



# MODEL ORDINANCE ON MANDATORY REPORTING FOR LARGE FOOD WASTE GENERATORS

## *With Commentaries\**

\* For a clean version without commentaries: *Model Ordinance on Mandatory Reporting for Large Food Waste Generators*. For background information and supplemental resources: *Mandatory Reporting for Large Food Waste Generators Background Memorandum*.

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**1.0 Findings:**<sup>1</sup> Up to 40 percent of food in the United States is wasted—and 95 percent is disposed of in landfills or incinerated. Food is typically the largest component by weight of landfill waste, making up 24 percent on average. Diverting food waste from landfills by preventing food waste, donating surplus food, and recycling food scraps<sup>2</sup> can help municipalities<sup>3</sup> achieve waste reduction and climate mitigation goals.<sup>4</sup> Specifically, diverting food waste from landfills and incinerators typically:

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- 1 Section 1 statistics and benefits are drawn primarily from two reports: Dana Gunders and Jonathan Bloom, *Wasted: How America Is Losing up to 40 Percent of Its Food From Farm to Fork to Landfill*, NRDC, August 2017, <https://www.nrdc.org/sites/default/files/wasted-2017-report.pdf>; Andrea M. S. Collins, *Feeding a City: Food Waste and Food Need Across America*, NRDC, October 2021, <https://www.nrdc.org/sites/default/files/feeding-city-food-waste-food-need-report.pdf>.
  - 2 The U.S. Environmental Protection Agency’s Food Recovery Hierarchy prioritizes prevention as most preferable and landfilling/incineration as least preferable. U.S. Environmental Protection Agency, “Food Recovery Hierarchy,” accessed May 15, 2022, <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>.
  - 3 The Model refers to “municipalities,” which are typically defined to include cities and towns, but the Model can be used by other types of local governments as well, such as counties.
  - 4 Existing state and municipal food waste diversion ordinances and supporting materials reference food waste reduction benefits, including California and Austin. CalRecycle, “Guidance for Elected Officials,” State of California, accessed May 13, 2022, <https://calrecycle.ca.gov/organics/slep/electedofficials>; Austin Resource Recovery, “Commercial Organics Diversion Requirements,” City of Austin, accessed February 25, 2022, <https://www.austintexas.gov/bizorganics>.

- 1.1 Reduces emissions of methane—a potent greenhouse gas that contributes to climate change and that is emitted from food waste as it decays in landfills—and emissions of carbon dioxide from food waste that is incinerated.
- 1.2 Avoids wasting the greenhouse gas emissions associated with producing, transporting, and disposing of wasted food.
- 1.3 Extends the useful life of municipal landfills, thereby reducing the need to expand and create new landfills, which are costly and disproportionately sited in low-income communities and communities of color.
- 1.4 Reduces the harmful public health and environmental impacts of landfills and incinerators.
- 1.5 Fosters economic development through increased compost supplier and processor jobs.
- 1.6 Lowers waste management costs associated with landfill disposal.
- 1.7 Addresses food insecurity when surplus food is rescued and distributed to those in need, particularly households and communities of color which disproportionately face hunger.
- 1.8 Increases production of compost when food scraps are recycled, thereby producing valuable soil amendment that can sequester carbon and increase nutrient and water retention, which can reduce the demand for irrigation and fertilizer.

**2.0 Goals and Purposes:**<sup>5</sup> It is intended that mandatory food waste generation reporting by covered entities will:

- 2.1 Provide data that can inform municipal ordinances or policies, as well as waste management operations.
- 2.2 Increase awareness among businesses and the general public about the problem of food waste and food insecurity, and the need for organics recycling.
- 2.3 Lead to reductions in landfill disposal and incineration of food waste, as a result of raised awareness, reputational considerations, and other factors contributing to increased food waste prevention, surplus food rescue, and food scrap recycling.<sup>6</sup>

