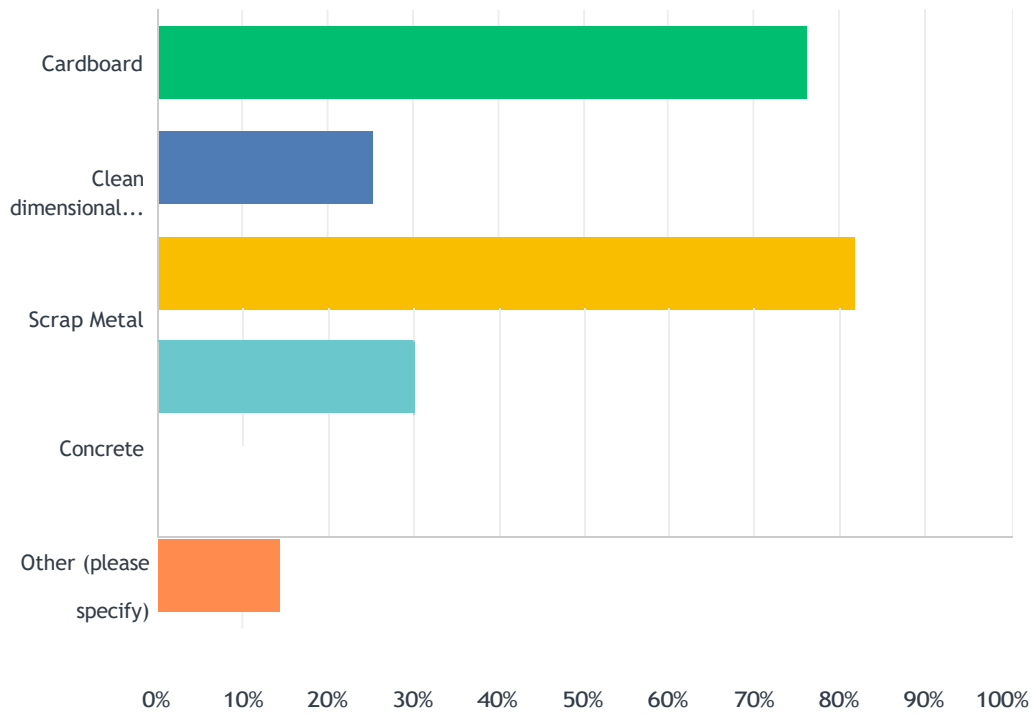
Answered: 67 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	46.27%	31
No	17.91%	12
Sometimes	35.82%	24
<b>TOTAL</b>		<b>67</b>

Q4 Which materials do you recycle? Check all that apply.

