SITE PLAN CRITERIA
FOR
MUNICIPAL SOLID WASTE & RECYCLABLES
STORAGE & ENCLOSURE REQUIREMENTS

April 2009

General Solid Waste and Recycling Service Responsibilities:

The City of Denton is the exclusive provider for the collection, transportation and disposal of municipal solid waste (MSW) and some non-hazardous wastes within the city limits of Denton. Both the generator of municipal solid waste and the property owner have the responsibility for the proper management, storage, collection, transportation and disposal of solid waste in accordance with federal, state, and city regulations.

Commercial solid waste and recycling storage facilities (container enclosures) shall be located on each platted tract of commercial property, except as otherwise provided within these criteria, and shall be constructed by the commercial property owner or developer, and made available for use by the City of Denton Solid Waste Department and/or commercial recycling service provider. For purposes of these solid waste requirements, commercial property represents any attached residential arrangement of 4 or more living units and all non-residential property. Proper construction of the container enclosures shall be completed prior to final acceptance of the development or property by the City’s Planning and Inspection Departments.

Commercial property on-site waste and recycling storage facilities (container enclosures) shall be available for the storage of all municipal solid waste and recyclables generated for each platted property. Some specific areas of the City of Denton (Downtown Square, strip centers, etc) may be recommended for shared container service. Container enclosures shall be of adequate size to contain all solid and liquid wastes and recyclables generated on the property, which may include, but are not limited to municipal solid waste, recyclables, grease and oils, process by-products and wastes, hazardous waste, medical waste, and any special wastes. The container enclosure shall be constructed to such capacity as to contain the aforementioned wastes and recyclable materials generated between scheduled collection service days.

Commercial Business Categories:

Commercial, industrial, and institutional establishments will be provided municipal solid waste and recycling collection services by the City of Denton Solid Waste Services Department using front load and/or roll-off container(s).

The general types of business services or land use establish the business categories.

- **Business Categories:**
  a. Multi-family residential developments with four or more living units
  b. General Office
  c. General Commercial / Warehousing / Indoor Recreation
d. Shopping Centers / Mixed Use / Light Manufacturing  
e. Restaurant / Bars / Grills / Grocery Stores / Food Service & Food Processing / Industrial  
f. Department Stores / Service Station / Supermarket  
g. Other

- **Solid Waste and Recycling Design Factors:**
  - a. Type of business (Business Category) and waste generation potential  
  - b. Waste generation of similar businesses  
  - c. Square footage of the development and structures, and the number of floors  
  - d. Location of the business  
  - e. Hours of business operation  
  - f. Business site plan  
  - g. Phased development and future use plans

**Solid Waste and Recyclables Storage Enclosure Requirements:**

The Solid Waste and Recyclables enclosure information shall be contained within engineering drawings and specifications, and other written documentation submitted to the City of Denton. The submittal of the required materials shall be concurrently with the building permit application. Construction of enclosures(s) shall be completed prior to the issuance of a certificate of occupancy. Submittals to the City of Denton should include the following.

- Drawings of container enclosure location(s) per scale on a site drawing.  
- Drawings delineating the ingress / egress service pathway sufficient for the safe movement and travel of Class 7 collection vehicles.  
- Drawings containing enclosure construction specifications.

Proposed future growth and phased development shall be considered in the site design with regard to sizing, location(s), and access of future solid waste and recyclables storage enclosures. Refuse and recycling areas necessary for future growth shall be available for development, but need not be developed, nor enclosures constructed, until the future growth occurs.

**Storage Space and Enclosure Accommodation Requirements:**

The site plan must contain adequate enclosure space for solid waste and recyclables storage containers. The following list provides the typical container storage area requirements, based on industry waste generation rates for the listed business categories, by which solid waste and recyclables storage containers shall be required.
Dimension Format:
Refuse and Recyclables enclosure area requirements are provided, by width and depth, and represent outside wall dimensions (OD).

Example: 13.0 feet wide by 10.5 feet deep.
Standard drawings with construction specifications are included in Appendix A. Enclosure requirements, by width and depth, are provided below.

