

ORDINANCE NO. 20061214-060

AN ORDINANCE REZONING AND CHANGING THE ZONING MAP FOR THE PROPERTY LOCATED AT 9009 SPRING LAKE DRIVE FROM RURAL RESIDENCE (RR) DISTRICT TO SINGLE FAMILY RESIDENCE LARGE LOT-CONDITIONAL OVERLAY (SF-1-CO) COMBINING DISTRICT.

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

PART 1. The zoning map established by Section 25-2-191 of the City Code is amended to change the base district from rural residence (RR) district to single family residence large lot-conditional overlay (SF-1-CO) combining district on the property described in Zoning Case No. C14-05-0179, on file at the Neighborhood Planning and Zoning Department, as follows:

A 0.3689 acre tract of land, more or less, out of the James C. Irvine Survey No. 122, Travis County, the tract of land being more particularly described by metes and bounds in Exhibit "A" incorporated into this ordinance (the "Property"),

locally known as 9009 Spring Lake Drive, in the City of Austin, Travis County, Texas, and generally identified in the map attached as Exhibit "B".

PART 2. The Property within the boundaries of the conditional overlay combining district established by this ordinance is subject to the following conditions:

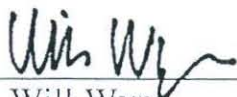
1. Development of the Property may not exceed one residential dwelling unit.
2. The maximum impervious coverage is 2,500 square feet.
3. The maximum building coverage is 1,500 square feet.
4. The maximum gross floor area is 3,000 square feet.

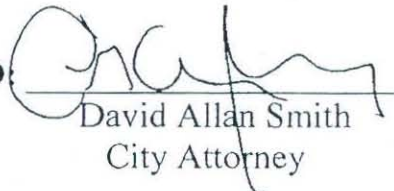
Except as specifically restricted under this ordinance, the Property may be developed and used in accordance with the regulations established for the single family residence large lot (SF-1) base district and other applicable requirements of the City Code.

PART 3. This ordinance takes effect on December 25, 2006.

PASSED AND APPROVED

December 14, 2006 §
§
§


Will Wynn
Mayor

APPROVED: 
David Allan Smith
City Attorney

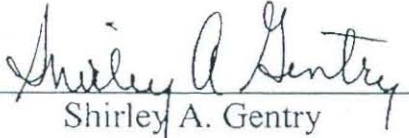
ATTEST: 
Shirley A. Gentry
City Clerk

Exhibit "A"

METES AND BOUNDS DESCRIPTION

Being all that certain 0.3689 acre tract or parcel of land out of and part of that certain 1.3474 acre tract situated in the JAMES C. IRVINE SURVEY NO. 122, Travis County, Texas, as described in Deed to Rahul Deshmukh recorded in Document No. 2005121458, Travis County Official Public Records (TCOPR), and being more particularly described by metes and bounds as follows, to-wit:

COMMENCING at an iron rod found marking the most Northerly apex corner of said 1.3474 acre tract, same being located in the East right-of-way line of Spring Lake Drive (60 feet in width), same being an interior corner of that certain 13.47 acre tract as described in Deed to Balcones Country Club Membership Association, Inc. as recorded in Volume 12960, Page 664, Travis County Real Property Records;

THENCE, South 19°00'00" East, with the common line of said 13.47 acre and said 1.3474 acre tract, a distance of 479.01 feet to a point for corner and the POINT OF BEGINNING hereof;

THENCE, with the following four (4) courses and distances:

- (1) In a Southwesterly direction along the arc of a curve to the right, having a radius of 62.00 feet, a chord bearing and distance of South 77°53'45" West- 97.83 feet to a point of compound curvature;
- (2) In a Northwesterly direction along the arc of a curve to the left, having a radius of 750.00 feet, a chord bearing and distance of North 29°26'55" West- 54.46 feet to a point of tangency;
- (3) North 31°31'45" West- 59.94 feet; and
- (4) South 86°19'05" West- 22.00 feet to a point for corner in the said East right-of-way line of Spring Lake Drive;

THENCE, South 03°40'56" East, with the said East right-of-way line of Spring Lake Drive, a distance of 105.00 feet to an iron rod found for point of curvature;

THENCE, in a Southeasterly direction along the arc of a curve to the right, having a radius of 1463.10 feet, a chord bearing and distance of South 02° 51'40" East-41.93 feet to an iron rod found for point of reverse curvature;

THENCE, in a Southeasterly direction along the arc of a curve to the left, having a radius of 19.45 feet, a chord bearing and distance of South 47° 37'54" East-27.83 feet to an iron rod found for point of tangency;

THENCE, North 86°49'06" East, and with the North right-of-way line of Jolly Hollow Drive (50 feet in width), a distance of 132.05 feet to an iron rod found for point of curvature;

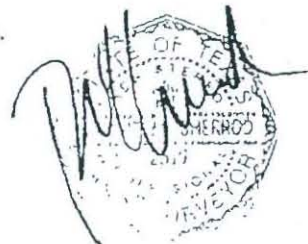
THENCE, in a Southeasterly direction along the arc of a curve to the right and with the said North right-of-way line of Jolly Hollow Drive, said curve having a radius of 221.73 feet, a chord bearing and distance of South 87° 43'48" East-43.17 feet to an iron rod found marking the Southeast corner of said 1.3474 acre tract;

