

TCEQ Interoffice Memorandum

To: Commissioners' Work Session

Thru: Brent Wade, Deputy Director
Office of Waste
Earl Lott, Director
Waste Permits Division

From: Charly Fritz, Manager
Business and Programs Services Section

Date: August 3, 2016

Subject: Consideration and Adoption of the City of Dallas Local Solid Waste Management Plan

Issue

The City of Dallas has developed and submitted to the agency for approval, a Local Solid Waste Management Plan in accordance with Texas Health and Safety Code, Chapter 363, Subchapter D, relating to Regional and Local Solid Waste Management Plans; and 30 Texas Administrative Code (TAC), Chapter 330, Subchapter O, relating to Regional and Local Solid Waste Management Planning and Financial Assistance General Provisions. The city's plan establishes goals, objectives, and recommended actions regarding the proper management of solid waste within the City of Dallas. The executive director has made a preliminary determination that this plan complies with the statutory and regulatory requirements and conforms to the goals and objectives of the Regional Solid Waste Management Plan prepared by the North Central Texas Council of Governments and adopted by the commission during a Work Session on May 31, 2007.

The executive director recommends adoption of the local plan in accordance with 30 TAC §330.641(c).

Background

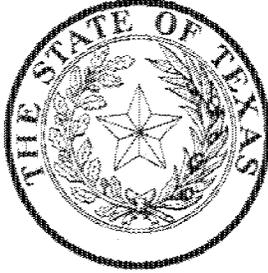
Regional solid waste management plans have been prepared by each of the 24 council of governments (COGs). The regional plans are required to identify

overriding and long-term concerns, goals, objectives, and recommendations for solid waste management in the COG's regional planning area.

Solid waste management plans are bifurcated into two volumes. Volume I includes a general description of the region's solid waste management goals and is considered for adoption by the commission. Volume II contains the details of the plan. Consideration for approval of Volume II has been delegated to the executive director.

The commission adopted 24 regional plans, Volume I, at a Work Session on May 31, 2007. The executive director approved 24 regional plans, Volume II, on September 6, 2007. The regional plans were updated in 2007 in response to the creation of the Regional Solid Waste Grants Program and revisions to the state solid waste management plan.

Local governments may develop and request approval of a local plan that conforms to the goals and directives of the adopted regional plan in effect for the region encompassing the jurisdiction of the local government. The City of Dallas Solid Waste Management Plan is the first local plan submitted to the commission by a local government. The City of Dallas complied with public participation and administrative requirements including public notice, public meeting, formal approval of the local plan by the city council and formal approval of the plan by the North Central Texas Council of Governments.



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

VOLUME I: LOCAL SOLID WASTE MANAGEMENT PLAN
adopted under provisions of Texas
Health & Safety Code Ann.
Chapter 363 (Vernon)

Name of Local Government:

City of Dallas
Sanitation Services
3112 Canton Street, Suite 200
Dallas, Texas 75226

The contents of local solid waste management plans are specified in and shall conform to the requirements of the Texas Health & Safety Code §363.064; the plans provide the general structure to implement a local program.

This plan is adopted subject to the rules and orders of the Commission and laws of the State of Texas and it replaces any previously approved plan. Nothing in this plan exempts the City of Dallas from compliance with other applicable rules and regulations of the Texas Commission on Environmental Quality. This plan is valid until canceled, amended, or revoked by the Commission.

Pursuant to Title 30 Texas Administrative Code §330.647(a), this plan is adopted by reference into Chapter 330, Subchapter O.

ADOPTED in accordance with Title 30 Texas Administrative Code Chapter 330.

ADOPTION DATE:

For the Commission

VOLUME I: LOCAL SOLID WASTE MANAGEMENT PLAN

SECTION I – NAME AND DESCRIPTION OF LOCAL GOVERNMENT

A. This Local Plan pertains to the City of Dallas, Texas (hereafter called City).

SECTION II – LOCAL PLAN

A. Local Goals

- (1) Goal #1: Transition to a more sustainable material management system regarding waste and recyclable materials generated within the City.