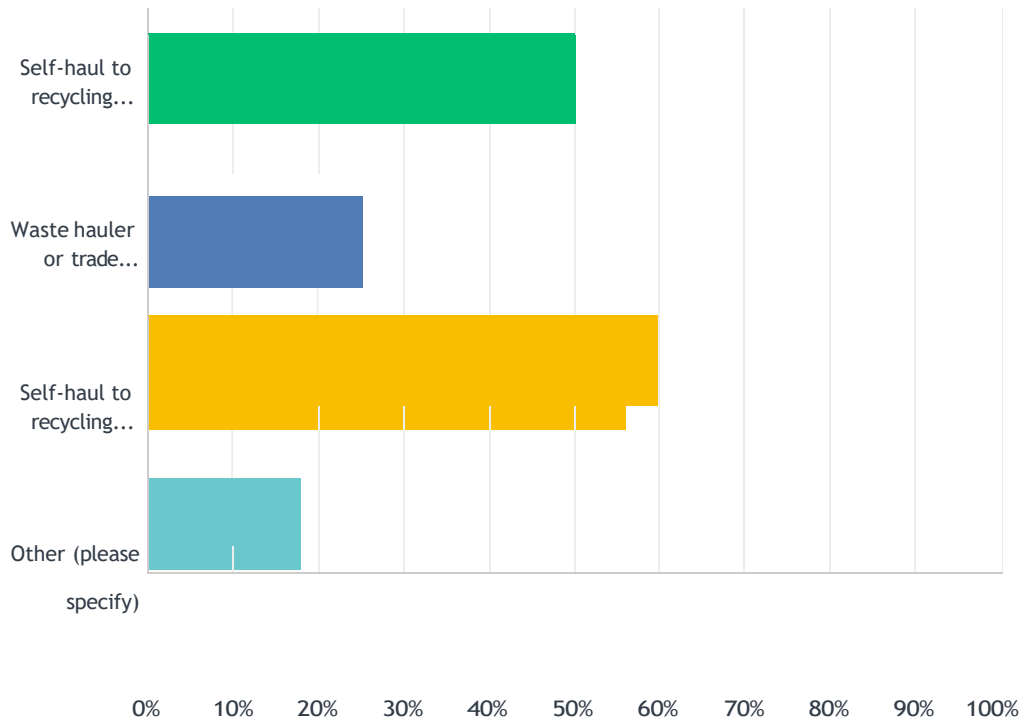
Answered: 55 Skipped: 12



ANSWER CHOICES	RESPONSES	
Cardboard	76.36%	42
Clean dimensional lumber	25.45%	14
Scrap Metal	81.82%	45
Concrete	30.91%	17
Other (please specify)	14.55%	8
Total Respondents: 55		

Q5 How are you recycling these materials? Check all that apply.

Answered: 55 Skipped: 12

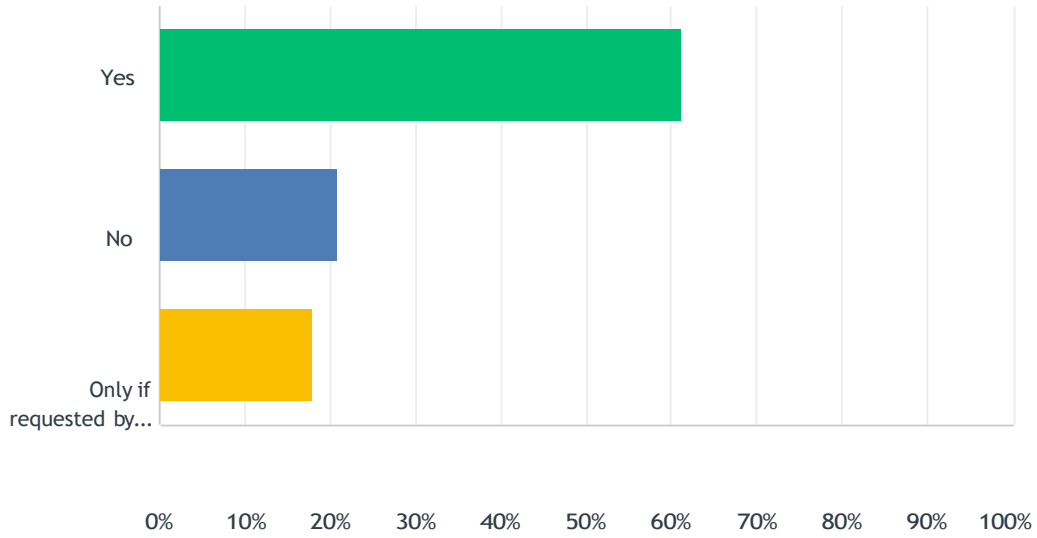


ANSWER CHOICES	RESPONSES	
Self-haul to recycling center at SCRAP (landfill)	50.91%	28
Waste hauler or trade partner takes to recycling center at SCRAP (landfill)	25.45%	14
Self-haul to recycling center(s) in Frisco, Breckenridge, or Silverthorne	56.36%	31
Other (please specify)	18.18%	10
Total Respondents: 55		



Q6 Do you donate unwanted items from home remodel or addition projects before the project begins? (Ex. household goods, furniture, or room essentials the client doesn't want)