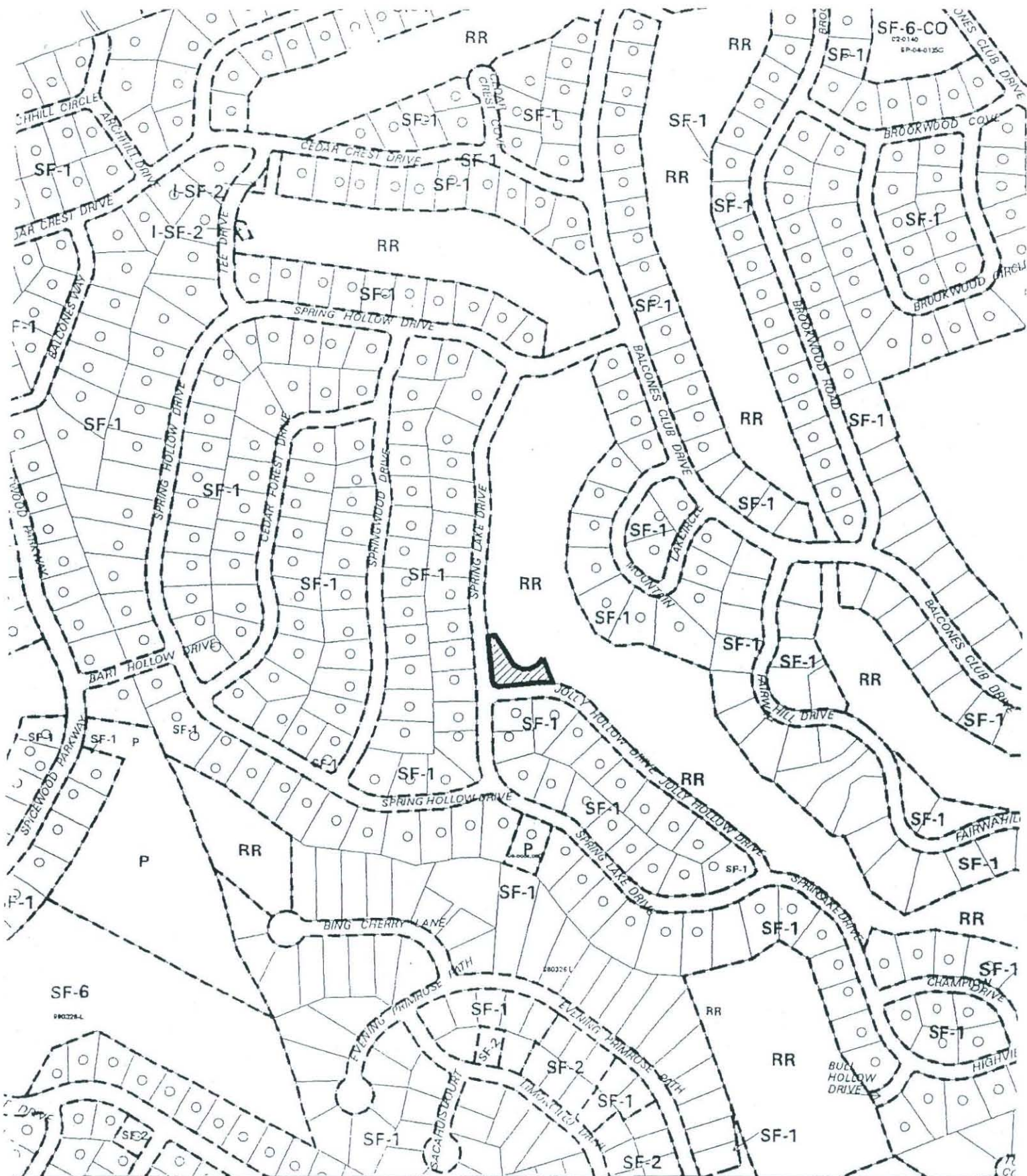
THENCE, North 19°00'00" West, with the said East line of the 1.3474 acre tract, a distance of 88.00 feet to the POINT OF BEGINNING hereof and containing 0.3689 acres of land.

BASIS OF BEARINGS: Document No. 2005121458, TCOPR.

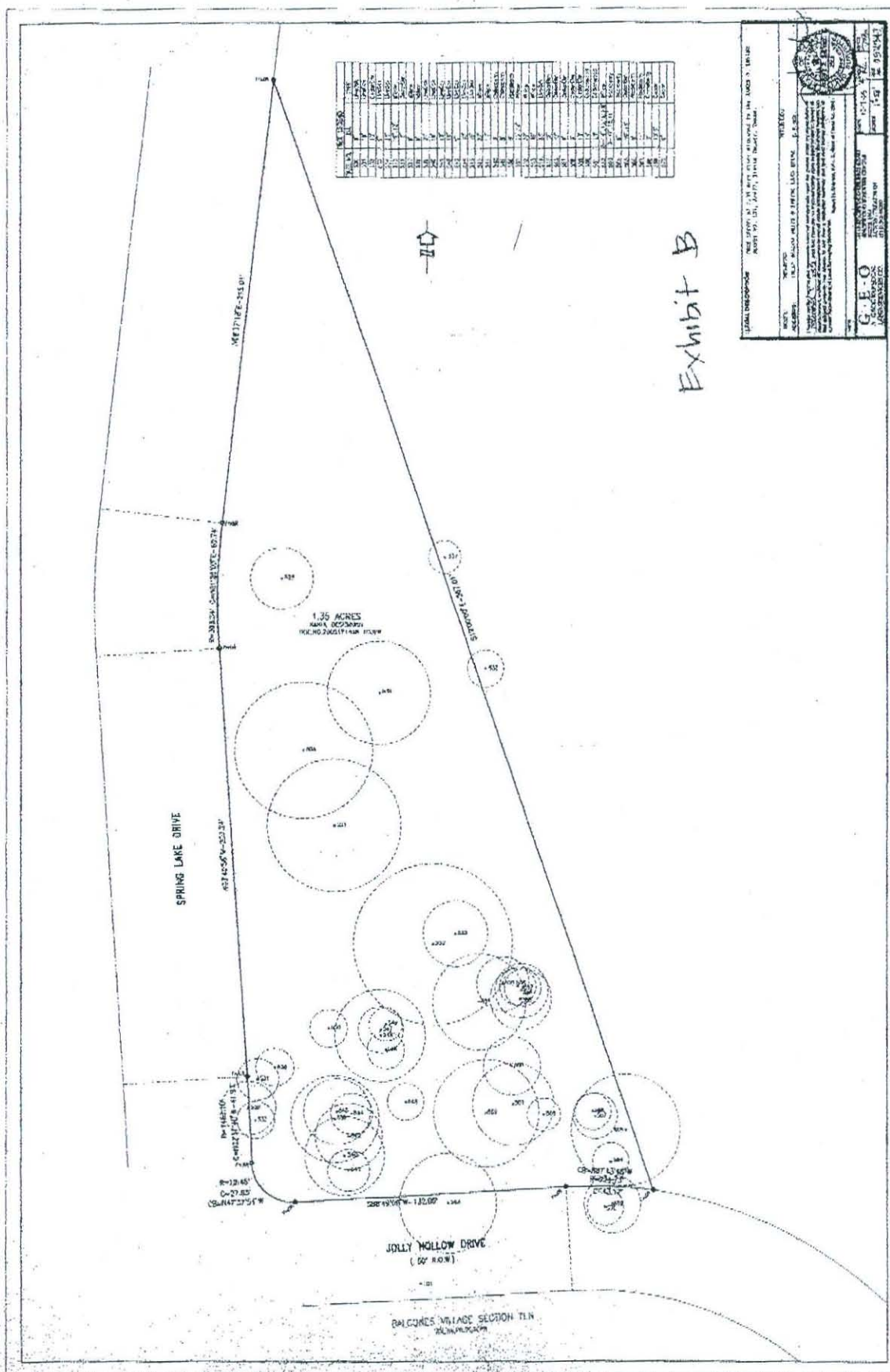
Compiled By:

Robert M. Sherrod, R.P.L.S.
GEO, A Geographical Land Services Co.
4412 Spicewood Springs Road, #1002
Austin, Texas 78759
November 29, 2006
GEO Job No. 0511347





 1" = 400'	SUBJECT TRACT		ZONING Exhibit B	CITY GRID REFERENCE NUMBER F37
	PENDING CASE			
	ZONING BOUNDARY			
	CASE MGR S SIRWAITIS			
CASE #: C14-05-0179 ADDRESS 9009 SPRING LAKE DR SUBJECT AREA (acres) 0.369			DATE: 06-12 (12.05.06)	
			INTLS: SM	



Attachment B

Photos of Critical Environmental Features



Seep



Seep



Seep



Wetland fringe along stream channel



Wetland fringe along stream channel



Wetland vegetation in seep



Wetland vegetation in seep



Wetland vegetation at edge of wetland



**Watershed Protection and Development Review Department
Staff Recommendations Concerning Required Findings
Water Quality Variances**

Application Name: *Spring Lake Subdivision*
Application Case No: *C8-2007-0224.0A*
Code Reference: *LDC 25-8-281(B)*
Variance Request: *A residential lot may not include a critical environmental feature or be located within 50 feet of a critical environmental feature*

A. Land Use Commission variance determinations from Chapter 25-8, Subchapter A – Water Quality of the City Code:

1. The requirement will deprive the applicant of a privilege or the safety of property given to owners of other similarly situated property with approximately contemporaneous development.

Yes *The variance will not be providing a special privilege to the applicant. The site is unique compared to nearby property, with several critical environmental features and associated buffers, critical water quality zone, and water quality transition zone composing a majority of the site.*

2. The variance:

- a) Is not based on a condition caused by the method chosen by the applicant to develop the property, unless the development method provides greater overall environmental protection than is achievable without the variance;

Yes *If this property were developed as commercial or multifamily, LDC 25-8-281(B) would not apply, and the applicant would be able to construct impervious cover beyond what is proposed with this variance request. In addition to restrictions in place as a result of a restrictive covenant (see Attachment A), the applicant has also agreed to implement an Integrated Pest Management Plan.*

- b) Is the minimum change necessary to avoid the deprivation of a privilege given to other property owners and to allow a reasonable use of the property;

Yes *Without this variance, the applicant would not be able to construct a single family residence on the property.*

c) Does not create a significant probability of harmful environmental consequences; and

Yes Construction of a single family house will not create a significant probability of harmful consequences if all of the conditions and restrictions are applied.

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

Yes Since impervious cover is limited to an amount less than would be allowed without this variance, water quality will be at least equal to what is achievable without the variance.

B. Additional Land Use Commission variance determinations for a requirement of Section 25-8-393 (Water Quality Transition Zone), Section 25-8-423 (Water Quality Transition Zone), Section 25-8-453 (Water Quality Transition Zone), or Article 7, Division 1 (Critical Water Quality Zone Restrictions):

1. The above criteria for granting a variance are met;

N/A


2. The requirement for which a variance is requested prevents a reasonable, economic use of the entire property; and

N/A

3. The variance is the minimum change necessary to allow a reasonable, economic use of the entire property.

N/A

Reviewer Name: Patricia Foran

Reviewer Signature: 

Date: October 27, 2008

Staff may recommend approval of a variance after answering all applicable determinations in the affirmative (YES).