- **Multi-Family Residential Units:** Applicable to multi-family residential facilities with four or more living units. Multi-family residential facilities with buildings greater than two stories, and with greater than 5,000 gross square feet on any floor, shall have at least one refuse collection chute for each floor above the ground floor, which will deliver refuse to a central refuse storage room. Adequate solid waste storage area is required if common or other public areas are provided, i.e. pools, sports areas, recreation and meeting rooms, maintenance facilities, etc.

  - 1 - 25 units
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
  - 26 – 48 units
    - Two enclosures 13.0 ft. wide by 10.5 ft. deep
    - One enclosure 24.5 ft. wide by 10.5 ft. deep
  - 49 – 64 units
    - One enclosure 13.0 ft. wide by 10.5 ft. deep and a second enclosure 24.5 ft. wide by 10.5 ft. deep
    - Three enclosures 13.0 ft. wide by 10.5 ft. deep
  - 65 – 200 units
    - Four enclosures 13.0 ft. wide by 10.5 ft. deep
    - Two enclosures 24.5 ft. wide by 10.5 ft. deep
    - One roll-off enclosure 16 feet wide with the depth to be determined by the compactor size selected

- **General Office:**
  - 1,001 – 10,000 sq. ft.
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
  - 10,001 – 25,000 sq. ft.
    - Two enclosures 13.0 ft. wide by 10.5 ft. deep
    - One enclosure 24.5 ft. wide by 10.5 ft. deep
  - 25,001 – 50,000 sq. ft.
    - Two enclosures 13.0 ft. wide by 10.5 ft. deep
    - One enclosure 24.5 ft. wide by 10.5 ft. deep
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
and a second enclosure 24.5 ft. wide by 10.5 ft. deep
or,
Three enclosures 13.0 ft. wide by 10.5 ft. deep

50,001 – 100,000 sq. ft. One enclosure 13.0 ft. wide by 10.5 ft. deep
and a second enclosure 24.5 ft. wide by 10.5 ft. deep
or,
Three enclosures 13.0 ft. wide by 10.5 ft. deep
or,
Four enclosures 13.0 ft. wide by 10.5 ft. deep
or,
Two enclosures 24.5 ft. wide by 10.5 ft. deep
or,
One roll-off enclosure 16 feet wide with the depth to be determined by the compactor size selected

- General Commercial / Warehousing / Indoor Recreation:
  1,001 – 5,000 sq. ft. One enclosure 13.0 ft. wide by 10.5 ft. deep
  5,001 – 15,000 sq. ft. Two enclosures 13.0 ft. wide by 10.5 ft. deep
  or,
  One enclosure 24.5 ft. wide by 10.5 ft. deep
  15,001 – 50,000 sq. ft. One enclosure 24.5 ft. wide by 10.5 ft. deep
  or,
  Three enclosures 13.0 ft. wide by 10.5 ft. deep
  or,
  One enclosure 24.5 ft. wide by 10.5 ft. deep and a second enclosure 13.0 ft. wide by 10.5 ft. deep
  50,001 - 100,000 sq. ft. One enclosure 13.0 ft. wide by 10.5 ft. deep
  and a second enclosure 24.5 ft. wide by 10.5 ft. deep
  or,
  Three enclosures 13.0 ft. wide by 10.5 ft. deep
  or,
  Two enclosures 24.5 ft. wide by 10.5 ft. deep
  or,
  Four enclosures 13.0 ft. wide by 10.5 ft. deep
  or,
  One roll-off enclosure 16 feet wide with the depth to be determined by the compactor size selected
- **Shopping Center / Mixed Use / Light Manufacturing:**

  - 1,001 – 2,500 sq. ft.  
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
  - 2,501 – 10,000 sq. ft.  
    - Two enclosures 13.0 ft. wide by 10.5 ft. deep
    - Or,
    - One enclosure 24.5 ft. wide by 10.5 ft. deep
  - 10,001 – 50,000 sq. ft.  
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
    - And a second enclosure 24.5 ft. wide by 10.5 ft. deep
    - Or,
    - Three enclosures 13.0 ft. wide by 10.5 ft. deep
  - 50,001 – 100,000 sq. ft.  
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
    - And a second enclosure 24.5 ft. wide by 10.5 ft. deep
    - Or,
    - Four enclosures 13.0 ft. wide by 10.5 ft. deep
    - Or,
    - Two enclosures 24.5 ft. wide by 10.5 ft. deep
    - Or,
    - One roll-off enclosure 16 feet wide with the depth to be determined by the compactor size selected
  - 100,001 – 200,000 sq. ft.  
    - Four enclosures 13.0 ft. wide by 10.5 ft. deep
    - Or,
    - Two enclosures 24.5 ft. wide by 10.5 ft. deep
    - Or,
    - Two roll-off enclosures 16 feet wide with the depth to be determined by the compactor size selected

