

ORDINANCE AMENDMENT REVIEW SHEET
September 16, 2015

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Amendment: C20-2014-026 construction and demolition material diversion

Description: Consider an ordinance amending City Code Title 25, City Code Chapter 15-6, and Austin Resource Recovery administrative rules regarding recycling and reuse of materials generated by building and demolition projects.

Proposed Language: See attached draft ordinance.

Summary of proposed code changes:

1. Key amendments to **Title 25** include:

Affected projects:

 - a. Initially, building projects with 5,000 square feet or more
 - b. Initially, commercial or multifamily demolition projects
 - c. Beginning in 2020, add building projects with 1,000 square feet or more
 - d. Beginning in 2020, add residential demolition projects

2. Key amendments to **Chapter 15-6** include:
 - a. Diversion requirements for affected properties:
 - i. Initially, 50% diversion
 - ii. Beginning in 2020, increase to 75%
 - iii. Beginning in 2030, increase to 95%
 - b. Reporting requirement – Affected Projects report amounts diverted and disposed to determine compliance
 - c. Enforcement – Not reporting or meeting diversion requirements is a Class C misdemeanor
 - d. Qualified processors
 - i. The city will register processors that validate their facility's average diversion rate
 - ii. Affected projects that send materials to Qualified Processors have simpler reporting requirements
 - e. Private haulers – report tons of construction materials hauled separately from other materials hauled

Background: Initiated by Council Resolution 20141211-128

In September 2010, the City Council adopted Resolution 20100930-023 directing staff to investigate requiring construction and demolition (C&D) sites to recycle or salvage material. Recognizing the need to cross coordinate with several departments and C&D recycling related organizations, staff released a memo to the City Council explaining the challenges and committed to return with a proposed ordinance in the future.

From December 2013 to November 2014, the Zero Waste Advisory Commission's (ZWAC) Construction & Demolition Recycling Committee and Austin Resource

C4
/2

Recovery (ARR) staff researched ordinances in other communities, conducted public meetings, and met with stakeholders to develop the C&D ordinance. Stakeholders included private haulers; material processors; landfill operators; waste consultants; architects; historic preservation representatives; home builders; construction, demolition, and deconstruction companies; building owners and managers; and public agencies such as the Texas Commission on Environmental Quality, Travis County, and the Capital Area Council of Governments. City departments included Austin Energy Green Building Program, Planning and Development Review Department, Public Works Department, Office of Sustainability, and Austin Code. Based on staff research, the development process, and feedback from stakeholders, amendments to Title 25 and Title 15 were needed.

In October, the ZWAC C&D Committee forwarded its recommendations in the form of an intent document for consideration by the full commission. In November, the ZWAC approved the intent document for consideration by the City Council.

On December 11, 2014, the City Council adopted Resolution 20141211-128 initiating amendments to the Land Development Code and the Solid Waste Services Code that would require certain building and demolition projects to divert construction materials from disposal. The resolution included the ZWAC-approved intent document to serve as guidance in ordinance language development.

Staff Recommendation: Approve amendments to Title 25. Staff is sharing Title 15 amendments to provide the Planning Commission with the diversion and reporting requirements referenced in 25-11-39. The Planning Commission is not required to take action on Title 15.

Board and Commission Actions

November 12, 2014: The Zero Waste Advisory Commission (ZWAC) approved a draft resolution and ordinance intent.

August 18, 2015: Codes and Ordinances Subcommittee recommended the draft ordinance to the full Planning Commission, with an amendment to clarify that the square footage called for in 25-11-39(C)(2) and 25-11-39(D)(2), end the lines with "square feet of new, added, or remodeled floor area."

August 25, 2015: The Planning Commission referred the draft ordinance to the Codes and Ordinances Subcommittee for further consideration.

September 2, 2015: ARR staff briefed the Environmental Commission on the draft ordinance.

September 15, 2015: Codes and Ordinances Subcommittee recommended the draft ordinance to the full Planning Commission, striking 25-11-39(D), which in 2020 expands affected projects to include residential demolition projects and construction projects greater than 1,000 square feet. In addition, the Subcommittee recommended advising the

CY/3

Zero Waste Advisory Commission to strike the following provisions related to higher diversion requirements in 2020 and 2030: 15-6-151(B), 15-6-151(C), 15-6-152(B), 15-6-152(C). In addition, the Subcommittee recommended that the City Council direct staff to provide an economic impact statement for household affordability and an economic assessment of the markets for C&D material to inform the City Council on increasing diversion requirements in 2020 and 2030.

September 22, 2015: Planning Commission is scheduled to consider the draft ordinance as amended by the Codes and Ordinances Subcommittee..

October 14, 2015: ZWAC is scheduled to consider the draft ordinance.

Council Action

Initiating resolution called for presenting this ordinance to Council in October 2015.

A public hearing has not been set.

Ordinance Number: NA

City Staff: Jessica King **Phone:** 974-7678 **Email:** jessica.king@austintexas.gov

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14

ORDINANCE NO. _____

1 AN ORDINANCE AMENDING CITY CODE CHAPTERS 15-6 (*SOLID WASTE*
2 *SERVICES*) AND 25-11 (*BUILDING, DEMOLITION, AND RELOCATION*
3 *PERMITS; SPECIAL REQUIREMENTS FOR HISTORIC STRUCTURES*)
4 RELATING TO DIVERSION AND DISPOSAL OF CONSTRUCTION AND
5 DEMOLITION MATERIALS.

6
7 **BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:**

8
9 **PART 1.** City Code Section 15-6-1 (*Definitions*) is amended to add new definitions to
10 read as follows.