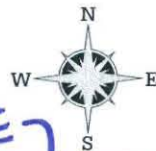
DIRECTIONS TO SPRING LAKE SUBDIVISION

C8-2007-0224.0A

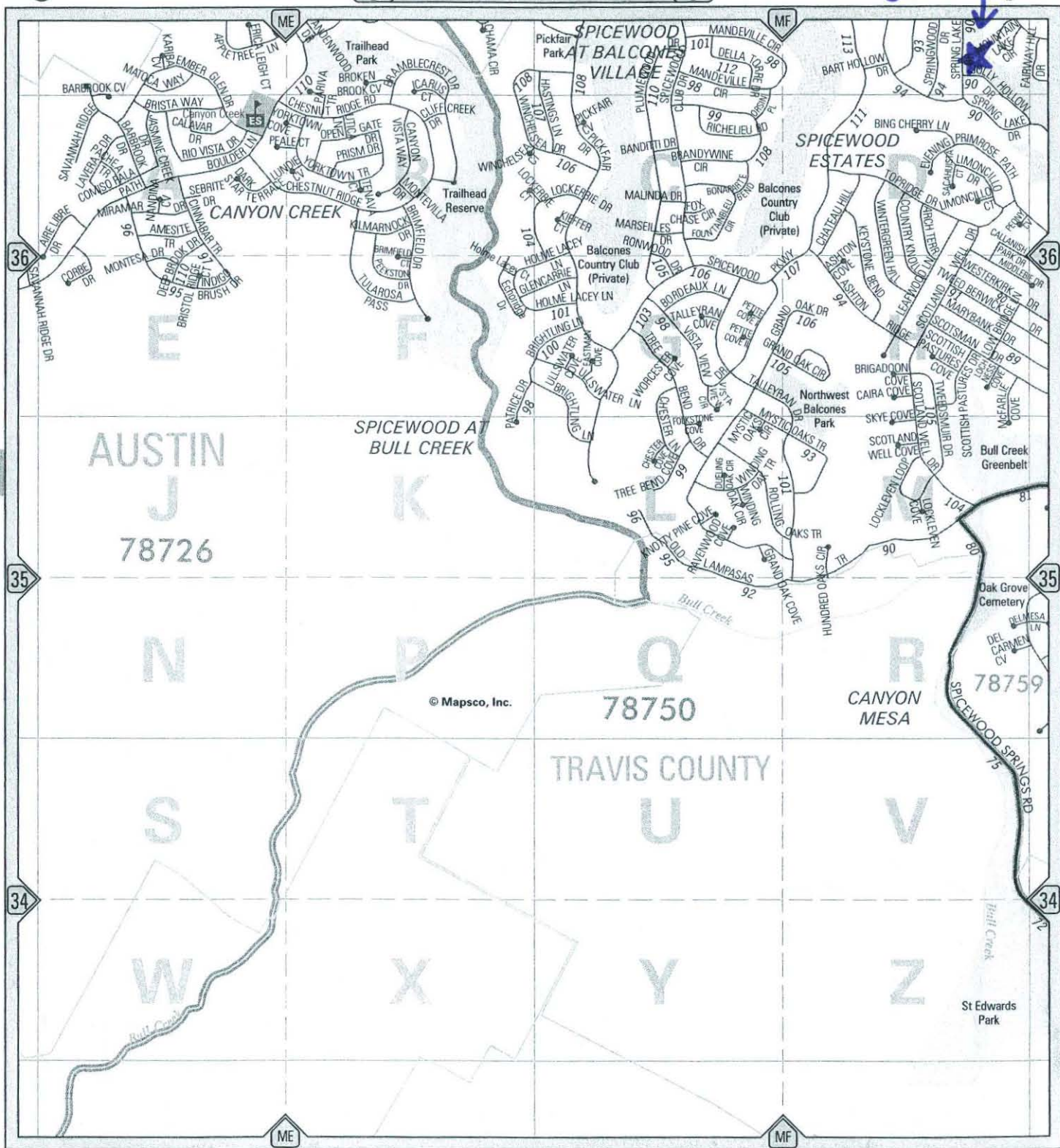
This project is located within the Full Purpose City limits.

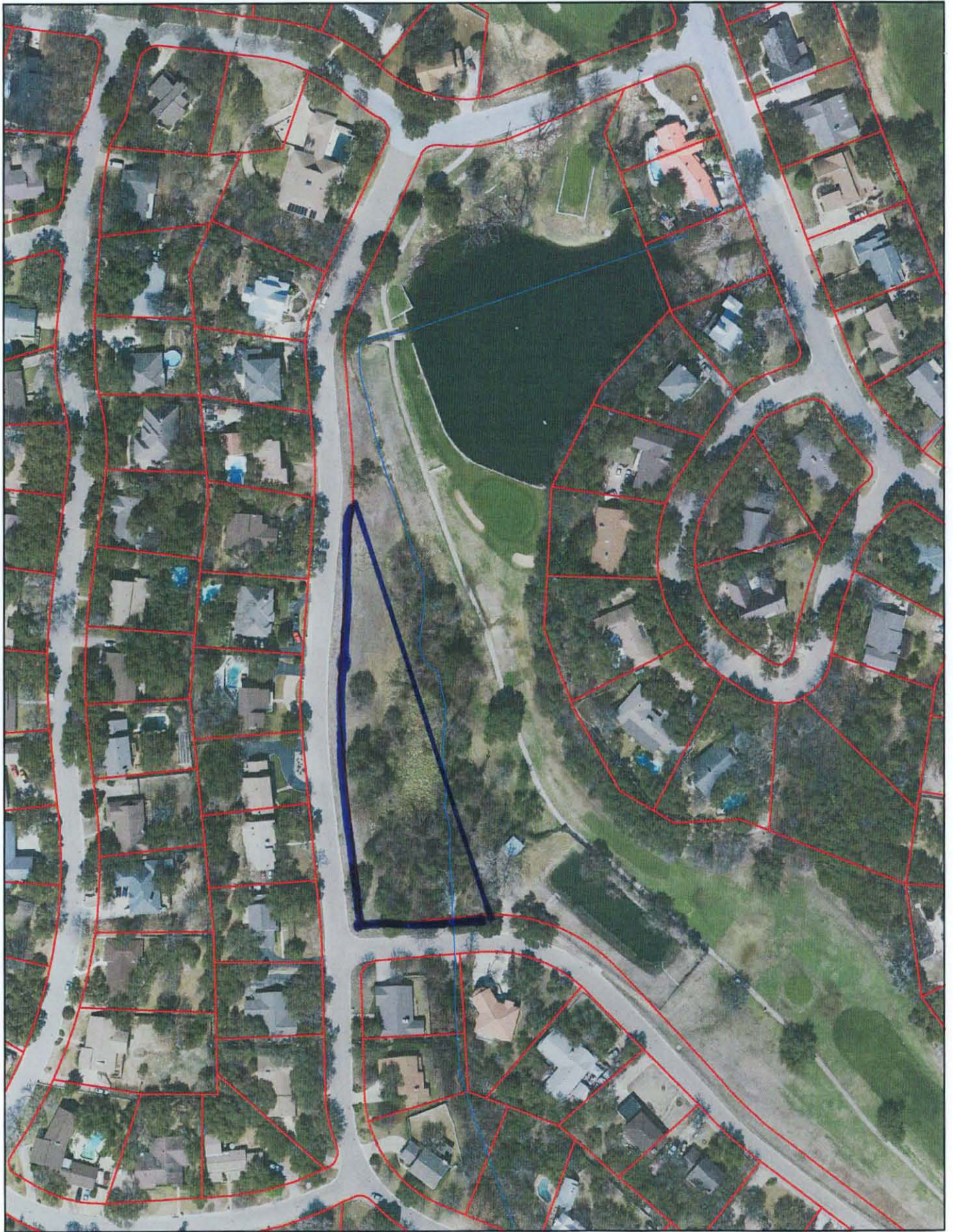
Spring Lake Subdivision is located at 9009 Spring Lake Drive.