- **Restaurant / Bars / Grills / Grocery Stores / Movie Theatres and other food service establishments:** Square footage requirements include all indoor floor area, and all outdoor areas used to provide business services, excluding parking.

  - 1,001 - 2,500 sq. ft.  
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
  - 2,501 - 7,500 sq. ft.  
    - Two enclosures 13.0 ft. wide by 10.5 ft. deep
    - Or,
    - One enclosure 24.5 ft. wide by 10.5 ft. deep
  - 7,501 - 15,000 sq. ft.  
    - One enclosure 13.0 ft. wide by 10.5 ft. deep
    - And a second enclosure 24.5 ft. wide by 10.5 ft. deep
    - Or,
    - Three enclosures 13.0 ft. wide by 10.5 ft. deep
    - Or,
One roll-off enclosure 16 feet wide with the depth to be determined by the compactor size selected

- **Department Store / Supermarket / Service Station:**
  - **1,001 – 5,000 sq. ft.:**
    - Two enclosures 13.0 ft. wide by 10.5 ft. deep
    - One enclosure 24.5 ft. wide by 10.5 ft. deep
  - **5,001 – 25,000 sq. ft.:**
    - Two enclosures 13.0 ft. wide by 10.5 ft. deep
    - One enclosure 24.5 ft. wide by 10.5 ft. deep
    - One enclosure 13.0 ft. wide by 10.5 ft. deep and a second enclosure 24.5 ft. wide by 10.5 ft. deep
    - Three enclosures 13.0 ft. wide by 10.5 ft. deep
  - **25,001 – 50,000 sq. ft.:**
    - One enclosure 13.0 ft. wide by 10.5 ft. deep and a second enclosure 24.5 ft. wide by 10.5 ft. deep
    - Three enclosures 13.0 ft. wide by 10.5 ft. deep
    - Four enclosures 13.0 ft. wide by 10.5 ft. deep
    - Two enclosures 24.5 ft. wide by 10.5 ft. deep
  - **50,001 – 100,000 sq. ft.:**
    - Four enclosures 13.0 ft. wide by 10.5 ft. deep
    - Two enclosures 24.5 ft. wide by 10.5 ft. deep
    - Two roll-off enclosures, each 16 feet wide, with the depth to be determined by the compactor size selected
    - One roll-off enclosure, 30 feet wide, with the depth to be determined by the compactor size selected

Commercial and business establishments, institutions, and other businesses, which are not specifically listed in the above storage space and enclosure requirements, will be reviewed for adequate solid waste and recyclables enclosures based on site-specific information and Solid Waste and Recycling Design Factors.
General Container Enclosure Information:

- Enclosures may contain other storage containers such as grease and oil receptacles, and other items, as long as the enclosure is enlarged to accommodate the additional items.

- Gates shall be required if when viewed from the street, the interior of the enclosure is visible.

- Personal access side gates are recommended as a feature of all gated enclosures.

- In industrial zoned sites, the City of Denton will have no enclosure requirements where the containers are not visible from public roads.

- The property owner is responsible for maintenance of the enclosure.

- Businesses of 500 square feet or less will be evaluated by city staff to determine the applicability of constructing an enclosure. Refuse carts may be appropriate, thereby eliminating the need for construction of an enclosure.

- The use of cart storage for property converted from residential to non-residential use can be accommodated if the property converted is a structure of less than 2,500 gross square feet, has a waste generation rate applicable for cart service, and commercial cart service is available in the area.

Enclosure Construction Information:

- Containers for commercial solid waste and recycling service shall be screened from public view.

- Front load enclosures shall have walls constructed to a minimum 6-foot height, or as tall as required to conceal the container. Compactor enclosure walls require construction a minimum of 8 feet in height in order to conceal the compactor and mechanical equipment.

