



DENVER AMENDMENT PROPOSAL FORM FOR PROPOSALS TO THE 2019 DENVER BUILDING CODE AMENDMENTS AND THE 2021 INTERNATIONAL CODES

DENVER
THE MILE HIGH CITY

2021 CODE DEVELOPMENT CYCLE

1) **Name: Kristen Salinas** **Date: 11/30/2021**
Email: ksalinas@noresco.com **Representing (organization or self): Denver**
City Staff Proposal (check box):

2) One proposal per this document is to be provided with clear and concise information.

Is a separate graphic file provided ("X" to answer): Yes or No

3) Highlight the code and acronym that applies to the proposal

<u>Acronym</u>	<u>Code Name</u>	<u>Acronym</u>	<u>Code Name</u>
DBC-AP	Denver Building Code–Administrative Provisions	IPC	International Plumbing Code
IBC	International Building Code	IRC	International Residential Code
IECC	International Energy Conservation Code	IFGC	International Fuel Gas Code
IEBC	International Existing Building Code	IMC	International Mechanical Code
IFC	International Fire Code	DGC	Denver Green Code

AMENDMENT PROPOSAL

Please provide all the following items in your amendment proposal.

Code Sections/Tables/Figures Proposed for Revision:

901.3.1.2 (9.3.1.2) Construction and Demolition Waste Management Plan (Mandatory)

1001.3.1.10 (10.3.1.10) Construction and Demolition Waste Management (Project Elective)

Proposal:

Revision New Text Delete/Substitute Deletion

(9.3.1.3) Construction and Demolition Waste Management Plan. Prior to issuance of a demolition, roofing or building permit including renovations and additions over 2,500 SF and demolitions over 1,000 SF, a preconstruction waste management plan shall be submitted to the owner and to the AHJ, and conspicuously posted on the construction site. The plan shall:

- a. identify the construction and demolition waste materials expected to be diverted,
- b. determine whether construction and demolition waste materials are to be source-separated or commingled,
- c. identify service providers and designate destination facilities for construction and demolition waste materials generated at the job *site*,
- d. identify the average diversion rate for facilities that accept or process commingled construction and demolition materials. Separate average percentages shall be included for those materials collected by construction and demolition materials processing facilities that end up as *alternative daily cover* and incineration,
- e. Signage in English and Spanish, and
- f. Training for all employees on proper disposal of materials.

Substantive changes to the plan, including changes to hauler, receiving facility, weight or volume increases of 15% or more, shall be subject to prior approval by the building official.

(9.3.1.4) Construction and Demolition Waste Documentation. The following documentation of disposal shall be provided:

- a. A spreadsheet documenting the weight of each material diverted from the landfill and the overall diversion rate filled out by the waste hauler.
- b. Photos of all dumpsters.

1001.3.1.10 (10.3.1.10) Construction and Demolition Waste Management (Project Elective).

1001.3.1.10.1 (10.3.1.10.1) Collection. Specific areas on the construction *site* shall be designated for collection of recyclable and reusable materials. Alternatively, off-site storage and sorting of materials shall be permitted. Diversion efforts shall be tracked throughout the construction process.

1001.3.1.10.1.2 (10.3.1.2) Materials. All concrete, asphalt, masonry, wood, metals and cardboard shall be recycled. For all demolitions, these materials that are free of asbestos and lead paint shall be salvaged or recycled, and where possible, all remaining materials, such as doors, windows, cabinets, fixtures, and wood shall be salvaged or recycled.

1001.3.1.10.2 (10.3.1.10.2) Documentation. Prior to issuance of the final certificate of occupancy, a final construction waste management report documenting compliance with Section 901.3.1 (9.3.1) shall be wet or digitally signed and submitted to the *owner* and *AHJ*.

1001.3.1.10.3(10.3.1.10.3) Recycle chute. New buildings provided with trash chutes or existing buildings renovated that add a new trash chute shall provide an automated sorting combination trash and recycling chute or an additional equivalent chute adjacent to the trash chute for the purpose of recycling. Separate bins shall be provided in the termination room to prevent recycled items from entering the trash bin. Chutes must be appropriately labeled “Landfill/Trash/Garbage” and Recycle”.

City Logo here

Figure 3315.1
CONSTRUCTION WASTE MANAGEMENT PLAN and DOCUMENTATION

Address/Permit #(s): _____

Contact Person: _____ Phone Number: _____

Project Type: New/Alteration Demolition Re-roof

Instructions: Submit this form at the beginning and end of each project (**re-roof projects only require final submittal**). At initial submittal, do not include weights, hauler signatures or documentation. All changes to this plan are subject to prior approval. At project completion resubmit this plan with all fields completed and include the required documentation.