11 **§ 15-6-1 DEFINITIONS.**

- 12
13 (1) Average Diversion Rate means the percentage of all inbound commingled
14 material over a period of time that a facility diverts for beneficial use.
- 15 (2) Austin Metro Area means the five-county metropolitan area that
16 surrounds the City of Austin.
- 17 (3) Beneficial Use means productive use of materials reclaimed through
18 separation, processing, deconstruction, or other means and made available
19 for recycling or reuse but does not include placement in a disposal facility,
20 used as daily cover in a disposal facility, or used for energy recovery.
- 21 (4) Building Components includes, but is not limited to, doors, windows,
22 fixtures, structural members, architectural parts, masonry, and similar
23 items.
- 24 (5) Deconstruction means dismantling or extracting reusable materials from a
25 project prior to or instead of traditional demolition.
- 26 (6) Project means activities described in Subsections 25-11-39(C) and (D)
27 (*Construction and Demolition Materials Diversion Required*).
- 28 (7) Project Disposal Rate means the total pounds of material generated by a
29 project and disposed per square foot of the Project.
- 30 (8) Project Diversion Rate means the percentage of the materials generated by
31 the project and diverted for beneficial use onsite or offsite.

C4
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1 (9) Qualified Processor means a facility that meets the qualifications in
2 Division 2 of this Article.

3 **PART 2.** City Code Chapter 15-6 (*Solid Waste Services*) is amended to add a new
4 Article 9 (*Construction and Demolition Materials Diversion Program*) to read as follows.

5 **DIVISION 1 PROGRAM REQUIREMENTS.**

6 **§ 15-6-150 COMPLIANCE REQUIRED.**

7 (A) Except as provided in Section 15-6-156 (*Waiver*), a permittee subject to
8 Section 25-11-39 (*Construction and Demolition Materials Diversion*
9 *Required*) shall comply with this Article.

10 (B) A permittee complies with this Article if the permittee meets or exceeds either
11 material disposal rate in Section 15-6-151 (*Project Disposal Rates*) or the
12 diversion rate in Section 15-6-152 (*Project Diversion Rates*).

13 (C) In this chapter, materials means non-hazardous materials directly or indirectly
14 by-products of a construction or demolition project including, but not limited
15 to, building components, concrete, corrugated cartons, gypsum wallboard,
16 metal, paper, paving, plastics, and wood; but does not include excavated soil,
17 stone, land-clearing debris and similar items

18 **§ 15-6-151 PROJECT DISPOSAL RATES.**

19 (A) Beginning October 1, 2016, a permittee or its agents may not dispose more
20 than 2.5 pounds of materials per square foot of the project.

21 (B) Beginning October 1, 2020, a permittee or its agents may not dispose more
22 than 1.5 pounds of materials per square foot of the project.

23 (C) Beginning October 1, 2030, a permittee or its agents may not dispose more
24 than .5 pounds of materials per square foot of the project

25 **§ 15-6-152 PROJECT DIVERSION RATES.**

26 (A) Beginning October 1, 2016, a permittee or its agents shall divert a minimum of
27 50 percent of materials generated by the project for beneficial use.

28 (B) Beginning October 1, 2020, a permittee or its agents shall divert a minimum of
29 75 percent of materials generated by the project for beneficial use.

30 (C) Beginning October 1, 2030, a permittee or its agents shall divert a minimum of
31 95 percent of materials generated by the project for beneficial use

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1 **§ 15-6-153 PROJECT DISPOSAL AND DIVERSION REPORT.**

2 (A) A permittee shall provide the department the report required by this Section at
3 the same time it requests final inspections to complete the building or
4 demolition permit requirements.

5 (B) A report must include

6 (1) the amounts of materials generated by the project and put to beneficial use
7 onsite;

8 (2) the amounts of materials delivered to a qualified processor;

9 (3) the amounts delivered to a processor or end-user and diverted for
10 beneficial use;

11 (4) the amounts of materials delivered to a processor or end-user and
12 disposed;

13 (5) the amounts of materials delivered directly to a disposal facility; and

14 (6) any other information required by the department

15 **§ 15-6-154 CALCULATIONS.**

16 The department will establish by rule the calculations for project disposal and
17 diversion rates.

18 **§ 15-6-155 QUALIFIED PROCESSOR.**

19 A permittee may deliver materials to a qualified processor to meet the rates
20 established in Section 15-6-151 (*Project Disposal Rates*) or Section 15-6-152 (*Project*
21 *Diversion Rates*)

22 **§ 15-6-156 WAIVER.**

23 (A) A permittee may request a waiver from the disposal rates in Section 15-6-151
24 (*Project Disposal Rates*) and the diversion rates in Section 15-6-152 (*Project*
25 *Diversion Rates*) for a project subject to this Chapter.

26 (B) A request for a waiver must be in writing on a form approved by the director.

27 (C) The director may grant a waiver if the permittee shows a good faith effort to
28 divert construction and demolition materials generated by the project but that

1 disposal or diversion rates could not be met because of the nature of the
2 construction and demolition materials.

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3 **DIVISION 2 QUALIFIED PROCESSORS.**

4 **§ 15-6-160 REGISTRATION REQUIRED.**

- 5 (A) A facility that meets the requirements in Section 15-6-161 (*Qualified*
6 *Processor Requirements*) may be registered by the department as a qualified
7 processor.
- 8 (B) A registration is effective for two years.
- 9 (C) 90 days before the expiration of the registration, the facility owner must
10 submit a renewal application.

11 **§ 15-6-161 QUALIFIED PROCESSOR REQUIREMENTS.**

- 12 (A) A facility is a qualified processor if it meets the following criteria:
- 13 (1) complies with all federal, state, and local regulations, including any
14 permit requirements;
- 15 (2) weighs the items described in Subsection (B);
- 16 (3) provides the information described in Subsection (C);
- 17 (4) is located in the Austin Metro Area;
- 18 (5) authorizes an inspection of its facility by the department; and
- 19 (6) agrees to the requirements described in Section 15-6-163 (*Audit*
20 *Requirements*).
- 21 (B) A qualified processor must be able to weigh:
- 22 (1) inbound mixed materials;
- 23 (2) materials reclaimed for use from mixed materials; and
- 24 (3) residual material disposed.
- 25 (C) A qualified processor must be able to provide customers with documentation
26 that shows the dates, the amounts, and disposition of each load of materials,
27 mixed or separated, received from projects subject to this Article. Amounts
28 may be calculated based on tons or in a manner provided for in the Rules.