- Materials used for container enclosure construction shall be compatible with the main building architecture and appearance and may include:
  - Concrete Block – Tinted, colored, painted, or with textured facing
  - Concrete – Poured or tilt wall construction
  - Brick - Double brick thickness minimum
  - Stone
  - Metal
  - Wood
  - Vinyl
  - Composite Material
  - Combinations of the above materials
Container enclosures shall be maintained in a state of good repair at all times.

Refuse containers which are not visible to the public are not required to be enclosed.

All refuse and recyclable materials shall be contained within the enclosed refuse and recyclables area.

**Enclosure Access, Placement, Ingress and Egress Requirements:**

- Property owners shall design and construct enclosures, and enclosure access requirements, which are in compliance with the requirements of Chapter 469 of the Texas Government Code and the Texas Accessibility Standards.

- The solid waste enclosure shall not be located in a fire lane, public right-of-way, public utility easements, or sidewalk area.

- No solid waste or recyclable enclosure shall be located within the required front yard or protrude in front of any buildings along the designated lot frontage.

- The location of solid waste enclosures may not cause the obstruction of traffic for excessive lengths of time while being serviced.

- The solid service truck shall be on the property owner’s property during service operations, if the site design permits.

- Ingress and egress routes shall be designed to facilitate exiting the property in a forward driving direction for all interstate and state roads, arterial streets, and collector streets with four lanes.

- Utility wires and structure overhangs should have a minimum height clearance of 20 feet along the ingress and egress route. No utility wires shall extend over the enclosure approach and service area.

- Dead end streets, which are planned for extension in future development phases, will have sufficient all weather turn around areas for Class 7 trucks constructed of a suitable road base material.

**Compactor Requirements:**

- The customer is responsible for providing a ¾” hose bib within 20 feet of the compactor enclosure. The hose bib shall meet all City of Denton plumbing code requirements.

- In specific wet waste situations the compactor site shall contain a minimum 12” by 12” screened sand or grit trap catch basin connected to a minimum 4” wastewater drain, which shall be connected to the City’s sanitary sewer system.
Wastewater drain construction specifications shall comply with all City of Denton code requirements.

**Site Design Review Procedure:**

Pursuant to the Staff Review Procedure set forth in §35.3.7 of the Denton Development Code, development review staff may consider other solid waste and recyclables service options meeting or exceeding the solid waste and recyclables storage and enclosure design objectives.

**Solid Waste Criteria for Approval:** The solid waste and recyclables storage and collection goals and objectives, which must be met, and are required prior to approval are:

1. Assure that the proposed plan allows for sufficient access for police, fire, and health & safety personnel, and meets all federal, state, and municipal laws and ordinances providing for the health, safety, and well being of Denton’s citizens.
2. Assure that the proposed plan allows for sufficient storage area, between collections, for all refuse and recyclables.
3. Submittal of annual historical documentation from similar developments that provides actual refuse and recyclables volumes on a weekly basis.
4. Assures that the future growth and/or an alternate use of the site can accommodate the waste generation standards listed within this criteria document.
SERVICE ENTRANCES MAY BE CONSTRUCTED IF DESIRED

STANDARD BOLLARD

4 Ft.

CONTAINER

8.0 Ft.

25.5 Ft.

4 Ft.

4 Ft.

10.5 Ft.

DROP ROD (4 TOTAL)

CONCRETE APPROACH PAD

12 FT. MIN. CLEAR AREA WHEN GATE IS OPEN

COMBINATION BOLLARD & GATE POST (3 TOTAL)

12 FT. MIN. CLEAR AREA WHEN GATE IS OPEN

PROVIDE 50 FT. OR MORE OF UNOBSCTURED TRUCK ACCESS IN FRONT OF EACH CONTAINER.