Documentation: Provide documentation from the hauling company and include the project address and services provided. If you hauled the materials yourself, attach tickets from all disposal and recycling facilities.

Electronic submittal: [email address here](#) Questions: Name and phone number here

Material	Company hauling the material (Write "self" if self-hauled)	Facility receiving the material	Total weight of material (Indicate units. Volume okay)
Asphalt, Concrete, Masonry			
Wood			
Metal			
Cardboard			
Other (Please describe)			
Other (Please describe)			
Contaminated Recycling (Do not include as trash. Indicate material)			
Trash, Asphalt Shingles			

I understand that my failure to follow this plan or resubmit this plan could include penalties of over \$2,500 per day of the violation and up to six months in jail. I certify that the above materials include all trash and recycling from my construction site and were handled in the manner described.

Contractor/Owner - Print Name & Signature

Date

Hauler(s) - Print Name & Signature
(Indicate company. If multiple include signature from each)

Date

Supporting Information (Required):

"What's the use of a fine house if you haven't got a tolerable planet to put it on?"
~ Henry David Thoreau

Waste Management Plans for construction, renovation and demolition projects are part of a growing movement to better manage materials and create sustainable communities. Building and demolition activities are integrating "sustainability" or "green" management techniques designed to protect the environment, save resources (including financial resources), and conserve energy to ensure the wellbeing of current and future generations.

Recycling and reusing construction and demolition materials saves landfill space and reduces our community's greenhouse gas emissions. Successful construction and demolition recycling programs are necessary components in helping the community meet its zero waste and climate goals.

The industry average for waste generated at new construction sites is six pounds per square foot. Most of this waste can be put towards another use, or be recycled if proper planning is done within the design phase. The primary objective of these plans is to initially reduce the amount of generated construction waste on projects by requiring all subcontractors and material suppliers to limit quantities of materials and packaging to only those necessary for the project itself.

A construction or demolition waste management plan does not need to be lengthy or complicated to be effective. The plan presented here mimics that of Fort Collins to provide consistency across the front range and to use a plan that has been in use for some time. The plan can be added to over the years to get more specific on material reuse and diversion.

It may be easier and less expensive to divert jobsite waste from the landfill than to dispose of it. Sending materials for reuse often doesn't cost a contractor anything and recycling fees are generally lower than disposal fees.

Contractors can choose to either hire a full-service hauler to collect all trash and recyclables or may haul materials yourself to an appropriate recycling location. The process is made simple by providing a Construction Management Plan document that must be completed for each qualifying project. All qualifying projects will turn in the same documentation, making it easier for plan review, inspection and for the contractors, who will do the same thing on every job. The plan can be adjusted to only deal with demolition, or it can start strong with demolition, new construction and even roofing. All of that is included in this proposal but modifications can be made to reduce the scope.

Because this proposal deals with the building while under construction, we felt the best place to put this was in Chapter 33 Safeguards During Construction and to expand the title to include resource efficiency. This will allow future placement of things like indoor air quality during construction, including VOCs, etc. (See Fort Collins 2018 IBC amendments under Chapter 36 for other things that may be placed in this location)

Bibliography and Access to Materials (as needed when substantiating material is associated with the amendment proposal):

A good way to handle the information can be seen here on Fort Collins' website, that includes requirements and resources.
<https://www.fcgov.com/recycling/constructiondebris.php>
Additional resources:

Construction Waste/Recycling Codes and Policies
Research on what different jurisdictions are doing
Mozingo Code Group LLC, October 2021

A few jurisdictions are wanting to incorporate some type of construction waste and recycling language in their new code adoptions. This research was done in order to find some common language as well as to find out what worked and what didn't, what people would change if they wrote it again, and what resources could be found to assist in the process.

Scottsdale, AZ

In Scottsdale, we have support from our Scottsdale Environmental Advisory Commission to adopt the 2021IgCC as a mandatory code for all new commercial buildings (currently only required for zoning bonuses in downtown and mixed-use zoning districts). We expect to get to city council by 1st quarter of next year.

Regarding construction waste management, we also have support from our Solid Waste Department. I put together the attached Construction and Demo Waste Management Compliance form which is based on forms used in some of the California jurisdictions.