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1 (D) A qualified processor must submit a report each six months to the director that
2 includes the average diversion rate, the types of materials recovered, and the
3 beneficial uses for the materials. The report is due within 30 days after each
4 six month period.

5 (E) A qualified processor must have its average diversion rate validated in
6 accordance with Section 15-6-162 (*Average Division Rate Calculation and*
7 *Validation*).

8 **§ 15-6-162 AVERAGE DIVERSION RATE CALCULATION AND VALIDATION.**

9 (A) A qualified processor's average diversion rate is calculated as the tons of
10 materials reclaimed divided by the tons materials processed and multiplied by
11 100 percent.

12 (B) An entity or individual is authorized to validate a qualified processor's average
13 diversion rate if the entity or individual:

- 14 (1) has operational or consulting experience in waste management, building
15 design, construction, demolition, renovation, environmental protection, or
16 accounting;
- 17 (2) if required by the director, completes City-approved training on
18 construction and diversion material recycling, Zero Waste, or other related
19 topics; and
- 20 (3) is approved by director.

21 (C) An entity or individual qualified under this Section to validate average
22 diversion rate may not charge fees contingent upon a City registering a facility
23 as a qualified processor.

24 (D) An employee, owner, or other agent of the qualified processor may not
25 validate the average diversion rate for the qualified processor.

26 **§ 15-6-163 AUDIT REQUIREMENTS.**

27 (A) A qualified processor shall make its records available for audit by the
28 department during regular business hours.

29 (B) Failure to comply with Subsection (A) is cause to suspend the qualified
30 processor's registration

1 **§ 15-6-164 SUSPENSION.**

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- 2 (A) The department may suspend a qualified processor's registration if the
3 qualified processor fails to comply with the requirements in this division.
- 4 (B) Prior to suspending a registration, a written notice of proposed suspension
5 must be sent to the facility owner and operator.
- 6 (C) The notice described in Subsection (B) will include the violation and a time
7 period to correct the violation.
- 8 (D) If the facility does not correct the violation within the time period stated in the
9 notice, the department will notify the facility owner and operator that it is no
10 longer a qualified processor.
- 11 (E) A facility owner or operator may appeal the decision to suspend the qualified
12 processor's registration. An appeal must be filed with the director no later than
13 the 20th day following the date the registration was suspended. The appeal
14 must identify each alleged point of error, facts and evidence supporting the
15 appeal, reasons why the suspension should be set aside, and must be signed by
16 the facility owner or operator. The director must provide a written response to
17 the appeal within 30 days from the date the appeal is received by the director

18 **DIVISION 3. ENFORCEMENT**

19 **§ 15-6-170 ENFORCEMENT.**

- 20 (A) A permittee who fails to submit the report required in Section 15-6-153
21 (*Project Disposal and Diversion Rate Report*) commits an offense punishable
22 as described in Section 1-1-99 (*Offenses; General Penalty*).
- 23 (B) A permittee who fails to submit a substantially complete report required in
24 Section 15-6-153 (*Project Disposal and Diversion Rate Report*) commits an
25 offense punishable as described in Section 1-1-99 (*Offenses; General Penalty*).
- 26 (C) A permittee who fails to meet the requirements in Section 15-6-151 (*Project*
27 *Disposal Rates*) or Section 15-6-152 (*Project Diversion Rates*) commits an
28 offense punishable as described in Section 1-1-99 (*Offenses; General Penalty*).
- 29 (D) A culpable mental state is not required, and need not be proved.
- 30 (E) Each day a permittee fails to submit a report is a separate offense.

C4/10

1 **PART 3.** City Code Section 15-6-44 (*Reporting Requirements*) is amended to read as
2 follows.

3 **§ 15-6-44 REPORTING REQUIREMENTS.**

4 (A) A licensee shall maintain a list of the containers used for the collection,
5 storage, or disposal of solid waste that are owned or serviced by the licensee,
6 with the customer number and the location of each container.

7 (B) A licensee shall file a quarterly report of the number of containers it services in
8 the city. A licensee shall submit the container fee required by this article with a
9 report filed under this section.

10 (C) A licensee who provides solid waste collection service under Article 3 (*Private*
11 *Solid Waste Collection Service*) or recycling service under Article 5 (*Universal*
12 *Recycling*) shall file a report with the Austin Code Department [Compliance].
13 The report shall be on a form provided by the Austin Code Department
14 [Compliance]. The report shall be filed with the Austin Code Department
15 [Compliance] semi-annually on or before the last business day in January and
16 July of each calendar year. The report shall contain the following information:

17 (1) the amount in tons of solid waste, recyclables, and organic materials (but
18 excluding construction and demolition materials) [each of the following
19 types of material] hauled to:

- 20 (a) landfills [solid waste];
- 21 (b) recycling facilities [recyclables]; and
- 22 (c) organic materials processing facilities [collected and transported to
23 a receiving facility];

24 (2) the amount in tons of construction and demolition materials hauled
25 directly to:

- 26 (a) landfills;
- 27 (b) recycling facilities; and
- 28 (c) organic materials processing facilities; and

29 (3) other information required by the Austin Code Department [Compliance].

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1 **PART 4.** City Code Chapter 25-11 (*Building, Demolition, and Relocation Permits;*
2 *Special Requirements for Historic Structures*) is amended to add a new Section 25-11-39
3 (*Construction and Demolition Materials Diversion Required*) to read as follows.

4 **§ 25-11-39 CONSTRUCTION AND DEMOLITION MATERIALS DIVERSION**
5 **REQUIRED.**

6 (A) Except as provided in Subsection (E), each person that applies for a building
7 permit or demolition permit for activities described in Subsections (C) and (D)
8 must acknowledge the person's need to comply with this Section and Chapter
9 15-6, Article 9 (*Construction and Demolition Materials Diversion Program*)
10 before a building or demolition permit is issued.