Take US Highway 183 North to Anderson Mill Road. Make a U-turn at Anderson Mill Road to head south on the US Highway 183 South service road for approximately 1/2 mile, and then make a right onto Balcones Club Drive. After approximately 6/10 mile on Balcones Club Drive, make a right onto Spring Hollow Drive, and then make the first left onto Spring Lake Drive. The subject tract is located on the left side.



SITE 7





CRD Group, LLC.
9111 Jollyville Road Suite 106
Austin, Texas 78759
512-346-7030

May 20, 2008

Ms. Victoria Li, P.E., Director
Watershed Protection & Development Review Department
505 Barton Springs Road

Austin, Texas 78767

RE: 9009 Spring Lake Drive - Variance Request
Case No. C8-2007-0224-0.A

Dear Ms. Li:

9009 Spring Lake Drive is a 1.35-acre residential site to be located at the northeast corner of the intersection of Spring Lake Drive and Jolly Hollow Drive in Austin, Texas, also known as 1.35 acres of land out of James C. Irvine Survey No. 122. This is part of the application for our final plat

This project is situated in the Bull Creek watershed, a Water Supply Suburban watershed as classified by the City, and also lies within the Edwards Aquifer Recharge Zone.

This application is for the construction of one residential home with a footprint of no larger than 1500 sf and a total of 2500 sf of impervious cover. This project will be constructed in a single phase.

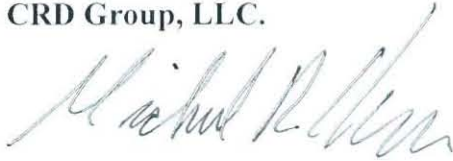
A variance from Sections 25-8-281(B) of the City of Austin Land Development Code is hereby requested for allowing a residential lot to contain a critical environmental feature.

1. Yes. The site contains a significant amount of Critical Environmental Features and cannot be built on with an exception.
2. Yes. The project demonstrates minimum departures from the terms of the ordinance necessary to avoid such deprivation of privileges enjoyed by such other property and to facilitate a reasonable use, and which will not create significant probabilities of harmful environmental consequences. We are restricted to removing one tree and have a limited amount or allowable building area.
3. Yes. The proposal does not provide special privileges not enjoyed by other similarly situated properties with similarly timed development, and is not based on a special or unique condition that was created because of the method by which a person voluntarily subdivided land.

4. Yes. The application of restrictions leaves the property without any reasonable, economic use.
5. N/A, this site is not located in any portion of the Barton Springs Zone

If you have any questions regarding this submittal, please do not hesitate to call.

Sincerely,
CRD Group, LLC.



Michael R. Chapa P.E.
Project Manager





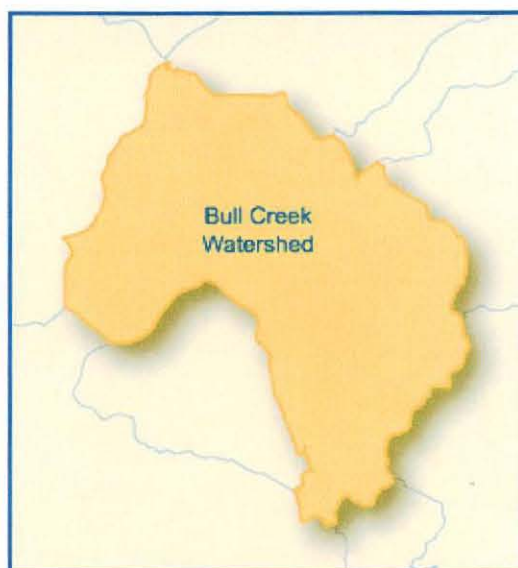
Find!

[Directory](#) | [Departments](#) | [FAQ](#) | [Links](#) | [Site Map](#) | [Help](#) | [Contact Us](#)Watershed Protection
Development Review

Education

[Flood](#)[Erosion](#)[Master Plan](#)[Water Quality](#)

Austin's Watersheds

[Fast Facts](#)
[Environmental Creek
Assessments](#)
[Photo Gallery](#)

Fast Facts

Population	2000: 43,709	
	2030: 69,716	
Creek Length	11 miles	
Drainage Area	25 square miles	
Drains To	Colorado River at Lake Austin	
Well Known Sites	North Cat MountainPark, Stillhouse Hollow Springs, 3M	
	Austin Headquarters, St. Edward’s Park, Bull Creek Park, The Arboretum	
Land Use	Residential	33%
	Business	5%
	Civic	1%
	Parks	11%
	Roadways	9%

Undeveloped

41%

Watershed Facts

- A famed Texas Ranger, Richard Lincoln Preece, killed the last buffalo in Travis County on the banks of Bull Creek, giving the creek its name.
- Archaeological sites indicate that the Bull Creek watershed has been inhabited for thousands of years.
- Early occupants settled around the area's many springs. Box Spring, for example, was named for a cedar box that Native Americans used to filter sediment from the creek to produce clear drinking water.
- This watershed is habitat for several endangered species, including the golden-cheeked warbler and the black-capped vireo.
- In response to citizen complaints, investigators find an average of 33 pollution problems each year. Sewage is the most common problem, followed by petroleum and then sediment.
- In response to high nitrate levels at Stillhouse Hollow Springs in the Bull Creek Watershed, the City has begun a pilot program aimed at educating the more than 250 residents in the area on environmentally- responsible fertilizing practices; a companion study sponsored by the City of Austin and conducted by Texas A&M resulted in lowering the recommended fertilizer application rates by 75% statewide.
- The watershed has a very active citizen group interested in protecting their creek. Visit www.bullcreek.net/
- [Report on Bull Creek](#)

[Return to Top](#)

Creek Assessments

Environmental

Index	Score	Category	Notes
Overall Score	72	Good	Bull ranks 8 out of 46 watersheds in overall quality
Water Chemistry	55	Fair	Water quality is average, nitrate is high, conductivity is high
Sediment Quality	65	Good	PAHs are very high, herbicides/pesticides are very low, metals are very low
Recreation	90	Excellent	During dry weather conditions, bacteria is not a threat
Aesthetics	89	Excellent	Litter is not a problem, no odor
Habitat	52	Fair	Some sediment deposition, some channel alteration