However, I've been getting mixed signals from our local waste management community. I reached out to the two biggest Construction Waste Management companies in the Phoenix area (Waste Management and Republic Services). I was in contact with their regional managers, and they indicated that they didn't have the capacity to handle the volume of construction waste if mandated for all new commercial construction in Scottsdale. This surprised me because I thought they would welcome more business. Maybe this could be an opportunity for the smaller waste management companies. I would be interested in hearing what other cities are encountering. It's mandatory in California.

Below are some of our Scottsdale proposed amendments related post-occupancy recycling for commercial multifamily projects.

Section 901.3.4.1, Recyclables, is amended to read as follows:

901.3.4.1 Recyclables. There shall be areas dedicated to the collection and storage of nonhazardous materials for recycling, including paper, corrugated cardboard, glass, plastics, and metals. Provide built-in or pull-out recycling containers in mailrooms, breakrooms and kitchen/kitchenette areas. Identify site location for refuse/recycling pick up.

901.3.4.2, Reusable goods, is amended to read as follows:

901.3.4.2 Residential Recycling. Provide kitchen cabinet pull-out for not less than two 7-gallon minimum bins in each dwelling unit for collection of trash and recyclable materials. Multifamily buildings more than 3 stories shall be provided with trash and recycling chutes. Multifamily mailrooms and common kitchen/kitchenette areas shall be provided with built-in or pull-out recycling containers. Space shall be allocated for central collection and storage of materials.

SEE ATTACHED CONSTRUCTION WASTE MANAGEMENT PLAN.SCOTTSDALE

Pitkin County, CO

Michael Port, C&D Diversion Specialist, Pitkin County Solid Waste Center, www.LandfillRules.com

SEE ATTACHED PITKIN_C&D+ORDINANCE

SEE ATTACHED PITKIN COUNTY CONSTRUCTION AND DEMOLITION DEBRI DIVERSION GUIDE

Fort Collins, CO

links to construction recycling and waste program website: <https://www.fcgov.com/recycling/constructiondebris.php>, and

IBC code section **3602 Resource efficiency** can be found at: <https://www.fcgov.com/building/files/2018-ibc-amendments.pdf?1553033764>, and

IRC code section **R328 Resource efficiency** can be found at: <https://www.fcgov.com/building/files/2018-irc-amendments.pdf?1553033764>

Lakewood, CO

SEE ATTACHED LAKEWOOD CONSTRUCTION WASTEMANAGEMENT PLAN

King County, WA

[Construction recycling strategies, statistics and technical assistance for green building projects in King County, WA - King County](#)

Clovis, NM

SEE ATTACHED CONSTRUCTION WASTE MANAGEMENT PLAN_wmp_CLOVIS

Other Comments:

Carbondale, CO

It's a tough subject on the western slope. The 2012 IGCC requires 50% construction waste be offset from the landfills. All the landfills take any wood and grind it up to put in their main pits. Not really recycling. I'd give them credit if they take scrapes home to burn in a wood stove or fireplace. The best-case scenario you can get 25% construction waste diverted if they are good.

Pitkin County has implemented a very stringent program and you can get some good info from them. Cathy Hall runs that landfill and can fill you in on that one. They are taking \$1000 buck a ton (estimated) at permit. If they can get 25% they get it all back, 20%-25% you get 1/2 back, less than 20% no refund. Pretty elaborate software program set up for tracking.

cathy.hall@pitkincounty.com

All that can realistically be re-cycled is metal, concrete, asphalt and cardboard from job sites. You can make them put a mixed container on the jobsite for all the workers to put their daily recycling in.

We've been struggling with this aspect of the Green Code, making exceptions quite a bit...

EPA

<https://www.epa.gov/large-scale-residential-demolition/road-reuse-residential-demolition-bid-specification-development>

Waste Cap

<https://www.wastecap.org/construction--demo.html>

Connecticut

<https://portal.ct.gov/DEEP/Reduce-Reuse-Recycle/ReduceReuseRecycle-Main-Page>

Other Regulations Proposed to be Affected

*N/A

Referenced Standards:

N/A

Impact:

How will this proposal impact cost and restrictiveness of code? ("X" answer for each item below)

Cost of construction:	<input checked="" type="checkbox"/> Increase	<input type="checkbox"/> Decrease	<input type="checkbox"/> No Impact
Cost of design:	<input checked="" type="checkbox"/> Increase	<input type="checkbox"/> Decrease	<input type="checkbox"/> No Impact
Restrictiveness:	<input checked="" type="checkbox"/> Increase	<input type="checkbox"/> Decrease	<input type="checkbox"/> No Impact

Departmental Impact (City use only):

This amendment proposal increases/decreases/is neutral to the cost of plans review.
This amendment increases/decreases/is neutral to the cost of inspections.