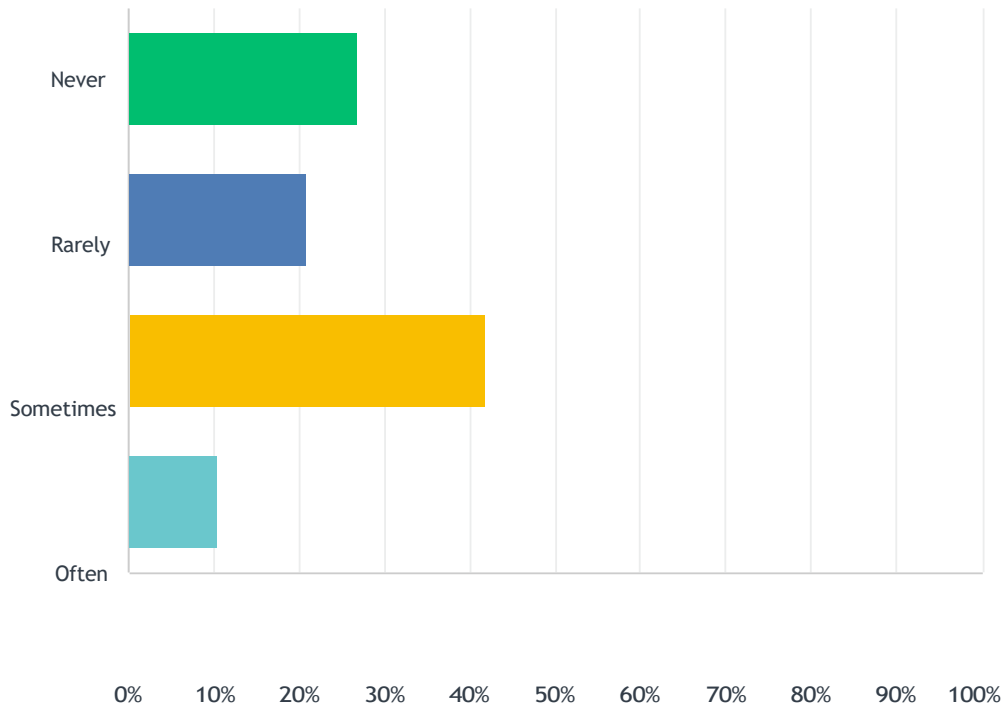
Answered: 67 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	61.19%	41
No	20.90%	14
Only if requested by client	17.91%	12
<b>TOTAL</b>		<b>67</b>

Q7 How frequently do you use repurposed construction materials for home remodels/additions?

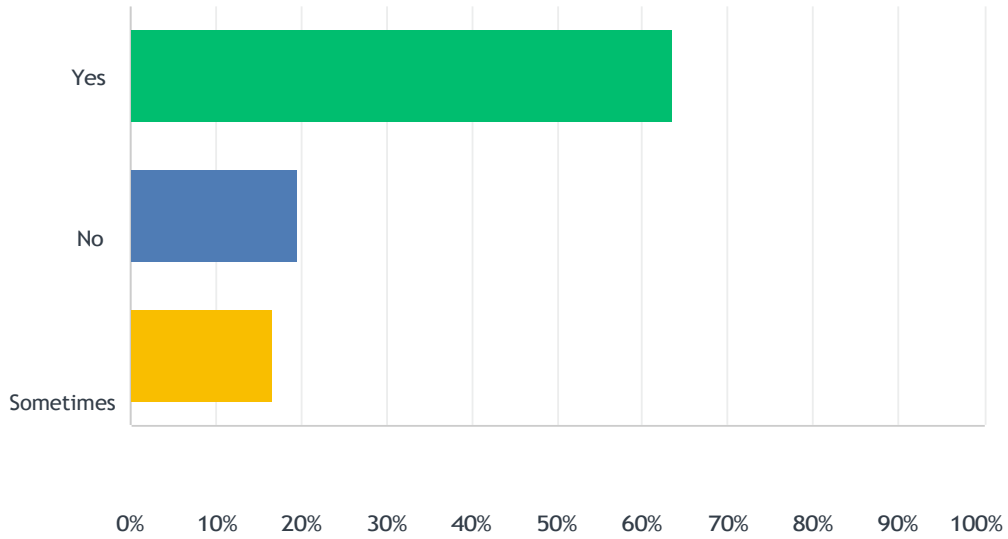
Answered: 67 Skipped: 0



ANSWER CHOICES	RESPONSES	
Never	26.87%	18
Rarely	20.90%	14
Sometimes	41.79%	28
Often	10.45%	7
<b>TOTAL</b>		<b>67</b>

Q8 Do you experience challenges that prevent your team(s) from recycling and recovering more materials?