Objective #1A: 40% diversion by 2020

Objective #1B: 60% diversion by 2030

Objective #1C: Maximize diversion by 2040

B. Waste Minimization, Waste Reuse, Recycling & Education

- (1) The City operates a number of diversion programs to reduce the volume of materials requiring landfill disposal including:

- Collection of residential recyclable items
- Big Blue Recycling Drop-off sites
- Brush collection
- Electronics recycling
- Landfill diversion targeting metals, concrete, asphalt, sawdust, clean soil and brush

- (2) The City will achieve a greater degree of waste minimization and waste recycling and reuse in three steps.

- Increasing the diversion associated with voluntary programs by:
 - Providing separate collection of organics
 - Bulk item reuse
 - Social marketing campaigns
 - Providing Technical assistance
 - Development of ordinances or incentive programs
- Implementing mandatory requirements for source separation.
- Processing the remaining solid waste to recover reusable materials prior to landfilling.

- (3) Household hazardous waste from the City of Dallas is managed by the Dallas Area Household Hazardous Waste Network under a cooperative agreement with a number of municipalities.

(4) The City has established the following Recycling or diversion rate goals:

- 40% by 2020
- 60% by 2030
- Maximize diversion by 2040

(5) The City has adopted the “Don’t Bag It” program for lawn clippings and creates mulch from brush and other yard wastes. The creation of a compost operation, to possibly include food scraps, is recommended.

(6) The City received the 2011 Green City Award from *Waste & Recycling News* for having the most effective recycling education program for a large city in the U.S. These educational efforts will be continued.

C. Municipal Solid Waste Facilities – The City of Dallas will:

- (1) Continually assess the need for new waste disposal capacity;
- (2) Assess methods to optimize the available disposal capacity;
- (3) Cooperate with neighboring municipalities that need disposal capacity;
- (4) Maintain transfer station capacity to consolidate waste and recyclable loads to reduce the effects of traffic and air quality impacts.
- (5) Develop other infrastructure, as needed, to implement this Local plan.

Executive Summary

Why this Plan?

In spring 2011, the City of Dallas (City) began a planning process to identify the policies, programs, and infrastructure that will be needed to manage the discarded materials (municipal solid waste and recyclable materials) generated in the City over the next 50 years. The Local Solid Waste Management Plan (Plan) is the beginning of a long-term systematic effort to:

- Strive for sustainability by considering the entire life-cycle of products, processes, and systems;
- Demonstrate that the goals of economic growth, environmental stewardship and fiscal responsibility are inextricably linked;
- Reduce the volume and toxicity of discarded materials and maximize diversion from disposal; and,
- Spur economic growth by recovering valuable raw materials and clean energy from discarded materials.

Where is the City now?

The City operates a number of diversion programs to reduce the volume of discarded materials requiring landfill disposal. These include:

- Residential Recycling Collection – weekly collection provided to single-family residences using wheeled carts;
- Big Blue Recycling Drop-Off Sites – targeting multifamily residences and available to all generators;
- Brush Collection – monthly collection available to all residents;
- Electronics Recycling – drop-off program available to all residents;
- Pilot Recycling Programs – targeting multifamily residences and hotels; and,
- Landfill Diversion Programs – targeting metals, concrete, asphalt, sawdust, clean soil and brush.

What are the City's goals?

The City is now poised to transition its system from one focused on collection and disposal to one based on resource management. The City's goal is to strive for a more sustainable materials management system. To measure its progress toward this goal, the City has established the following objectives and timeframes.

The policies, programs and infrastructure described in this Plan will help the City to reach its waste reduction rates of:

- 40 percent diversion by 2020;
- 60 percent diversion by 2030; and,
- Zero Waste by 2040.

Once the City has reached its landfill diversion goals, it will continue to maintain its collection system, diversion programs and processing facilities through the 50-year planning period. In planning and implementing its new policies, programs and infrastructure, the City will monitor its successes and seek out new opportunities for innovation and advancement in policy and technology development.

What is Zero Waste?

Zero Waste is a philosophy and design framework that promotes not only reuse, recycling, and conservation programs, but also, and more importantly, emphasizes sustainability by considering the entire life-cycle of products, processes, and systems.

