

Agenda – August 29, 2023

Attendance: Emily Freeman, Ryan Call, James Gasper, Ally Byzewski, Liz Chapman, Mellik Gorton, Alex Studee, Jesse Masten, Laurie Johnson, Eric Heyboer, Jonathan Wachtel, Anna Perks, Allie Flynn, Alicia Archibald, Eric & Ashley with Urban Machine

Link to General C&D Meeting Recording: <https://youtu.be/Xg1w8AgQDx8>

Meet & Greet (5 minutes)

1. Colorado Stud Company Virtual Tour Video:
<https://youtu.be/bA57080XL70?feature=shared>

Guest Speaker (30 minutes)

Recording of Urban Machine Presentation: <https://youtu.be/-PAH6TQJggw>

1. [Urban Machine](#) - Creating metal-free reclaimed wood using robotics
 - a. Two year old robotics company based in Oakland, CA. 13 people on their team.
2. Focused on clean lumber, not painted or treated. The fifth iteration of their machine is launching in October. Starting to move their machines to MRFs and work sites. Hoping to finish R&D this year and deploy a dozen machines in six areas next year starting Q2, including one in the Boulder-Denver metro area. Urban Machine is looking for optimal locations to put their machines.
3. Designed to clean 10-20,000 board feet per day, depending on the material. 2x4s have the highest number of fasteners per board foot.
4. Question: How big is the machine? Is it movable?
 - a. Takes up about a 3K footprint, including inventory and access. 90ft long, uninterrupted process line. The system is semi-portable and requires a flatbed trailer to move. It could also operate at a central point.
5. The Front Range has many deconstruction ordinances, and our wood is primarily being mulched and turned into animal bedding.
6. UM is not selling the hardware for a couple of years because they want to fine-tune it and don't want to sell people obsolete hardware. They will offer a subscription model where the price of using their machine is per board foot processed.
7. Anna Perks: Some major cities submitted for EPA grants in the spring, and expect to hear results in the fall. Most CO grants don't allow for renting equipment.
8. Liz: What end markets are you working with now? What is the cost savings?
 - a. Architecture operations for older, darker timber. Also working with UC Berkley.
 - b. UM is to compete with virgin lumber. One appeal is that reclaimed lumber doesn't need to be trucked across the country, and they have a much smaller

environmental impact. However, reclaimed lumber is harder to nail than virgin- screws etc. are fine.

9. Anna: Does your equipment work for lumber that is cracked? Are you having any issue with damaging lumber as you denial it?
 - a. We're starting with human inspection to sort out cracked wood.
 - b. UM is currently researching technology to grade and stamp reclaimed lumber for structural use.
 - c. Wood can crack where there were large fasteners when it goes into the machine but doesn't once it's in.
10. Perks Decon is currently denailing 80% of wood. About 20% with nails can be sold at a low cost. An ADU in Denver was currently built using reclaimed lumber. It depends on who your building inspector is!
 - a. CO Stud Company is stamping some of their lumber because it doesn't already have nails in it, even though it's finger-jointed together.
11. Lakewood's "C&D recycling (not deconstruction) ordinance": Are there markets for structural wood?
 - a. Hard to say now, but more reclaimed wood can only be a good thing. Still working on enforcement, which will help with quantification. Boulder is also working on quantification.

Circular Colorado stakeholder outreach for the CEDC (30 minutes)

Recording of CEDC Presentation: <https://youtu.be/nPKsMWhO-4Q>

1. Kicked off July 1st, HQ'd at the Vartega in Golden. Funded by FRWD and RREO, 60/40 split. Just had their first meeting in La Junta.
2. CC is embracing rural CO and will set up satellite offices, starting with 10hrs/week. Starting in Grand Junction, then CO Springs, then in the mountains and plains.
3. Partnered with RRS, LBA Associates, Paradigm branding, CO Energy Research Collaboratory, NextCycle, and NREL.
 - a. Really trying to figure out transportation, the "Achilles heel" of recycling.
4. Main goals: 1) Create new markets, 2) Expand Existing Markets. Focusing on 3 new and 3 existing markets.
5. Retain Product Ownership. Extend Product Life. Design for Recycling.
6. The Center will focus on project management, recruit managers, logistics, stakeholder engagement, tech assistance, econ modeling, gap analysis.
7. Sample project: Shingle to Shingle, using tech that has been around for 7 years. Also working with Flexible Film in ByBlocks (they presented at NextCycle). Tucson, AZ agreed to buy back blocks. Steam compaction, no extrusion.
8. Question: What does your stakeholder process look like?
 - a. Got to learn about the community. Looking where the gaps are (collection and transport). Manufacturing is tough because of labor and material supply.