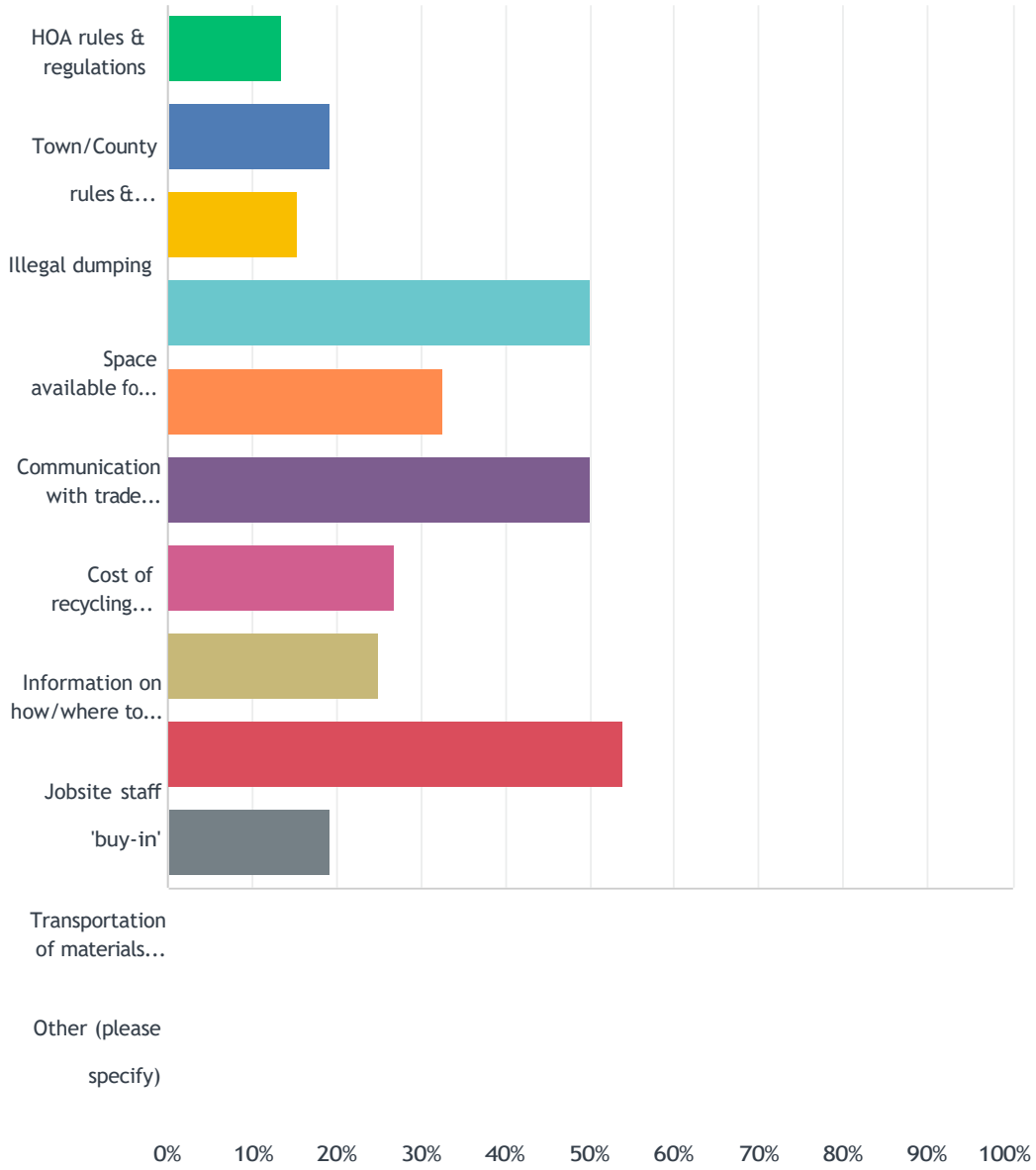
Answered: 66 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	63.64%	42
No	19.70%	13
Sometimes	16.67%	11
<b>TOTAL</b>		<b>66</b>

Q9 What challenges prevent your team(s) from recycling and recovering more materials? Check all that apply.