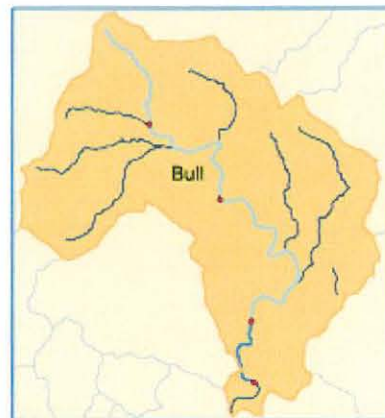
Aquatic Life

80

Very Good

Life Benthic macroinvertebrate
community is excellent, diatom
community is good

- Benthic macroinvertebrate data indicate that Bull Creek is of high aquatic life use by state evaluation methods; presence of pollution-intolerant diatom species suggest healthy community.
- Elevated levels of PAHs in sediment may be harmful to aquatic life; sediment scores declined in Bull more than other watersheds in the City.
- High nitrates and conductivity may be attributed to groundwater impacts from springflow, leaking wastewater lines and residential fertilizer use.
- Increased sediment deposition due to recent construction impacts.
- Portions of Bull Creek are listed on the State Water Quality Inventory as being of concern for nitrate/nitrite enrichment.
- Rapid commercial and residential construction impacting formerly intact headwater areas.
- Staff research indicates the source of high PAH levels may be from parking lot sealants.

[Learn More](#)[How to Help](#)

Environmental scores are based on a full range of chemical, biological, and physical assessments.

[Return to Top](#)**Photo Gallery**



Bull Creek at St. Edwards
park above dam



Bull Creek above tributary 7



Bull Creek at St. Edwards
park above dam

[Return to Top](#)

[Home](#) :: [Flood](#) :: [Erosion](#) :: [Master Plan](#) :: [Water Quality](#)



Austin City Connection - The Official Web site of the City of Austin

Contact Us: [Send Email](#) or 512-974-2550.

[Legal Notices](#) | [Privacy Statement](#)

© 1995 City of Austin, Texas. All Rights Reserved.

P.O. Box 1088, Austin, TX 78767 (512) 974-2000



Austin, Texas Zero Waste Strategic Plan

The Zero Waste Economy Designing a Full-Cycle System—Upstream AND Downstream



© Copyright, Eco-Cycle 2005

www.ecocycle.org/zerowaste/zwsystem

October 1, 2008

Prepared by Gary Liss & Associates

4395 Gold Trail Way, Loomis, CA 95650-8929

916-652-7850; gary@garyliss.com, www.garyliss.com

with assistance from

Richard Anthony Associates, 858-272-2905; ricanthonya@aol.com

Gary Liss & Associates

4395 Gold Trail Way, Loomis, CA 95650-8929

916-652-7850; Fax: 916-652-0485

gary@garyliss.com, www.garyliss.com

October 1, 2008

Solid Waste Advisory Commission
City of Austin
P.O. Box 1088
Austin, TX 78767

Dear Commissioners:

It is my pleasure to transmit to you the Draft City of Austin Zero Waste Strategic Plan.

This Zero Waste Strategic Plan is the result of a collaborative process. As you know, the development of this Plan started with our first public presentation before the SWAC in January 2008. Through a combination of public presentations, stakeholder meetings, focus groups and individual outreach, we worked through the spring to help clarify the needs for Austin. GLA also made presentations to the Capital Area Council of Governments (CAPCOG) Solid Waste Advisory Committee (SWAC) and Travis County leaders to explore how Austin could work best with its regional partners on its Zero Waste initiatives.

Over the summer, we drafted this Plan to summarize the analysis and input received on Zero Waste and to make recommendations for the City of Austin on how to proceed down the path to Zero Waste. We worked closely with City staff to make sure we addressed all the Draft Recommendations that we circulated in April, and presented the information in a format that is clear to all that read it.

To reach its goal, the City will require a lot of effort and support by everyone involved: City staff and elected officials; reuse, recycling and composting service providers; local businesses; environmental and civic groups; schools and colleges; religious leaders; County and regional staff and elected officials, State representatives for this region in the State Legislature, and State agencies. Hopefully this collaborative Zero Waste Plan process will serve as the genesis to continue discussion, planning, and action towards a Zero Waste future.

I am very proud of the document we produced and I look forward to your review and comments. I hope to see great things from Austin's Zero Waste initiatives.

Sincerely,

Gary Liss

Cc: Willie Rhodes, Tammie Williamson, Jessica Kingpetcharat-Bittner, and Melissa Martinez
Richard Anthony, Robena Jackson, Neil Seldman

Printed on Recycled Paper, Naturally



To: Solid Waste Advisory Commission

From: William E. Rhodes, P.E., Director
Solid Waste Services Department

Subject: Zero Waste Strategic Plan

Date: October 3, 2008

The purpose of this memo is to explain what Zero Waste is in Austin, why Zero Waste is important, and provide a short synopsis of the strategies the Solid Waste Services Department (SWS) selected from the Zero Waste Strategic Plan developed by Gary Liss & Associates.

Overview

Consistent with its goal to make Austin the most livable city in the country, in May 2005, the Austin City Council adopted Resolution 20050519-44 supporting the United Nations Environmental Accord and committing itself to achieving a 20% reduction in per capita solid waste disposal to landfills and incinerators by 2012, and Zero Waste to landfills and incinerators by 2040.

For Austin, Zero Waste success is defined as reducing waste sent to landfills and incinerators by 20% by 2012, 75% by 2020, and 90% by 2040. This is an incredibly ambitious goal and no single strategy will help us achieve it. The selected strategies identified in the attached Strategic Plan include "upstream" options, which attempt to prevent waste before it is created and "downstream" options, which focus on reusing and recycling materials that are discarded. These options include changes to rules, ordinances, and policies that will require collaboration and thoughtful consideration to ensure Austin's success.

What is Zero Waste?