**3.0 Definitions:**<sup>7</sup>

- 3.1 **Anaerobic digestion:** A process through which bacteria break down organic materials, such as food waste, in the absence of oxygen to generate biogas and nutrient-rich matter.
- 3.2 **Animal feed:** Edible material in a form that complies with applicable regulatory requirements and that when consumed by an animal provides energy and/or nutrients.
- 3.3 **Business:** A commercial entity including, but not limited to, a firm, partnership, proprietorship, or corporation.
- 3.4 **Compost:** A product that results from controlled aerobic, biological decomposition of biodegradable materials, including food waste, that is typically used as a soil amendment.
- 3.5 **Covered entity:** Businesses, nonprofit organizations, and municipal governmental subunits that cook, assemble, process, serve, or sell food—or do so as service providers for other enterprises—and generate a total annual average of two tons per week or more of food waste.
- 3.6 **Food:** Any raw, cooked, processed, or prepared substance, beverage, or ingredient used or intended for human consumption.
- 3.7 **Food scraps:** Inedible food parts, trimmings from the preparation of food, food-soiled paper, edible food that is not donated, and food processing waste that results from the distribution, storage, preparation, cooking, handling, selling, or serving of food.
- 3.8 **Food waste:** Uneaten food and inedible parts, excluding packaging, that are landfilled, incinerated, disposed of down the drain/sewer, dumped, spread onto land, anaerobically digested, composted, or used for animal feed.

<sup>5</sup> Research did not identify any stand-alone food waste reporting laws and ordinances, but several municipalities and states require reporting in conjunction with food waste diversion requirements.

<sup>6</sup> Margaret Badding and Linda Breggin, “Environmental Law Institute Research Brief: Social Science Literature Review on Value of Measuring/Reporting Food Waste,” Environmental Law Institute, May 2022, <https://www.eli.org/food-waste-initiative/publications>.

<sup>7</sup> For purposes of consistency, municipalities may instead prefer to use definitions from their existing ordinances, regulations, or policies.

- 3.9 **Food waste generation:** Includes all discarded food waste regardless of its destination, including food scraps that are later recycled, landfilled, or incinerated.
- 3.10 **Nonprofit organization:** An incorporated or unincorporated entity that is operating for religious, charitable, or educational purposes and does not provide net earnings to any officer, employee, or shareholder.
- 3.11 **Quasi-governmental entities:** Organizations that have both a public and a private component, such as convention centers that are municipally owned but privately operated.
- 3.12 **Sampling:** Choosing to measure or approximate, over a period of time, the amount of food waste (1) from a subset of food waste producing units within a population (such as a few hotels that belong to a larger hotel chain); or (2) from a fraction of the physical food waste produced.
- 3.13 **Scaling:** Increasing data in a fixed ratio from a limited number of observations in order to estimate the entire amount of food waste over the period of an inventory.
- 3.14 **Shall:** An imperative command that indicates actions are mandatory.
- 3.15 **Standard units:** Common units of measurement such as inches, pounds, and tons.
- 3.16 **Surplus food:** Food (including inedible parts) that is not sold or used by a covered entity and that meets food safety regulations, even though it may not be readily marketable due to appearance, age, freshness, grade, size, surplus, or other conditions.
- 3.17 **Undue hardship:** Occurs when a compliance burden is unreasonable or excessively costly for a covered entity to bear.
- 4.0 Covered Entities:**<sup>8</sup> Covered entities are businesses, nonprofit organizations, and municipal governmental subunits that cook, assemble, process, serve, or sell food or do so as service providers for other enterprises and generate a total annual average of two tons per week<sup>9</sup> or more of food waste based on the methods referenced in Section 6.<sup>10</sup>
- 5.0 Reporting Requirements:**<sup>11</sup> Covered entities shall submit an annual report<sup>12</sup> to the [insert name of municipal department] on or before [add date that corresponds to start of fiscal or calendar year], and annually thereafter, in an electronic format acceptable to [insert name of municipal department]. The report shall include:<sup>13</sup>
- 5.1 Amount of food waste generated during the prior year by weight (expressed in pounds/tons).
- 5.1.1 Method used, pursuant to Section 6, to determine the amount of food waste generation reported.
- 5.1.2 If sampling and scaling are used, a description of the approach, calculations used, and the period of time over which sample data were collected.
- 5.1.3 Qualitative description and/or a quantitative assessment of any uncertainties around the amount of food waste generation reported.