Answered: 52 Skipped: 15

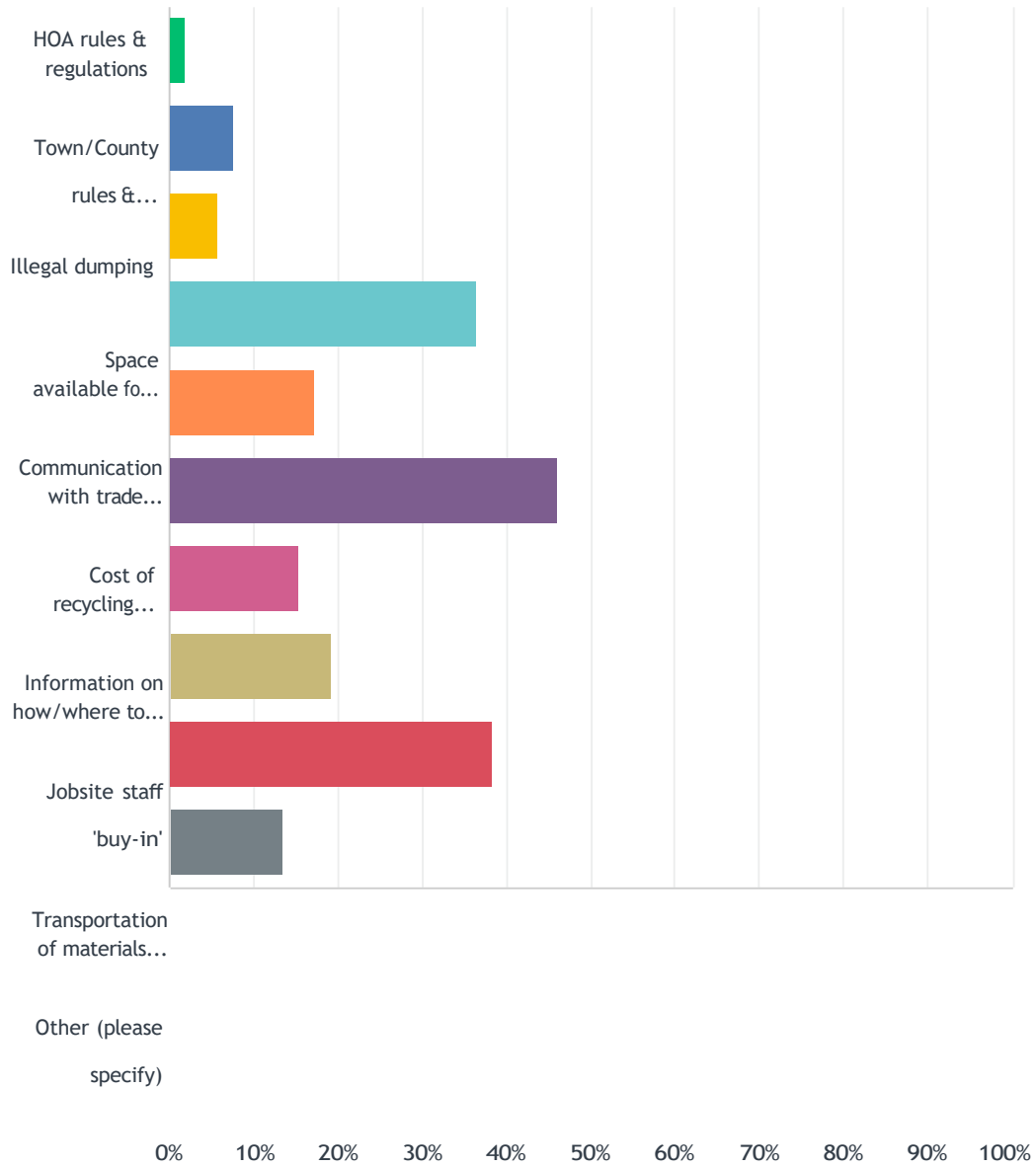


ANSWER CHOICES	RESPONSES	
HOA rules & regulations	13.46%	7
Town/County rules & regulations	19.23%	10
Illegal dumping	15.38%	8
Space available for dumpsters	50.00%	26
Communication with trade partners and subcontractors	32.69%	17
Cost of recycling materials	50.00%	26
Information on how/where to recycle materials	26.92%	14
Jobsite staff 'buy-in'	25.00%	13
Transportation of materials from jobsite to recycle center	53.85%	28
Other (please specify)	19.23%	10

Total Respondents: 52

Q10 Of these challenges, which create the largest barrier for your team(s)? Select up to 3.