(SEE DRAWING #3)

STEEL TUBULAR FRAME

APPROVED SOLID COVER MATERIAL*

6 IN. CLEARANCE BETWEEN GATE AND PAD

COMBINATION BOLLARD & GATE POST (3 TOTAL)

6 IN. PAD

CONTAINER ENCLOSURE WITH GATES

24.5' X 10' (I.D.) ENCLOSURE FRONT-LOAD

* WOOD OR CHAIN LINK COVERING IS NOT ACCEPTABLE
- GATES ARE OPTIONAL

Drawing Number: 1

DENTON
SOLID WASTE
STATIONARY COMPACTOR (VARIABLE LENGTH) SEE NOTE

ROLL-OFF RECEIVING CONTAINER

15 FT. MIN. CLEAR AREA WHEN GATE IS OPEN

COMBINATION BOLLARD & GATE POST (2 TOTAL)

DROP ROD (2 TOTAL)

PROVIDE 50 FT. OR MORE UNOBS'D TRUCK ACCESS IN FRONT OF EACH CONTAINER. (SEE DRAWING #3)

APPROVED SOLID COVER MATERIAL**

STANDARD BOLLARD

*THIS DIMENSION IS FOR A GIBRALTAR 3CY COMPACTOR MODEL GP2350. IF A DIFFERENT COMPACTOR MODEL IS USED CHANGE THIS DIMENSION TO PROVIDE FOR THE COMPACTOR'S OVERALL LENGTH. IF AN OPEN TOP CONTAINER, DELETE THIS DIMENSION.

15 FT. MIN. CLEAR AREA WHEN GATE IS OPEN

COMBINATION BOLLARD & GATE POST (2 TOTAL)

STEEL TUBULAR FRAME - 8 IN. CLEARANCE BETWEEN GATE AND PAD

**WOOD OR CHAIN LINK COVERING IS NOT ACCEPTABLE - GATES ARE OPTIONAL

CONTAINER ENCLOSURE WITH GATES
15' X 42' (I.D.) ENCLOSURE
ROLL-OFF: OPEN TOP OR/STATIONARY (3 CY SHOWN)

Drawing Number: 2

Drawn By: Clay Riggs Date: Feb. 2006

REV. COMMENTS DATE
1. 
2. 

DENTON SOLID WASTE
THE CONTAINER ACCESS AREA MUST BE CLEAR OF ALL OBJECTS (AS SHOWN) IN ORDER FOR THE TRUCK TO ALIGN ITSELF WITH THE CONTAINER.
**STANDARD BOLLARD DETAIL**

(TO REAR OF CONTAINERS, INSIDE OF ENCLOSURES)

- 6 in. concrete surrounds pipe in all directions
- Round or square steel tube with 3/8 in. wall thickness
- 6 in. thick dumpster pad for front-load containers
- 8 in. thick dumpster pad for roll-off containers

**DROP ROD DETAIL**

- Drop rod
- Steel brackets
- Steel pipe placed at both open and closed positions of each gate

**COMBINATION BOLLARD & GATE POST DETAIL**

- 6 in. concrete surrounds pipe in all directions
- 6 ft. min. for front-load container enclosure
- 8 ft. min. for roll-off container enclosure
- Square steel tube with 3/8 in. wall thickness
- 6 in. thick approach pad for front-load containers
- 8 in. thick approach pad for roll-off containers

**COMBINATION BOLLARD / GATE MOUNTING DETAIL**

- Front load enclosure center combination bollard & gate post
- Hinge

**BOLLARD & DROP ROD DETAILS**

Drawing Number: 4
### APPENDIX B

Subchapter 13
Development Code

**Expansion Applicability Table**

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<th>Use</th>
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<th>Landscape &amp; Tree Standards</th>
<th>Building Design Standards</th>
<th>Parking Lot Design Standards</th>
<th>Street Trees</th>
<th>Site Plan Impact &amp; Tree Design Standards</th>
<th>Canopy Standards</th>
<th>Landscaping Standards</th>
<th>Solid Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family expansion within permitted lot coverage.</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Multi-family expansion of 10% of the number of units or 10 units, whichever is less.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Non-residential expansion of 1,000 sq ft or 25%, whichever is greater.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Casualty loss replacements for all uses that exceed the above determined thresholds.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Reconstruction after any voluntary demolition of all or substantially all improvements on a site.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Parking lot expansion (excluding re-stripping) of six spaces or more.</td>
<td>Yes</td>
<td>NA</td>
<td>Must meet site compliance</td>
<td>NA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Conversion of a residential structure to a non-residential use where no site improvements are required.</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Yes</td>
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</tr>
</tbody>
</table>