8 The language defining covered entities is based on definitions in several state and municipal food waste diversion laws and ordinances, including New York State and Portland, Oregon. Environmental Conservation, ch. 43-B, art. 27, tit. 22, § 27-2201, Consolidated Laws of New York, <https://www.nysenate.gov/legislation/laws/ENV/27-2201>; City Code, tit. 17 § 17.102.020, Portland, Oregon, <https://www.portland.gov/code/17/102#toc--17-102-020-definitions->.

9 Some municipalities and states have developed estimation tools to identify entities subject to their diversion requirements (New York) or to calculate a jurisdiction's total food waste generation by business group (California). New York State Department of Environmental Conservation, "Food Donation and Food Scraps Recycling Law," accessed May 13, 2022, <https://www.dec.ny.gov/chemical/114499.html#DFSG>; CalRecycle, "Business Group Waste Stream Calculator," State of California, accessed May 13, 2022, <https://www2.calrecycle.ca.gov/WasteCharacterization/BusinessGroupCalculator>. Tools can also be used by covered entities to determine if they meet required thresholds (Massachusetts). RecyclingWorks Massachusetts, "Food Waste Estimation Guide," accessed May 13, 2022, <https://recyclingworksma.com/food-waste-estimation-guide>.

10 The Model applies to virtually all types of entities that meet the food waste generation threshold of two tons per week, which is a commonly used threshold in state and local diversion requirements, as it covers the largest surplus food generators, which typically have the staff, expertise, and other resources to comply. Municipalities may opt, however, to vary the scope and type of entities covered by, for example, generator type, physical size of businesses, or generation threshold.

11 Municipalities may opt to reduce the compliance or implementation burden by truncating the Model's reporting requirements or instead may seek more robust data to inform their understanding of food waste related challenges, such as reporting types of food waste generated. See NRDC's report identifying ten categories of food waste: Darby Hoover, *Estimating Quantities and Types of Food Waste at the City Level: Technical Appendices*, NRDC, October 2017, <https://www.nrdc.org/sites/default/files/food-waste-city-level-technical-appendices.pdf>. Municipalities could also require reporting on food waste prevention solutions, such as upcycling and repurposing food.

12 New York's template requires covered entities to report a range of information in addition to the amount of food donations and food scraps recycled, such as basic contact information and the names of organizations that receive their donations, as well as those that transport and recycle their food scraps. Division of Materials Management, "2022 Annual Report: Designated Food Scraps Generators, Food Donation and Scraps Recycling Law," New York State Department of Environmental Conservation, accessed May 19, 2022, [https://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/dfsgannualreport.pdf](https://www.dec.ny.gov/docs/materials_minerals_pdf/dfsgannualreport.pdf).

13 The reporting requirements are largely based on New York State law. Environmental Conservation, ch. 43-B, art. 27, tit. 22, § 27-2201, Consolidated Laws of New York, <https://www.nysenate.gov/legislation/laws/ENV/27-2201>.

- 5.2 Amount and types of surplus food donated to a nonprofit organization<sup>14</sup> during the prior year.
  - 5.2.1 Method used, pursuant to Section 6, to determine the amount by weight (expressed in pounds/tons) of donated surplus food reported.
  - 5.2.2 A description of the types of food donated and, if feasible, the amount by weight of each type of food (expressed in pounds/tons):
    - 5.2.2.1 Prepackaged shelf-stable foods.
    - 5.2.2.2 Baked foods.
    - 5.2.2.3 Whole fresh produce.
    - 5.2.2.4 Dairy products.
    - 5.2.2.5 Prepared foods.
    - 5.2.2.6 Meat, eggs, poultry, seafood.
    - 5.2.2.7 Frozen food (not including meat, poultry, or seafood).
    - 5.2.2.8 Other foods.
  - 5.2.3 Major donation challenges that had to be overcome in the past year or are ongoing, such as donation logistics, storage, and transportation.
- 5.3 Amount of food scraps recycled during the prior year by weight (expressed in pounds/tons).
  - 5.3.1 Destination of food scraps, including:
    - 5.3.1.1 Animal feed.
    - 5.3.1.2 Anaerobic digestion.
    - 5.3.1.3 Composting.
  - 5.3.2 Major food scrap recycling challenges that had to be overcome in the last year or are ongoing, such as odor, staff training, or availability of organics recyclers.
- 5.4 Concerns or problems complying with the requirements of this Section.
- 5.5 Reports submitted pursuant to this Section shall include a certification in a form acceptable to the [insert name of municipal department].