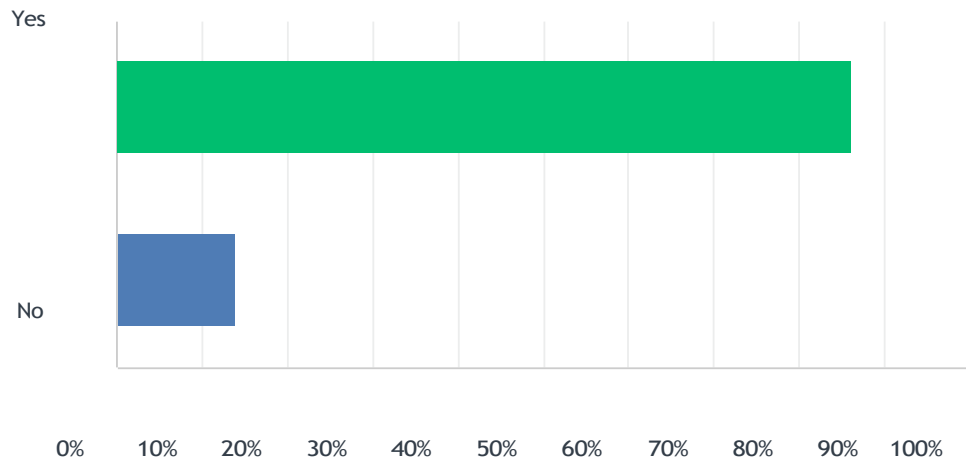
Answered: 52 Skipped: 15



ANSWER CHOICES	RESPONSES	
HOA rules & regulations	1.92%	1
Town/County rules & regulations	7.69%	4
Illegal dumping	5.77%	3
Space available for dumpsters	36.54%	19
Communication with trade partners and subcontractors	17.31%	9
Cost of recycling materials	46.15%	24
Information on how/where to recycle materials	15.38%	8
Jobsite staff 'buy-in'	19.23%	10
Transportation of materials from jobsite to recycle center	38.46%	20
Other (please specify)	13.46%	

Q12 Do you want to recycle (more) materials at your jobsites?