This comprehensive systems-approach promotes waste prevention by:

- Having products and packaging designed for the environment;
- Reducing the materials used in products and packaging;
- Using less toxic, more benign materials in production and manufacturing;
- Providing longer product lives by developing more lasting products; and,
- Having products that are repairable and easily disassembled at the end of their useful life.

“Zero Waste” does not mean 100% recycling. We may always have some residual materials that need to be landfilled. Communities striving for Zero Waste (such as Austin, Los Angeles and San Jose) have set goals of 80 to 90 percent diversion from landfills. The initiatives identified in this Plan are estimated to increase the citywide diversion rate to approximately 84 percent over the 50-year planning period. Product redesign and manufacturer responsibility will help communities reduce the amount of residual materials that can’t be reused, recycled or composted. The City will strive for Zero Waste and take an active role in supporting statewide and national initiatives, such as those developed by the Texas Product Stewardship Council, to create a more sustainable materials management system.

Who participated in the development of this Plan?

The Plan was prepared by the City of Dallas Sanitation Services Department with input from:

- **Solid Waste Advisory Committee (SWAC)** – formed to assist the City in the development of the Plan. Members of SWAC include representatives from public agencies, private sector service providers, and community groups;
- **Community members** – self-identified as stakeholders in the planning process, who participated in the City’s public workshops held on July 14th, 2011 and January 26, 2013;
- **HDR Engineering;**
- **CP&Y, Inc.;** and,
- **Risa Weinberger & Associates, Inc.**

What does the Plan do?

This Plan describes the policies and programs that could be implemented to achieve the City's goal of Zero Waste by 2040, with the interim steps of 40 percent diversion by 2020 and 60 percent by 2030.

To understand the effectiveness of the policies, programs and technologies identified by the stakeholders, the City estimated the diversion potential of the following key initiatives.

1. Encourage commercial haulers to provide recycling services to all of their customers—targeting multifamily and commercial generators.
2. Consider requirements for mandatory separation of recyclables and compostables from trash—targeting all generator sectors.
3. Develop a construction and demolition debris (C&D) ordinance and provide C&D technical assistance -- targeting roll-off and self-haul generators.
4. Advocate for extended producer responsibility at the state level and work with local retailers to increase take-back programs—targeting all generator sectors.
5. Provide separate collection for organics—targeting all generators.
6. Provide bulk item reuse and recycling—targeting all generators.
7. Undertake a social marketing¹ campaign—targeting all generator sectors.
8. Provide commercial technical assistance—targeting multifamily and commercial generators.
9. Develop a Resource Recovery Park at the landfill—targeting self-haul generators.
10. Develop a mixed materials processing facility to separate recyclables and compostables from trash—targeting all material streams.

What do we generate?

“Generation” is the sum of tons diverted (recyclable materials) plus tons disposed (municipal solid waste), and is used to determine the diversion rate.

Generation = Disposal + Diversion

In 2010, it is estimated that over 2.2 million tons of materials were generated within the City that were either diverted or disposed. Over 2.0 million tons were disposed in landfills and 192,000 tons were diverted from disposal through the City's current recycling programs (134,000 tons from Dallas' single-family single-stream recycling and the brush and bulky item collection programs). The 134,000 tons diverted from the single-family collection program represents almost 30% of the waste generated by single-family residents.

¹ Social marketing campaigns involve the systematic application of marketing alongside other techniques and tools to achieve specific social behavioral goals. McKenzie-Mohr, D. (2000). Fostering sustainable behavior through community-based social marketing. *American Psychologist*, 55(5), 531-537.