Zero Waste is a sustainability philosophy that goes beyond recycling, taking a "whole system" approach to evaluating the flow of resources and waste created by our communities. Zero Waste works to redesign the system to replicate natural systems, acknowledging that discarded materials are valuable commodities to others. Zero Waste systems strive to divert those valuable commodities sent to landfills and incinerators by reducing consumption while reusing and recycling the remaining materials back into the marketplace. Additionally, Zero Waste involves more than waste diversion. Zero Waste recognizes that decisions about product design and packaging are made by marketers and manufacturers "upstream" and independent from the local government solid waste and recycling system. Therefore, the disposal costs and toxicity issues associated with end-of-life products are inappropriately shifted to local governments and taxpayers. Zero Waste challenges the inefficient and wasteful use of resources to create and

package products, shifting the responsibility of disposal back to the producer in an effort to encourage waste reduction and create local opportunities for sustainable economic development through programs that encourage repair/reuse and take back.

Why Zero Waste?

Austin is part of a regional waste management system. Landfills are owned privately and up to 33 surrounding counties dispose of their waste in landfills located within the Capital Area Planning Council of Governments (CAPCOG) jurisdiction. CAPCOG includes 10 counties: Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis, and Williamson. With only one publicly owned landfill in Williamson County, local governments have no authority to control the flow of waste into the region. As the Capital Area continually grows, outpacing other Texas communities, this region will be faced with a need to expand existing landfills, open new landfills, or divert a drastic amount of waste from current landfills to properly ensure the health and safety of the region. Austin's Zero Waste Plan seeks to extend the life of existing landfills while acknowledging that a certain amount of residual waste is inevitable.

In addition to extending the life of existing landfills, Austin's Zero Waste Plan also significantly contributes to the City's Climate Action Initiatives by helping to reduce greenhouse gases. Landfill gases are released as a result of decomposition. They are composed of approximately 50% methane and 50% carbon dioxide and water. Although carbon dioxide receives widespread recognition for contributing to ozone depletion, methane gas is actually 21 times more potent at trapping heat in the atmosphere. Zero Waste focuses on reducing the production and release of greenhouse gases by reducing the amount of waste sent to landfills to decompose.

Selected Strategies

Based on the recommendations provided by Gary Liss and Associates, Austin's Zero Waste Strategic Plan is organized into 5 fundamental strategies to ensure long-term success:

- Lead by example, making City facilities and events examples of Zero Waste in action;
- Expand and improve recycling and composting programs;
- Develop and invest in infrastructure and a Zero Waste economy;
- Develop, support, and adopt waste reduction/disposal legislation; and
- Educate, promote, and advocate Zero Waste.

Each of these principals will require a commitment to Zero Waste and close coordination between City departments and regional partners as well as area business and neighborhoods.

1. **Lead By Example.** In order to inspire Austin residents and businesses to achieve Zero Waste, City of Austin Departments must lead by example. A careful and thorough evaluation of Departmental waste stream, waste reduction methods currently in use, and recycling program participation rates in each City facility is essential. Even events hosted at City facilities such as parks, recreational centers, and event centers are prime opportunities to showcase how Zero Waste can be incorporated into large scale events as well as every day life. Additionally, partnering with private, educational, and non-profit groups in a Green District will allow us to continue fostering open communication about best Zero Waste

practices for the region while providing a centralized venue for state of the art recycling resources available to the public.

2. ***Expand and improve recycling and composting programs.*** The City of Austin has been a state leader in recycling. But, we must continue improving our recycling and waste reduction efforts. Effective October 6, 2008, the City will move to Single Stream Recycling and expects a significant increase in residential recycling participation. Single Stream Recycling expands the types of recyclable materials accepted and makes recycling more convenient for residential customers. As the City transitions to Single Stream Recycling, we must continually monitor program participation, determine if services should be expanded, and identify ways to create incentives for citizens to recycle, especially where participation lags.

Regarding commercial programs, the 1998 commercial recycling ordinance requires certain commercial business and office buildings as well as multifamily communities to provide on-site recycling for their customers. The Solid Waste Advisory Commission and City Staff are currently evaluating whether or not to expand the ordinance to include more commercial facilities, expand service requirements and standards, and identify ways to gauge compliance with the ordinance.

3. ***Develop and Invest in Infrastructure and a Zero Waste Market.*** As Austin continues to grow and change, so does its customer base and customers' needs. Austin will need to invest in the appropriate infrastructure to make Zero Waste an achievable goal, including resource recovery parks or green districts and other facilities that will enable Austin to collect and process recyclable and compostable materials. A Waste Management Master Plan will be key in identifying long-term infrastructural and operational requirements. Additionally, to sustain Zero Waste initiatives, Austin must develop ways to stimulate its existing Zero Waste market by encouraging green businesses, green collar jobs, and green buildings. Additionally, providing Zero Waste training and Zero Waste program development to businesses interested in adopting Zero Waste goals for their own operations will contribute to developing an even "greener" economy.
4. ***Develop, Support, and Adopt Waste Reduction and Disposal Legislation.*** The City currently has limited control over commercial waste management in the City limits. Adopting appropriate rules and ordinances to provide the city with more management control over commercial waste generation and diversion will be essential. Additionally, with Austin's growth, comes increased construction and demolition debris. Nationally, construction and demolition debris (C&D) accounts for 25% to 45% of the waste sent to landfills. Generally, nearly 50% of C&D materials can be recycled or reused by organizations like Habitat for Humanity. To encourage waste diversion, Austin must implement ways to create and foster new incentives to reduce, reuse and recycle C&D waste, rather than further the incentives to landfill it. Additionally, researching new methods to provide convenient recycling options for tenants in new buildings will go along way to increasing participation in recycling. Finally, we have already taken the step as a city and state to support Extended Producer Responsibility Legislation with regard to computers. The City must continue to develop strong public-private partnerships with the goal of expanding upon this initial achievement.

5. **Educate, Promote, and Advocate Zero Waste.** The City of Austin has made significant efforts to educate the public about recycling programs available. Yet, participation is limited, even where recycling programs are convenient. As Austinites begin personally and financially experiencing the need to adopt a “greener” way of life, the City must seize its opportunity to share the benefits of converting to Zero Waste habits. Austin must develop a compelling marketing campaign that causes the general public to rethink its use of materials, recognize that Zero Waste is an effective way to manage our waste, and positively react through participation. Partnering with other City departments, businesses, local and regional organizations and associations, as well as community leaders will evoke wide-spread support and involvement.