Answered: 65 Skipped: 2

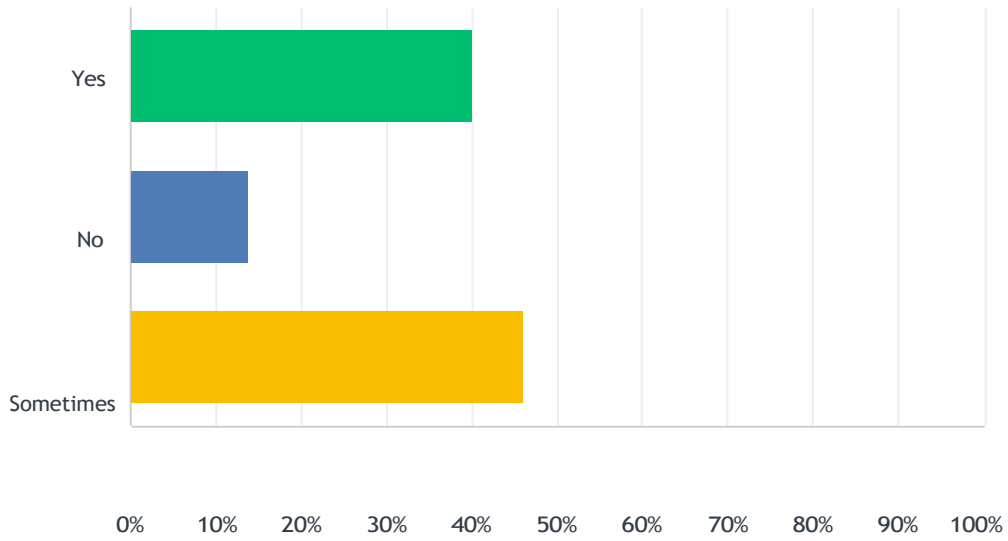


ANSWER CHOICES	RESPONSES	
Yes	86.15%	56
TOTAL		65
No	13.85%	



Q13 Is it possible for your jobsite teams to separate and divert materials from the landfill for recycling or reuse?

Answered: 65 Skipped: 2

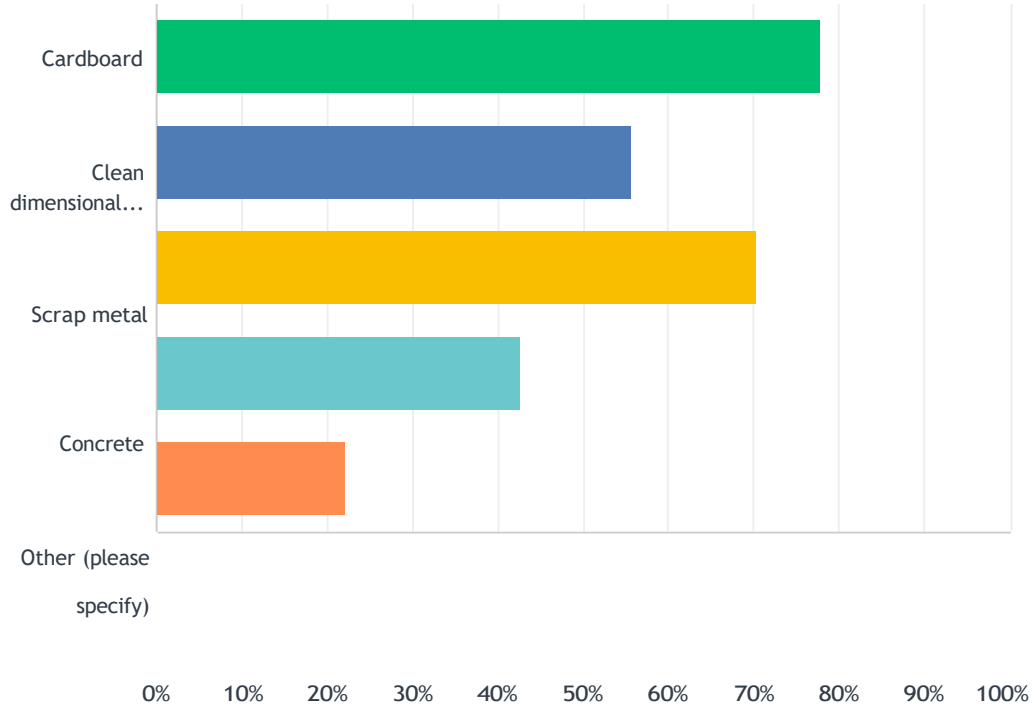


ANSWER CHOICES	RESPONSES	
Yes	40.00%	26
No	13.85%	9
Sometimes	46.15%	30
<b>TOTAL</b>		<b>65</b>

Q14 If you answered yes to the last question, what materials could your jobsite team(s) separate and divert from the landfill for recycling or reuse?

Check all that apply.

Answered: 54 Skipped: 13



ANSWER CHOICES	RESPONSES
Cardboard	77.78% 42
Clean dimensional lumber	55.56% 30
Scrap metal	70.37% 38
Concrete	42.59% 23

Other (please