11 (B) This section is applicable in the City's zoning jurisdiction.

12 (C) Except as provided in Subsection (E), beginning October 1, 2016, construction
13 and demolition materials diversion is required for

14 (1) commercial and multifamily projects that require a demolition permit; and

15 (2) construction projects that exceed 5,000 square feet of new, added, or
16 remodeled floor area.

17 (D) Except as provided in Subsection (E), beginning October 1, 2020, construction
18 and demolition materials diversion is required for

19 (1) commercial, multifamily, and residential projects that require a
20 demolition permit; and

21 (2) construction projects that exceed 1,000 square feet of new, added, or
22 remodeled floor area.

23 (E) Construction and demolition materials diversion is not required for the
24 following activities:

25 (1) projects for which only mechanical, electrical, or plumbing permits are
26 required or

27 (2) work for which a building or demolition permit is not required.

28 **PART 5.** This ordinance takes effect on October 1, 2016.

PASSED AND APPROVED

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_____, 2015

Steve Adler
Mayor

APPROVED: _____

ATTEST: _____

Anne L. Morgan
Interim City Attorney

Jannette S. Goodall
City Clerk

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ORDINANCE DEVELOPMENT TIMELINE
Construction and Demolition Material Diversion Ordinance

12/9/13	ZWAC C&D Committee	<ul style="list-style-type: none"> ARR presented process for developing ordinance; AEGB summarized green building construction material recycling requirements
7/9/14	ZWAC C&D Committee	<ul style="list-style-type: none"> ARR reported on other municipal C&D diversion policies and ordinances
8/8/14	Stakeholders	<ul style="list-style-type: none"> ARR staff invited stakeholder input on ordinance parameters
8/14/14	Stakeholders	
8/28/14	ZWAC C&D Committee	<ul style="list-style-type: none"> Recommended staff-proposed ordinance intent to ZWAC
10/8/14	ZWAC	<ul style="list-style-type: none"> Accepted Committee recommendation, added: <ul style="list-style-type: none"> Affected Parties, beginning 2020: <ul style="list-style-type: none"> Construction >1000 sq ft Residential demolition Higher diversion requirements for 2017, 2020, and 2030
11/3/14	ZWAC C&D Committee	<ul style="list-style-type: none"> Deleted 2017 diversion requirements Added staff reports to Council before 2020 and 2030
11/12/14	ZWAC	<ul style="list-style-type: none"> Accepted Committee recommendations
12/11/14	City Council	<ul style="list-style-type: none"> Adopted resolution initiating ordinance, using ZWAC recommendation
2/27/15	ZWAC C&D Committee	<ul style="list-style-type: none"> Considered amendments to ARR Administrative Rules
5/11/15	ZWAC C&D Committee	<ul style="list-style-type: none"> Accepted staff-proposed ordinance and rules concept, which included Waiver option
8/18/15	PC/CO Committee	<ul style="list-style-type: none"> Recommended draft ordinance to PC
8/25/15	Planning Commission	<ul style="list-style-type: none"> Referred draft ordinance to CO
9/2/15	Environmental Commission	<ul style="list-style-type: none"> No action, none required Advised staff to minimize reporting requirements Advised staff on importance of housing affordability for, not only, single-family, but also, multifamily housing
9/15/15	PC/CO Committee	<p>Stakeholders encouraged:</p> <ul style="list-style-type: none"> removing residential demo not increasing diversion requirements above 50% for SMART housing exempting lead paint and asbestos containing materials from diversion requirements <p>PC recommended:</p> <ul style="list-style-type: none"> that PC strike 25-11-39(D) that ZWAC strike (B) & (C) of 15-6-151 and 15-6-152 that staff provide studies to Council to consider increasing requirements to those proposed for 2020 and 2030

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8/28/14: ZWAC C&D COMMITTEE RECOMMENDATION

Affected Projects

Construction (sq ft)	5,000
Commercial Demolition	All

Project Requirements, either:

§ 15-6-151. Disposal Rate (lbs/sq ft)	< 2.5
§ 15-6-152. Diversion Rate	50%

10/8/14: ZWAC RECOMMENDATION

Affected Projects

	2016	2020
Construction (sq ft)	5,000	1,000
Commercial Demolition	All	All
Residential Demolition	None	All

Project Requirements, either:

	2016	2017	2020	2030
§ 15-6-151. Disposal Rate (lbs/sq ft)	< 2.5	< 2.0	< 1.5	< 0.5
§ 15-6-152. Diversion Rate	50%	65%	75%	95%

11/3/14: ZWAC C&D COMMITTEE RECOMMENDATION

Affected Projects

	2016	2020
Construction (sq ft)	5,000	1,000
Commercial Demolition	All	All
Residential Demolition	None	All

Project Requirements, either:

	2016	2020	2030
§ 15-6-151. Disposal Rate (lbs/sq ft)	< 2.5	< 1.5	< 0.5
§ 15-6-152. Diversion Rate	50%	75%	95%

Plus, prior to 2020 and 2030, City staff will provide the City Council with:

- Economic impact statement for household affordability
- Economic assessment of the markets for construction and demolition materials

11/12/14: ZWAC accepted Committee recommendation

12/11/14: Council adopted resolution to develop ordinance using ZWAC recommendation

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IMPACT of C&D RECYCLING on HOUSING AFFORDABILITY

This proposed ordinance is based on green building requirements to divert construction materials from landfilling. In particular, this ordinance closely resembles the Construction Waste Management requirements for commercial, multifamily and Two Star single-family ratings from the Austin Energy Green Building Program (AEGB). In addition, LEED credits include similar construction material management standards. Projects currently subject to this requirement through the AEGB Program include those built Downtown (CBD/DMU), in Mueller or UNO, certified as SMART Housing, subject to PUD or Downtown Density Bonus standards.