**6.0 Methods for Quantifying Food Waste Generation and Surplus Food Donation:**<sup>15</sup> Covered entities shall use one or more of the following methods to determine the weight of their generated food waste and surplus food (expressed in pounds/tons):

- 6.1 Directly measuring the generated food waste or surplus food with an instrument or device marked in standard units:
  - 6.1.1 Sampling and scaling data may be used in lieu of measuring total food waste or surplus food generated, provided reporting requirements in Section 5 are followed.
  - 6.1.2 Records obtained from waste haulers and processors with which the covered entity has a contractual relationship may be relied upon to quantify the amount of generated food waste and recycled food scraps.

<sup>14</sup> Federal liability protection applies to donations to nonprofit organizations. Bill Emerson Good Samaritan Food Donation Act of 1996, 42 U.S.C. § 1791, <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title42-section1791&num=0&edition=prelim>. Some states, such as Tennessee, provide broader liability protection and cover donations to individuals as well. Tennessee Code § 53-13-103 (2020), <https://casetext.com/statute/tennessee-code/title-53-food-drugs-and-cosmetics/chapter-13-liability-of-free-food-distributors/section-53-13-103-immunity-of-distributing-organization-from-liability>. In addition, legislation is pending that would extend federal liability protection to certain direct donations to individuals. Food Donation Improvement Act of 2021, S.3281, 117th Cong. (2021), <https://www.congress.gov/bills/117th-congress/senate-bill/3281/text?r=4&s=1>.

<sup>15</sup> The Food Loss and Waste Protocol's Food Loss and Waste Accounting and Reporting Standard (FLW Standard) addresses additional methods that are not included in the Model because of the level of skill and expertise necessary to use them, as well as concerns about reliability, quality, and completeness of data. World Resources Institute (WRI) et al., *Food Loss and Waste Accounting and Reporting Standard*, Food Loss and Waste Protocol, 2016, [https://flwprotocol.org/wp-content/uploads/2017/05/FLW\\_Standard\\_final\\_2016.pdf](https://flwprotocol.org/wp-content/uploads/2017/05/FLW_Standard_final_2016.pdf). A municipality may opt, however, to authorize the use of additional methods. Conversely, a municipality could opt to eliminate some of the methods based on its own analyses of the considerations highlighted in Table 7.2 of the FLW Standard. Ibid., 63. The approximation methods included in the Model are based on the FLW Standard and on *Guidance on FLW Quantification Methods* (FLW Guidance). Ibid.; WRI et al., *Guidance on FLW Quantification Methods*, Food Loss and Waste Protocol, 2016, [https://flwprotocol.org/wp-content/uploads/2017/06/FLW-Protocol\\_Guidance-on-FLW-Quantification-Methods.pdf](https://flwprotocol.org/wp-content/uploads/2017/06/FLW-Protocol_Guidance-on-FLW-Quantification-Methods.pdf).

6.1.3 Records obtained from nonprofit organizations that accept surplus food may be relied upon to quantify surplus food donations.<sup>16</sup>

6.2 Employing approximation methods to generate weight estimates (expressed in pounds/tons) using the following methods:

6.2.1 Counting: assessing the number of items that make up food waste and using the result to estimate the weight.

6.2.2 Volume: assessing the physical space occupied by food waste and using the result to estimate the weight or relying on approximations provided by waste haulers and processors with which the covered entity has a contractual relationship.