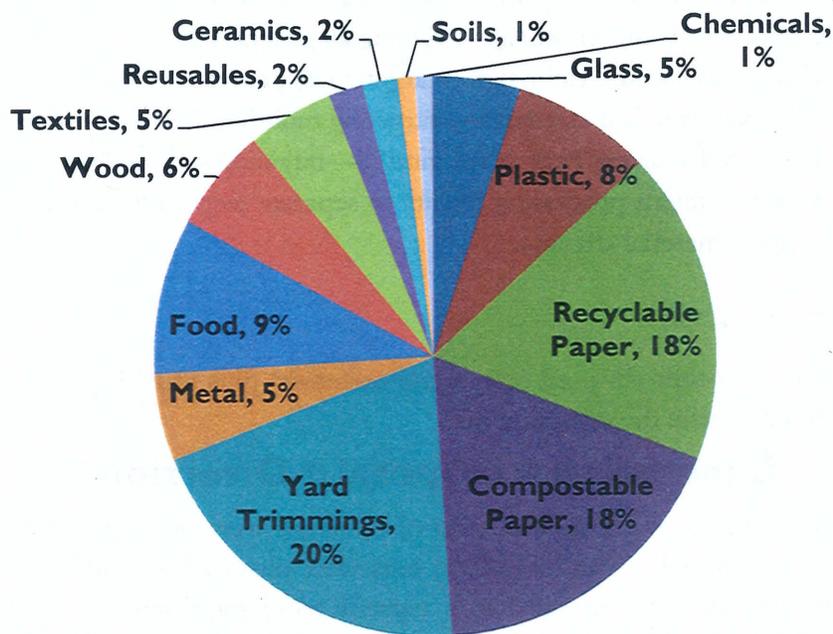
What is waste?

“Waste” consists of discarded materials most of which can be reused, recycled or composted.

To assist in the development of this Plan, a diversion model was created to evaluate the effects of the key initiatives on disposal and diversion throughout the City. The projected generation, diversion and disposal data for 2011 were used for the baseline tons and include estimates by generator type (single-family, multifamily, and commercial). The 2011 projections were extrapolated from the 2010 estimates based on anticipated population growth. This allows for a review of diversion increases based on new initiatives while maintaining the City’s existing level of diversion.

The Plan uses the following estimated waste characterization percentages published by North Central Texas Council of Governments (NCTCOG) in 2002 using data from the Texas Natural Resource Conservation Commission Strategic Plan 2001-2005.² The “other” material category was divided into additional types (textiles, reusables, ceramics, soils and chemicals). The “paper” material category was further divided into “recyclable paper” and “compostable paper.”³

Figure ES.1 Estimated Composition of Discarded Materials



² The Texas Natural Resource Conservation Commission (TNRCC) was the predecessor agency to the Texas Commission on Environmental Quality (TCEQ) which is the lead environmental agency within the State of Texas.

³ In accordance with Texas Health and Safety Code (TH&SC) 363.064(a)(1), all local solid waste management plans must address sludge. In fiscal year 2010, only 5,451 tons of sludges were disposed at the landfill from the City’s wastewater treatment plants. This minor quantity represents less than 1% of the waste delivered to the landfill during that time. Since the City has ample disposal capacity for these wastes, they are not considered in this Plan.

Source: *TNRCC Strategic Plan 2001-2005* with adjustments made by dividing the “other” category into textiles, reusables, ceramics, soils and chemicals and dividing the “paper” category into recyclable paper and compostable paper.

Diversion Projections

To estimate the diversion potential of the key initiatives identified in this Plan, the project team developed a diversion model. Based on the assumptions and calculations included in the diversion model (discussed in Appendix A, Task 4A), implementing the key initiatives will increase the citywide diversion rate to 84 percent.

Table ES.I Diversion Estimates by Generator

	Single-family	Multifamily	Commercial	Total
Diversion (tons)	575,000	539,000	1,307,000	2,421,000
Disposal (tons)	92,000	123,000	257,000	472,000
Total Generation	667,000	662,000	1,564,000	2,893,000
Diversion rate	86%	81%	84%	84%

Note: Figures may not sum due to rounding.

Single-family diversion estimates include the current single-family diversion rate of approximately 30%.

The diversion rates are presented as a snapshot in time assuming full implementation of all programs. In reality, policies and programs will be developed over time through additional research, testing, and pilot programs before the programs are fully implemented. Several policies will require new ordinances and regulations which will require City Council action and time to implement. Based on this analysis, the City can increase its diversion rate to at least 84 percent, a very high rate of diversion, by implementing the policies and programs described in this Plan.