The following Basic Requirement for AEGB Multifamily Ratings is similar to a Basic Requirement for AEGB commercial projects and Two Star rated single-family projects:

13. Construction Waste Management

Intent

To reduce construction and demolition waste destined for the landfill or incineration facilities by reusing or recycling material thus, extending the life of the landfills, and saving energy, resources, and costs

Requirement (Residential and Non-Residential Uses)

Recycle and/or salvage at least 50% (by weight) of non-hazardous construction and demolition waste, excluding excavated soil, stone, and land clearing debris. Diverted material must include at least four material streams (i.e. concrete, metal, wood, gypsum wallboard, paper and cardboard, plastic).

Required Verification

CONDITIONAL APPROVAL

- Specifications for Construction Waste Management in the contract documents
- Construction Waste Management Plan. Plan must address at minimum:
 - Anticipated waste streams
 - Four materials to be diverted from landfill
 - Hauler and landfill/recycler location for each material stream

FINAL APPROVAL

- Calculations from the AEGB Construction Waste Calculator. An updated calculator must be provided to AEGB quarterly reflecting the project's current status
- Weight tickets for all of the waste recycled, salvaged, or sent to the landfill, as requested

Because the following provisions of the Land Development Code require meeting or exceeding AEGB minimum requirements, many building projects are already diverting construction materials:

- § 25-1. Article 15. S.M.A.R.T. Housing
- § 25-2-586. Downtown Density Bonus
- § 25-2-593. Downtown (CBD/DMU)

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- § 25-2-754. University Neighborhood Overlay
- § 25-2 B. 2. 5. Planning Unit Development
- Mueller

These green projects provide insight on the impact of requiring construction material diversion.

In some cases, reaching a high level of diversion requires having separate containers at the job site for landfill trash and each of the materials to recover. Most job sites, however, don't have the extra space for additional containers. In addition, keeping materials separate can require changes in material handling at the job site.

To address space restrictions and keep material handling simple at the job site, several area landfills and other material recovery businesses established processing systems for mixed loads of construction materials. Consequently, whether construction materials are ultimately diverted or not, construction crews don't have to change how they handle discards on the job site. It all goes into one box.

From that aspect, requiring diversion has little to no impact on the placement or usage of a debris box at the job site. From there, private haulers transport the material to either a landfill or processing center, most of which are located next to or near a landfill. Thus, whether the material is diverted or disposed, the hauling distance is about the same. So, this ordinance would not impact hauling distances for construction material debris.

Processing mixed construction materials can, however, cost more than landfilling. The following tip fees provided by landfills, processors, and private haulers illustrate the cost difference between landfilling and processing:

- Landfilling
 - Range: \$40 to \$50/ton
 - Average: \$45/ton
- Mixed C&D Material Processing
 - \$325 per roll-off box (for up to 6 tons in the box)
 - Range: \$55 to \$80/ton (4 to 6 tons/box)
 - Average: \$65/ton

These figures indicate that, on average, processing mixed construction debris can cost about \$20 more per ton than landfilling. Some contractors reduce this cost by collecting certain recyclables separately on the job site, particularly concrete, metal, and wood. In fact, many projects generate large quantities of these materials when removing an existing structure prior to construction.

But not every project has room for on-site separation. And not all projects have pre-construction demolition materials. Those projects would be the most impacted by this ordinance.

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The following table presents typical material generation rates compiled by the U.S EPA and others. These figures are consistent with generation rates for fifteen recent Austin-area green building projects.

The table also presents estimates for the additional cost per square foot to process instead of dispose of construction materials, based.

Project Type	Debris Generation Rates*		Cost per square foot		
	H, M, or L	lbs/sq ft	100% Disposal	50% Diversion	Increased Cost
Multi-family	Low	5	\$0.11	\$0.16	\$0.05
	Medium	7.5	\$0.17	\$0.24	\$0.08
	High	18	\$0.41	\$0.59	\$0.18
Single-family	Low	3	\$0.07	\$0.10	\$0.03
	Medium	8.5	\$0.19	\$0.28	\$0.09
	High	15	\$0.34	\$0.49	\$0.15

* Sources

- www.stopwaste.org/recycling/business/waste-management-plans
- www.epa.gov/osw/conservation/imr/cdm/pubs/cd-meas.pdf

Essentially, these figures show that charging \$20 per ton more to process rather than dispose of construction materials adds from \$0.03 to \$0.18 per square foot to the building costs, depending on the material generation rate. The median is \$0.08 more per square foot.

The table on the next page calculates what the costs would be to divert 50% of the construction material compared to 100% disposal for fifteen recent Austin area green building projects.

**ESTIMATED COSTS FOR CONSTRUCTION MATERIAL DISPOSAL AND DIVERSION
FOR SEVERAL RECENT AUSTIN ENERGY GREEN BUILDING RATED PROJECTS**