9. Question: What about tires?
 - a. It's a need, but CEDC isn't focusing on it yet. Lots of environmental issues. CEDC website hasn't launched yet, which will include a forum for folks to submit solutions. Maybe tires need to be redesigned.
10. Question: How can the C&D Council help facilitate ByBlock connections?
 - a. They need co-location for collections or manufacturing. 10K sqft of warehouse space. Doesn't need heavy industrial zoning. ByBlock can use multiple types of plastics since they're compressed. It can be screwed and nailed into. They're reinforced with rebar.
 - b. <https://www.byfusion.com/byblock/>
 - c. How durable are they? They're being used for trash enclosures.
11. Ask: Go to <https://portstoplains.com/> and learn about it. Trying to create a superhighway to move truck traffic from Mexico to Canada. **CO has shown no interest or even sent a support letter.** There are federal funds to pay for a study. TX and NM are moving forward. All of this traffic would be dumped on I-25. Smart development could help grow the eastern plains. Gov's office is focused on EVs and rails. Hoping to do a webinar or stakeholder meeting soon.
 - a. End markets are one piece of the puzzle, but we really need transportation solutions too.
 - *CEDC Stakeholder meetings scheduled:*
 - Rocky Ford (SE Plains) August 22, 11 am - 1 pm
 - Grand Junction (Western Slope) September 13 (time TBD, likely 11-1)
 - Information from the RC Summit and role of C&D Council (?)
 - "Big stakeholder meeting in Denver early 2024"
 - Some CC folks are going to the Mountain Town Conference.

Policy Toolkit Roadshow Planning (10 minutes)

What kind of outreach do we want to do for our toolkit?

- a. Identify our audiences. Cities that have dedicated sustainability staff. Keep engaging folks who came to the RC Summit. Our toolkit is more geared towards government entities. How about the CO Municipal League? There's a quarterly Front Range sustainability manager meeting that would be a good audience. Also, check for citizen-led sustainability advisory councils.
- b. **We should invite stakeholders, record a webinar, and host it on the website.**
 - i. Should it be a webinar or workshop/roundtable? What's our goal? Get the word out and get folks into this space.
 - ii. Maybe a 30-minute overview and then a workshop session?
- Potentially hosted in Salida alongside the Recycle Colorado Annual Meeting
 - Julie Mach might schedule something. Would anyone want to co-present?

- Alicia and Liz have committed to presenting at the Mountain Town Conference on Thursday (Oct 19?).
- Next FR Sustainability manager meeting will be in Q4, sometime in Golden. Might be a good place to test run the roadshow.
- ICLY (sp?) is global, but headquartered in Denver. Still in development.
- Interest and availability
- Online options through Recycle Colorado
- Roadshow - in person, or virtually?

Recycle Colorado Snack & Share (5 minutes)

- Would like to schedule a future date for C&D. Who wants to participate as a speaker and/or has interesting project(s) or topics to share? Policy Toolkit?
 - Third Thursday of the month starting at noon.
 - Maybe do a June snack and share, and do a Waste No More update.
 - Fort Collins might have C&D updates coming.

Build Reuse (5 minutes)

- Conference in Savannah, GA: February 12 – 14, 2024
 - Speaker submission deadline September 1, 2023 – any interest?
- [Build Reuse Wiki](#)

Member Updates (5 minutes)

- City of Boulder has a deconstruction working group to focus
- Perks completed their largest project yet - 6K sqft, and kept 90% of waste out of the landfill.
- Biochar Now: Looking at land in Weld County for treated wood.
- WNM: Probably not an all-or-nothing deposit system. Looking at diversion percentages by weight. Boulder might be moving away from a deposit system since aggregates are most of the weight.

Next meeting - November 15 from 3:30 - 4:00 p.m.

Waste No More Task Force C&D Recommendations

Recommendation 2: Revise the Performance Requirements for Construction & Demolition

The Waste No More Ordinance as written requires construction projects to divert 100% of all covered materials listed in the Ordinance. In addition to the need to clarify the list of covered materials, the Task Force proposes phasing in performance requirements over a 5-year period based on the percentage (%) of covered materials required to be diverted per project:

- By January 1, 2025: 50% Solid Waste Diversion Goal
- By January 1, 2028: 65% Solid Waste Diversion Goal
- By January 1, 2030: 80% Solid Waste Diversion Goal

Recommendation 3: Establish a Construction & Demolition Refundable Deposit

The Task Force recommends that the city impose a deposit at the time of permit. The deposit would be fully refundable at the end of the project when the contractor submits documentation confirming that the diversion rate was achieved. This deposit system aims to incentivize a high compliance rate without resorting to fees for non-compliance after a construction or demolition project is complete. At that point, it is too late to recover any recyclable materials. To ensure this requirement does not place additional burdens on affordable housing projects or under-resourced businesses, the city should consider opportunities to waive the deposit and/or provide additional support to these sectors.

Recommendation 8: Add Definitions Specific to Construction and Demolition Requirements

The terminology in the ordinance as written is not entirely clear and thus challenging to enforce. The language needs to mirror other sections of code, such as unsafe structures or hazardous materials. This recommendation focuses on revising definitions and which agencies are assigned to implement. The Task Force recommends revising the requirement from “all readily-recyclable concrete, asphalt, clean wood, scrap metal and corrugated cardboard” to be more clearly defined in rules and regulations under the covered list of materials.