6.2.3 Records: using individual pieces of data that have been written down or saved and that are often routinely collected for reasons other than quantifying food waste, such as warehouse record books.

6.3 If a method used pursuant to this Section produces results that are not expressed in weight—such as unit counts of items or volume—covered entities shall convert the results to weight (expressed in pounds/tons).<sup>17</sup>

**7.0 Business Education and Compliance Assistance:**<sup>18</sup> The [name of municipal department] shall provide educational materials and compliance assistance during the [calendar or fiscal] year prior to the effective date in Section 11 and, thereafter, on an ongoing basis.

7.1 Educational materials shall address:

7.1.1 Benefits of food waste reduction.

7.1.2 Benefits of measuring food waste.

7.1.3 Resources to facilitate measures to prevent food from going to waste, rescue surplus food, and recycle food scraps.

7.2 Compliance assistance shall include:

7.2.1 A platform for receiving and responding to compliance questions from covered entities.

7.2.2 Resources on methods for quantifying food waste generation pursuant to Section 6.

7.2.3 Such other materials determined to be useful in aiding timely and effective compliance.

7.3 All educational and compliance assistance materials shall be appropriately translated<sup>19</sup> for businesses in communities with a substantial number of business owners who speak non-English languages.

**8.0 Record Keeping:**<sup>20</sup> Covered entities shall maintain records created for purposes of complying with the requirements in Sections 6 and 7 for a period of three years from the date of the filing of a report, and the records shall be submitted by covered entities upon request of [insert name of municipal department] within five business days of such request either by postal or electronic mail.

16 Covered entities may opt to use other methods to quantify their surplus food donations as well. Other acceptable approaches are outlined in Appendix E of the FLW Standard. WRI et al., *FLW Standard*, 136-139.

17 There are numerous resources for converting measurements into units of weight, including the FLW Guidance (see chapter 3, “Assessing Volume”) and the New Hampshire Department of Environmental Services’ volume-to-weight conversion factors. WRI et al., *Food Loss and Waste Guidance*; New Hampshire Department of Environmental Services, “Volume-to-Weight Conversion Factors,” accessed May 4, 2022, <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/vol-to-weight-conversion.pdf>. If the composition of the food waste being converted is not known, entities may use the Environmental Protection Agency’s standard conversion factor for uncompacted mixed municipal solid waste (MSW): 1 yd<sup>3</sup> mixed MSW = 250 to 300 lbs. Office of Resource Conservation and Recovery, “Volume-to-Weight Conversion Factors,” U.S. Environmental Protection Agency, April 2016, [https://www.epa.gov/sites/default/files/2016-04/documents/volume\\_to\\_weight\\_conversion\\_factors\\_memo\\_randum\\_04192016\\_508fnl.pdf](https://www.epa.gov/sites/default/files/2016-04/documents/volume_to_weight_conversion_factors_memo_randum_04192016_508fnl.pdf).

18 Some states and municipalities, including Austin and Washington, DC, support implementation of food waste diversion requirements with free online educational resources, which can include consultations and trainings. Austin Resource Recovery, “Commercial Organics Diversion Requirements,” City of Austin, accessed February 25, 2022, <https://www.austintexas.gov/bizorganics>; Zero Waste DC, “Resources - Businesses,” accessed May 13, 2022, <https://zerowaste.dc.gov/node/1269391>. See, for example, the online form for Alameda County, California. Alameda County Waste Management Authority, “Request Assistance,” accessed May 13, 2022, <https://www.recyclingrulesac.org/request-assistance>.

19 See Jordan Perry and Linda Breggin, “Overview of Multilingual Outreach, Translation, and Language Justice Resources,” Environmental Law Institute, May 2022, <https://www.eli.org/food-waste-initiative/publications>.