Project		Actual Data						Estimated Costs			
ID	Type	Area (sq ft)	Tons		Diversion Rate	Generation (lbs/sq ft)	100% Disposal	50% Diversion	Increase		
			Landfill	Diverted					Total	\$	\$/sq ft
A	Multi-family	91,976	276.4	745.3	1021.7	72.9%	22.2	\$45,975	\$66,408	\$20,433	\$0.22
B		177,032	320.8	741.4	1062.2	69.8%	12.0	\$47,799	\$69,043	\$21,244	\$0.12
C		241,817	433.5	987.8	1421.3	69.5%	11.7	\$63,960	\$92,387	\$28,427	\$0.12
D		234,968	135.5	743.0	878.5	84.6%	7.5	\$39,531	\$57,100	\$17,569	\$0.07
E		292,150	303.5	506.7	810.2	62.5%	5.6	\$36,459	\$52,663	\$16,204	\$0.06
F		138,873	277.0	769.5	1046.5	73.5%	15.1	\$47,094	\$68,025	\$20,931	\$0.15
G		185,710	352.6	1092.6	1445.2	75.6%	15.6	\$65,034	\$93,938	\$28,904	\$0.16
H		297,755	466.5	483.1	949.6	50.9%	6.4	\$42,730	\$61,721	\$18,991	\$0.06
I		391,773	506.4	1507.6	2014.0	74.9%	10.3	\$90,631	\$130,912	\$40,281	\$0.10
MF AVERAGE		228,006	341	842	1,183	71.2%	10.4	\$53,246	\$76,911	\$23,665	\$0.10
J	High Rise	287,498	186.8	1117.6	1304.4	85.7%	9.1	\$58,699	\$84,787	\$26,088	\$0.09
K	Multi-family	235,584	521.4	2091.4	2612.8	80.0%	22.2	\$117,574	\$169,830	\$52,255	\$0.22
L		314,263	456.4	2,238	2694.4	83.1%	17.2	\$121,247	\$175,135	\$53,888	\$0.17
Hi Rise MF Ave.		279,115	388	1,816	2,204	82.4%	15.8	\$99,173	\$143,250	\$44,077	\$0.16
M	Single-family	2,759	3.6	10.5	14.1	74.2%	10.2	\$634	\$916	\$282	\$0.10
N		3,216	0.6	8.0	8.6	93.4%	5.3	\$386	\$558	\$172	\$0.05
O		6,408	1.5	9.0	10.5	85.7%	3.3	\$471	\$681	\$209	\$0.03
SF AVERAGE		4,128	1.9	9.2	11.0	82.8%	5.4	\$497	\$718	\$221	\$0.05
ALL		193,452.1	282.8	870.1	1,152.9	75.5%	11.9	\$51,882	\$74,940	\$23,059	\$0.12

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AFFORDABILITY IMPACT STATEMENT

NEIGHBORHOOD HOUSING AND COMMUNITY DEVELOPMENT

RESOLUTION No.: STAFF INITIATED AMENDMENTS

DESCRIPTION: CONSTRUCTION AND DEMOLITION – AUSTIN RESOURCE RECOVERY

04/19

PROPOSED CODE AMENDMENT:	AN ORDINANCE AMENDING CITY CODE CHAPTERS 15-6 (SOLID WASTE SERVICES) AND 25-11 (BUILDING, DEMOLITION, AND RELOCATION PERMITS; SPECIAL REQUIREMENTS FOR HISTORIC STRUCTURES) RELATING TO DIVERSION AND DISPOSAL OF CONSTRUCTION AND DEMOLITION MATERIALS.
IMPACT ON IMPLEMENTATION OF IMAGINE AUSTIN VISION, GOALS AND PRIORITIES RELATED TO HOUSEHOLD AFFORDABILITY	<input type="checkbox"/> POSITIVE <input type="checkbox"/> NEGATIVE <input checked="" type="checkbox"/> NEUTRAL
LAND USE / ZONING OPPORTUNITIES FOR AFFORDABLE HOUSING DEVELOPMENT	<input type="checkbox"/> POSITIVE <input type="checkbox"/> NEGATIVE <input checked="" type="checkbox"/> NEUTRAL THERE IS NO ANTICIPATED IMPACT ON LAND USE OR ZONING OPPORTUNITIES FOR AFFORDABLE HOUSING DEVELOPMENTS
IMPACT ON COST OF DEVELOPMENT	<input type="checkbox"/> POSITIVE <input checked="" type="checkbox"/> NEGATIVE <input type="checkbox"/> NEUTRAL THE PROPOSED CODE AMENDMENTS WILL RESULT IN INCREASED DEVELOPMENT COSTS. AUSTIN RESOURCE RECOVERY ESTIMATES THE INCREASED COSTS TO BE AN AVERAGE OF \$20 PER TON OF DISPOSAL OR \$.08 PER SQUARE FOOT OF DISPOSAL. PLEASE REFER TO THE ATTACHED SUMMARY PROVIDED BY AUSTIN RESOURCE RECOVERY FOR A BREAKDOWN OF COST ESTIMATES BY DEVELOPMENT TYPE.
IMPACT ON PRODUCTION OF AFFORDABLE HOUSING	<input type="checkbox"/> POSITIVE <input type="checkbox"/> NEGATIVE <input checked="" type="checkbox"/> NEUTRAL INCREASES IN DEVELOPMENT COST MAY HAVE A NEGATIVE IMPACT ON THE PRODUCTION OF AFFORDABLE HOUSING AS THE RENTAL RATES AND SALES PRICES OF HOUSING ARE IMPACTED BY THE OVERALL COST TO DEVELOP HOUSING. HOWEVER ANY HOUSING DEVELOPMENT THAT MEETS BASIC AUSTIN ENERGY GREEN BUILDING REQUIREMENTS IS CURRENTLY MEETING THE PROPOSED CONSTRUCTION AND DEMOLITION REQUIREMENT OF DIVERTING 50 PERCENT OF MATERIALS FOR PROCESSING RATHER THAN LANDFILL DISPOSAL. INCOME RESTRICTED AFFORDABLE HOUSING THAT IS BUILT UNDER CITY OF AUSTIN DEVELOPER INCENTIVE PROGRAMS OR DEVELOPMENT AGREEMENTS SUCH AS S.M.A.R.T. HOUSING, UNIVERSITY NEIGHBORHOOD OVERLAY DENSITY BONUS, DOWNTOWN DENSITY BONUS, PLANNED UNIT DEVELOPMENTS, AND THE MUELLER DEVELOPMENT ARE REQUIRED TO MEET GREEN BUILDING STANDARDS AND

C4/10

	THEREFORE WILL NOT BE AFFECTED BY THE PROPOSED AMENDMENTS.
PROPOSED CHANGES IMPACTING HOUSING AFFORDABILITY:	PLEASE SEE RESPONSE ABOVE
ALTERNATIVE LANGUAGE TO MAXIMIZE AFFORDABLE HOUSING OPPORTUNITIES:	N/A
OTHER HOUSING POLICY CONSIDERATIONS:	
DATE PREPARED:	
DIRECTOR'S SIGNATURE: _____	

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C4
21

Preservation Austin Proposal

Austin Resource & Recovery Construction Material Recycling Ordinance

Preservation Austin offers the following suggestions to reduce waste and recycling, and promote further incentives for adaptive reuse and renovation. Our recommendations relate directly to the Austin Resource and Recovery (ARR) Construction Material Recycling Ordinance, but they also require an expanded approach within the sustainability or green building community. It is our position that there are inherent inequities, or unintended consequences within the rating system of Austin Energy Green Building (AEGB) and United States Green Building Council (USGBC) LEED scoring matrix that incentivize demolition rather than protect existing buildings and embodied resources.