Phasing Recommendations

The Plan includes a phased approach where increased outreach and technical assistance would be provided prior to mandatory requirements. The diversion results are based on the following three scenarios that build upon each other:

- **Increase voluntary programs** — City to provide separate collection for organics (for purpose of composting), bulk item reuse and recycling, social marketing campaign, commercial technical assistance, encourage commercial haulers to provide recycling services to all of their customers, develop a construction and demolition debris (C&D) ordinance or incentive program and provide C&D technical assistance, develop Resource Recovery Facility(ies) within the City, and work with local retailers to increase take-back programs for hard-to-recycle items and advocate for extended producer responsibility at the state level;
- **Implement mandatory requirements** — develop mandatory source-separation practices and reporting; and,
- **Process residual waste** — process all solid waste to recover reusable materials prior to landfilling.

Table ES.2 Diversion Estimates by Scenario¹

	Baseline (existing programs) ² 2011	Increasing voluntary programs 2020	Adding mandatory requirements 2030	Add residual waste processing ³ 2040
Diversion (tons)	160,000	1,011,000	1,856,000	2,421,000
Disposal (tons)	2,172,000	1,493,000	841,000	472,000
Total Generation	2,333,000	2,390,000	2,504,000	2,872,000
Diversion rate	7%	40%	69%	84%

¹Assumptions by program and material type are included in Appendix A.

²Baseline diversion estimates include the current single-family diversion tons only. Baseline disposal tons for 2011 are based on the estimated generation within the City less the projected single-family diversion estimate. Some of the disposal ton estimate may not be currently disposed.

³“Residual waste processing” means separating recyclable and compostable materials from solid waste at a mixed waste material recovery facility prior to landfilling.

Greenhouse Gas Reduction Potential

The key initiatives described in the Plan can significantly reduce the City’s greenhouse gas emissions. Based on the estimated diversion rates at full implementations of programs, the following table presents the greenhouse gas emissions reduction potential of the scenarios using the United States Environmental Protection Agency (U.S. EPA) “Waste Reduction Model” (WARM) factors to estimate greenhouse gas emissions reduction based on material types and amounts diverted.

Table ES.3 Greenhouse Gas Reduction Estimates by Generator

	Single-family	Multifamily	Commercial	Total
MTCO ₂ E ¹	(523,000)	(749,000)	(1,783,000)	(3,056,000)
Equivalent number of cars removed from the road	96,000	137,000	327,000	560,000

¹Metric Tons of Carbon Dioxide Equivalent

The U.S. EPA created WARM to help solid waste planners and organizations track and voluntarily report greenhouse gas emissions reductions from several different waste management practices.

WARM calculates and totals greenhouse gas emissions of baseline and alternative waste management practices—source reduction, recycling, composting, and landfilling. The model calculates emissions in metric tons of carbon equivalent (MTCE), metric tons of carbon dioxide equivalent (MTCO₂E), and energy units (million British Thermal Unit (BTU)) across a wide range of material types commonly found in municipal solid waste.

What else does the Plan cover?

The Plan is organized as follows:

Section I Plan Overview – Provides the planning context for the Plan, the purpose and objectives and describes the planning process undertaken by the City.

Section II Area Analysis

Chapter II.1 Area Description – Describes the City’s physical infrastructure and its natural, demographic, and economic characteristics.

Chapter II.2 Current Solid Waste Management System – Describes the existing waste prevention, recycling, and composting programs and the facilities that are used to manage materials generated in the city.

Chapter II.3 System Evaluation and Needs Assessment – Evaluates both the current and planned solid waste management system activities, programs, and facilities.

Chapter II.4 Analysis of Alternatives – Provides the results of the analysis of the diversion potential and greenhouse gas reduction potential of the policies, programs and technologies.

Section III Area Recommendations

Chapter III.1 Goals, Objectives and Priorities – Describes how the policies, programs and technologies work to achieve the goals and objectives of the City.

Chapter III.2 Action Plan – Includes the tasks necessary to undertake the Local Solid Waste Management Plan, including the action steps, and an implementation schedule.

Appendix A: Technical Memoranda

Task 1: Solid Waste System Overview

Task 2: Waste Generation Projections and Landfill Capacity Scenarios

Task 3: Transfer Operations

Task 4a: Diversion Program Options

Task 4b: Organics Diversion Options

Task 5a: Technology Options for Municipal Solid Waste

Task 5b: Technology Options for Source Separated Organics

Appendix B: NCTCOG Closed Landfill Inventory

Appendix C: Model Ordinances and Contracts

Appendix D: Acronyms and Definitions

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