20 Many state and municipal diversion laws and ordinances include some form of record-keeping requirements, including California, Boulder, and Honolulu. CalRecycle, Short-Lived Climate Pollutants Regulations of 2020, California Code of Regulations, tit. 14, § 18991.4, <https://www2.calrecycle.ca.gov/Docs/Web/118371>; Boulder, Colorado, Municipal Code, regs. § 6-3-13-6-3-14, [https://library.municode.com/co/boulder/codes/municipal\\_code?nodeId=TIT6HESASA\\_CH3TRRECO\\_6-3-13PROWRERECOCO](https://library.municode.com/co/boulder/codes/municipal_code?nodeId=TIT6HESASA_CH3TRRECO_6-3-13PROWRERECOCO); Revised Ordinances of Honolulu, ch. 9 § 9-3.5(i), Honolulu, Hawaii, [https://www.honolulu.gov/rep/site/ocs/roh/ROH\\_Chapter\\_9\\_.pdf](https://www.honolulu.gov/rep/site/ocs/roh/ROH_Chapter_9_.pdf).



**9.0 Waivers:** Covered entities may apply for a waiver from the reporting requirements in Section 5 in any [fiscal or calendar] year. Applications shall be submitted at least sixty (60) days prior to the start of the [fiscal or calendar] year for which a waiver is requested. Waivers may be granted on a case-by-case basis upon a written finding that the facts presented by the applicant support a finding of undue hardship as defined in Section 3. The [name of municipality] shall notify the covered entity within a thirty (30) day review period whether a waiver has been granted or denied. Interim waiver applications that present new and extenuating circumstances of undue hardship will be accepted throughout the course of the reporting year. The [name of municipality] shall respond to interim waiver requests within thirty days.

**10.0 Enforcement:**<sup>21</sup> Any covered entity that violates Sections 5 or 8 shall be liable for civil penalties, to the extent permissible under state law, in an amount not to exceed [dollar amount consistent with comparable municipal code sections]. A warning<sup>22</sup> shall be issued for any violation by a covered entity that occurs during the first twelve months after the effective date of this Ordinance.

**11.0 Effective Date:** This Ordinance takes effect [number of days] after its [adoption/publication].

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21 States and municipalities may set the amounts and procedures for collecting penalties. See, for example, New Jersey and New York City. Act Concerning Food Waste Recycling and Food Waste-to-Energy Production, New Jersey, P.L. 2020, ch. 24, [https://pub.njleg.gov/bills/2020/PL20/24\\_PDF](https://pub.njleg.gov/bills/2020/PL20/24_PDF); Local Laws for the City of New York 2013, no. 146, New York City Council, <https://legistar.council.nyc.gov/View.ashx?M=F&ID=2938762&GUID=83DD7B35-A9B2-4A5C-B945-10FD36549049>. Enforcement strategies require careful consideration of equity impacts. See the U.S. Department of Justice's Comprehensive Environmental Justice Enforcement Strategy (a road map for advancing environmental justice through remedies for systemic environmental violations in historically marginalized and overburdened communities). Office of the Associate Attorney General, "Comprehensive Environmental Justice Enforcement Strategy," U.S. Department of Justice, May 5, 2022, <https://www.justice.gov/asg/page/file/1499286/download>. See also the Urban Institute's *Following the Money on Fines and Fees for how the way state and local fines are enforced "can create unjust burdens."* Aravind Boddupalli and Livia Mucciolo, *Following the Money on Fines and Fees: The Misaligned Fiscal Incentives in Speeding Tickets*, Urban Institute, January 2022, [https://www.urban.org/sites/default/files/publication/105331/following-the-money-on-fines-and-fees\\_final-pdf.pdf](https://www.urban.org/sites/default/files/publication/105331/following-the-money-on-fines-and-fees_final-pdf.pdf).

22 Some municipalities, such as Austin and San Francisco, provide warning periods during initial implementation of food waste diversion requirements to foster education and provide compliance support to covered entities. Institute for Local Self-Reliance, "Austin, TX – Universal Recycling Ordinance," last modified July 14, 2021, <https://ilsr.org/rule/food-scrap-ban/austin-tx-universal-recycling/>; Brenda Platt, "San Francisco, CA – Composting Rules," Institute for Local Self-Reliance, last modified July 21, 2021, <https://ilsr.org/rule/food-scrap-ban/san-francisco/>.