Regarding the current materials and recycling ordinance, Preservation Austin fully supports the existing directives including:

- Dedicating a portion of the recycling fee to the COA Historic Preservation Office
- Providing staff training on adaptive reuse within the recycling community.

Regarding adjustments or amendments, Preservation Austin recommends that protecting and reusing materials becomes a greater calculated value above demolition and recycling. The following incentives are recommended.

- Increase the AEGB points achieved by reusing or saving existing materials/structures to a greater number than what may be achieved by demolishing or recycling materials.
- Recalculate the ARR method of valuing the weight of a saved building to equal the value of weight of recycled materials, and then apply that projected value towards a fee waiver or tax incentive as a financial trade in value.
- Increase the cost of permits and fees for demolition above the cost of fees and permits for adaptive reuse and preservation.

C4
1/22

Regarding the handling of recycled materials:

- Explore partnerships with educational, non-profits with existing building programs to expand their educational tools to include dismantling and recycling programs, i.e. American YouthWorks, local technical trade schools, Austin Community College, etc.
- Explore partnerships with educational, non-profits with existing building programs to possibly warehouse and resale valuable architectural components as a means of income or revenue stream.

Regarding adjustments or incentives within the broader green building community, Preservation Austin encourages ARR to promote a parallel effort in the USGBC LEED community. The following changes to the LEED scoring system would immediately reduce waste and recycling:

- Encourage the USGBC to increase the achievable points gained when reusing 95%, or 75% or 50% of an existing building to a greater number than one (1) point.
- Encourage the USGBC to demand a higher percentage than the current 2.5% for renewable materials in new construction when demolishing an existing structure.
- Encourage the USGBC to develop and include a more comprehensive rating system for the embodied energy of existing buildings to equitably match the embodied-energy of renewable materials.

Preservation Austin strongly believes in the protection and management of existing materials and structures as a valuable tool for reducing waste and preserving our planet's limited resources. It is our belief that the City of Austin, and other organizations charged with developing sustainable practices must modify and expand ways to incentivize preservation. By developing more equitable methods of valuing, and quantifying renovated structures above that of replaced structures, Austin Energy Green Building and Austin Resource Recovery will lower the impact of demolition and reduce the loss of valuable historic resources.

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RESOLUTION NO. 20141211-128

WHEREAS, in January of 2009, the City of Austin adopted the Zero Waste Strategic Plan, which included the Zero Waste goal to reduce the amount of waste Austinites send to the landfill by 90 percent by the year 2040; and

WHEREAS, according to annual landfill reports to the Texas Commission on Environmental Quality, construction material accounts for at least 20 percent of Austin's discards; and

WHEREAS, Resolution 20100930-023, directs the City Manager to investigate requiring all construction and demolition projects in the City to recycle or salvage a certain percentage of construction material in support of the City's Zero Waste goal; and

WHEREAS, the Austin Energy Green Building Program has required construction projects to recycle or salvage a certain percentage of construction material since 2003; and

WHEREAS, many cities nationwide are examining deconstruction policies that promote economic development by creating jobs and retail and revenue opportunities from the sale of the recycled materials; and

WHEREAS, the City of Austin promotes efficient use of resources through its Austin Materials Exchange, Austin (Re)Manufacturing Hub, and the ReMade in Austin program; **NOW, THEREFORE,**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

The City Council initiates amendments to Title 25 of the City Code and to other titles as needed in order to reduce construction and demolition disposal by:

- (1) Identifying construction, renovation, and demolition projects to be subject to diversion requirements;
- (2) Defining minimum diversion and reporting standards for affected projects;

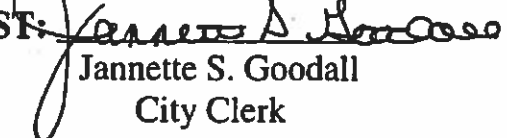
C4
/24

- (3) Quantifying the amount of construction material generated in Austin that is disposed and the amount that is diverted;
- (4) Defining minimum standards for certain processors to validate their diversion rates; and
- (5) Establishing a penalty for affected projects based on their diversion performance.

BE IT FURTHER RESOLVED THAT:

The City Manager is directed to process the Code amendment and to present it to Council for consideration by October 1, 2015. In processing the Code amendment, the City Manager is directed to consider and use as a foundation the recommendations proposed by the Zero Waste Advisory Commission, affected stakeholders and staff as identified in the attached Exhibit A.

ADOPTED: December 11, 2014

ATTEST: 
Jannette S. Goodall
City Clerk

C4
/25

**EXHIBIT A
DRAFT CONSTRUCTION MATERIAL MANAGEMENT ORDINANCE INTENT**

Ordinance Concept:

Initially, affected projects must either:

- Dispose 2.5 pounds per square foot or less, or
- Divert 50% or more of the C&D materials generated

Note: *Italicized* terms are defined at the end.

1. Affected Projects

1.1. Demolition projects

- 1.1.1. Commercial and multifamily projects
- 1.1.2. By 2020, include all residential projects

1.2. New construction or renovation projects

- 1.2.1. Projects permitted for more than 5,000 square feet
- 1.2.2. By 2020, projects permitted for more than 1,000 square feet

1.3. Exempted projects

- 1.3.1. Projects that require only a single trade (e.g., plumbing, electrical, mechanical, irrigation)

2. Requirements for Affected Projects

2.1. Permittees for affected projects shall meet one of the following requirements:

2.1.1. *Project Disposal Rate* – Dispose less than or equal to the following weights of *C&D Material* per permitted area:

- 2.1.1.1. 2.5 pounds per square foot
- 2.1.1.2. 1.5 pounds per square foot in 2020
- 2.1.1.3. 0.5 pounds per square foot in 2030

2.1.2. *Project Diversion Rate* – Divert to *Beneficial Use* greater than or equal to the following percentages by weight of the *C&D Materials* generated by the project:

- 2.1.2.1. 50% in 2015
- 2.1.2.2. 75% in 2020
- 2.1.2.3. 95% in 2030

2.1.3. Prior to the effective dates in 2020 and 2030 for the *Project Disposal Rate* and *Diversion Rates*, City staff will provide the City Council with:

- 2.1.3.1. An economic impact statement for household affordability, the intent being that the cost of housing should not be significantly affected by the increased rate of diversion; and

C4
1/26

2.1.3.2. An economic assessment of the markets for construction and demolition materials, the intent being that significant amounts of C&D materials ought not to be stockpiled in the area with no foreseeable reuse in the short term; nor should C&D materials be subject to long distance transport to find a market.

2.2. Acknowledgement/Affirmation – Permittees shall [acknowledge/affirm] on the building permit application that the project is subject to and will meet the diversion requirements in this Section 2.

2.3. Post-Construction Report – After the project is complete, the Permittee shall report the following to the City:

2.3.1. For Projects delivering *C&D Materials* only to *Qualified Processors*:

2.3.1.1. Documented tons of *C&D Materials* or *Building Components* generated by the project and delivered to *Qualified Processors*

2.3.1.2. *Facility-Average Diversion Rate* for each *Qualified Processor* at the time of delivery

2.3.2. For other Projects, documented quantities of each load of *C&D Materials* or *Building Components* generated by the project and handled in each of the following ways:

2.3.2.1. Onsite *Beneficial Reuse*

2.3.2.2. Delivered to processors or end-users and diverted for *Beneficial Use*

2.3.2.3. Delivered to processors or end-users and disposed

2.3.2.4. Delivered directly to disposal facilities

2.3.3. *Project Disposal Rate*, if the Project meets this requirement

2.3.4. *Project Diversion Rate*

2.3.4.1. For Projects delivering *C&D Materials* only to *Qualified Processors*, the *Project Diversion Rate* is the weighted average of the *Facility-Average Diversion Rates* for the *Qualified Processors* at delivery.

2.3.4.2. For other Projects, the *Project Diversion Rate* is calculated as the tons of *C&D Materials* or *Building Components* diverted for *Beneficial Reuse* onsite or offsite divided by the total tons generated by the project

2.3.4.3. Tons of materials delivered to a *Qualified Processor* and diverted for *Beneficial Reuse* shall be calculated as the tons of materials delivered to the *Qualified Processor* times the *Facility-Average Diversion Rate* for the *Qualified Processor* at the time of delivery.

3. Haulers – In addition to the requirements of §15-6-44, a licensed hauler shall report the following to the City semi-annually:

3.1. Tons of material, not including *C&D Materials*, that it hauls directly to each of the following:

3.1.1. Landfills

3.1.2. Recycling facilities

3.1.3. Mulching or composting facilities

3.2. Tons of *C&D Materials* that it hauls directly to each of the following:

3.2.1. Landfills

3.2.2. End-users or processing facilities

C4
27

4. Qualified Processors

- 4.1. Meet state permitting and reporting requirements
- 4.2. Report its *Facility-Average Diversion Rate* to the City of Austin semi-annually
- 4.3. Maintain certification by a city-approved third-party certifying organization (e.g., Recycling Certification Institute), which determines and validates its *Facility-Average Diversion Rate*
- 4.4. Meet a *Facility-Average Diversion Rate* set by the City of Austin

5. C&D Diversion Penalty – A project that disposes more than the disposal rate requirement and diverts less than the diversion rate requirement shall pay a C&D Diversion Penalty, which is the greater of:

- 5.1. \$Flat Dollar Rate for every ton of difference between the amount that the project should have diverted to meet the diversion rate requirement and the amount actually diverted
- 5.2. For projects with xx square feet or less, \$Flat Dollar Rate for every percentage point of difference between the diversion rate requirement and the percentage actually diverted
- 5.3. For projects with greater than xx square feet, \$Flat Dollar Rate for every percentage point of difference between the diversion rate requirement and the percentage actually diverted

Definitions (*italicized in use*)

- **Facility-Average Diversion Rate** – The percentage of all incoming material over a period of time that a processing facility diverts for *Beneficial Reuse*
- **Beneficial Reuse**
 - Includes salvage, reuse, or processing into a material or product with an open market value
 - Does not include use as a fuel or alternative daily landfill cover
- **Building Components** – Doors, windows, fixtures, structural members, architectural parts, masonry, etc.
- **Construction or Demolition (C&D) Materials**
 - Non-hazardous materials that are directly or indirectly the by-products of construction work or that result from demolition of buildings and other structures
 - Includes, but not limited to, concrete, corrugated cartons, gypsum wallboard, metal, paper, paving, plastics, and wood
 - Excludes excavated soil, stone, and land-clearing debris
- **Project Disposal Rate** – Total pounds of material generated by the Project and disposed by a processor or delivered directly to a disposal facility divided by the square feet of the project
- **Project Diversion Rate** – Percentage of the *C&D Materials* and *Building Components* generated by the project that were diverted for *Beneficial Reuse* onsite or offsite
- **Qualified Processor** – A facility that meets certain third-party certification requirements including documenting its *Facility-Average Diversion Rate*
- **Other terms** – These may need either definitions or references to their appropriate use in City Code: alternative daily cover, commercial, multifamily, residential, demolition, renovation, new construction