How do we measure success?

Unfortunately, the commercial disposal data and waste management system does not currently provide the City with enough information to determine commercial contribution to the City’s Zero Waste initiatives. As the plan explains, Austin has limited control over commercial waste management and can only directly impact what it directly controls. Therefore, SWS staff will focus first on the reduction and recycling efforts among programs it is charged with managing: (1) residential waste, (2) waste recycled by City Departments and programs, and (3) waste management contracts in the downtown area. By focusing on these three areas first, SWS will be able to hone its resources and energy towards setting a Zero Waste standard for the community and hopefully encourage area businesses, organizations and other communities to sign on to Zero Waste goals.

Each city and jurisdiction has its own way of determining success. For example, San Francisco, California uses the amount of trash collected by commercial and residential haulers from a particular year as a baseline and then compares the amount of waste diverted city-wide to that original baseline value. Like the City of San Francisco, Austin must establish its own parameters to determine its own Zero Waste success within the boundaries of its own legal authority. Since Austin’s goal is to reduce the City’s waste disposal by 20% by 2012, 75% by 2020, and 90% by 2040, Staff proposes using the following measures to monitor success:

- A. Percent of City of Austin Departmental waste diverted from landfill to measure success at incorporating Zero Waste principals;
- B. Percent reduction of residential waste sent to landfill in comparison to a base year to measure our success at reducing waste; and
- C. Percent increase of residential waste diverted each year to measure the success of our waste diversion programs.

What is the Fiscal Impact?

In FY 2008 – 2009, SWS dedicated two full time positions to implement the strategies outlined above. However, SWS will need support and cooperation from all City departments to achieve internal goals. Additionally, the City will need to invest in infrastructure to achieve Zero Waste goals. SWS recommends developing a Waste Management Master Plan to identify long-term infrastructural requirements needed to provide residential waste management services as well as implement the Zero Waste Strategic Plan.

Conclusion

Zero Waste is an ambitious endeavor. No single strategy will result in success. It is the combination of the implementing the selected strategies and working in concert with supportive partnerships that will allow us to realize our Zero Waste goals.

As we adopt a Zero Waste philosophy, we must remember that changing consumer habit is a difficult undertaking. Careful, strategic, incremental approaches are critical to Austin's success -- laying a strong foundation first.

We are often compared to the likes of San Francisco, Seattle, Portland and New York. What we must remember is that they have incrementally introduced Zero Waste into their communities for nearly 15 years. Additionally, they have state and/or regional mandates requiring certain reductions in landfill use. Austin must follow their lead in terms of commitment, dedication, and innovation while still remembering that our Zero Waste Plan was developed with our community in mind. By prioritizing "upstream" solutions to prevent and reduce waste before it is created, identifying improvements in "downstream" solutions to better manage waste, and developing a new and compelling public education campaign to improve participation in Zero Waste initiatives, Austin will reach its goal of Zero Waste by 2040 and be considered among the most sustainable and livable communities in the nation.

TABLE OF CONTENTS

TABLE OF CONTENTS	I
EXECUTIVE SUMMARY	II
A. BACKGROUND AND EXISTING SYSTEM.....	1
1. BACKGROUND.....	1
2. ZERO WASTE AND CLIMATE CHANGE	2
3. EXISTING SOLID WASTE AND RECYCLING SYSTEM	5
B. POLICY AND PROGRAM OPPORTUNITIES	9
1. SERVICE OPPORTUNITY ANALYSIS.....	9
2. PROGRAM AND FACILITY ANALYSIS	10
3. ZERO WASTE POLICY AND PROGRAM OPTIONS	11
UPSTREAM POLICY AND PROGRAM OPTIONS	12
DOWNSTREAM POLICY AND PROGRAM OPTIONS	13
GREEN BUSINESS, GREEN BUILDINGS AND JOBS	15
RESIDUALS MANAGEMENT AND REGIONAL COORDINATION.....	16
4. ENVIRONMENTAL IMPACTS	18
5. ZERO WASTE AND JOBS ANALYSIS	20
C. POLICY AND PROGRAM RECOMMENDATIONS	21
1. UPSTREAM POLICY AND PROGRAM RECOMMENDATIONS	21
2. DOWNSTREAM POLICY AND PROGRAM RECOMMENDATIONS.....	21
3. GREEN BUSINESS, GREEN BUILDINGS AND GREEN JOBS	22
4. REGIONAL COORDINATION AND RESIDUALS MANAGEMENT	22
APPENDICES	23
APPENDIX A - LIST OF ZERO WASTE PLAN MEETINGS.....	24
APPENDIX B - PRODUCT & MATERIALS MARKET INVENTORY	25
APPENDIX C – EXISTING RECYCLING ORDINANCE	28
APPENDIX D - POLICY & PROGRAM OPTIONS FOR DISCUSSION.....	29
APPENDIX E – MAP OF CONTRIBUTING COUNTIES.....	37
APPENDIX F – REGIONAL LETTERS OF SUPPORT	38
APPENDIX G - MODEL EPR RESOLUTION.....	41
APPENDIX H - HIGHEST AND BEST USE HIERARCHY	44
APPENDIX I - ZERO WASTE RESOURCES.....	45

EXECUTIVE SUMMARY

Zero Waste is a design principle that goes beyond recycling to focus first on reducing wastes and reusing products and then recycling and composting the rest. Zero Waste works to redesign the system to mimic natural systems, recognizing that one person's trash is another person's treasure and everything is a resource for something or someone else. Currently, Austin is estimated to lose over \$40 million annually by sending materials that could be recycled or reused to area landfills.

Austin's Zero Waste system will strive to recover that estimated loss and eliminate waste, or get darn close. This Plan defines success at achieving the Zero Waste goal to be reducing by 20% the per capita solid waste disposed to landfills by 2012, diverting 75% of waste from landfills and incinerators by 2020, and 90% by 2040.

Zero Waste Businesses are already leading the way, diverting over 90% of their wastes from landfills and incinerators. Local Zero Waste Businesses have documented that they save money, reduce their liabilities, increase their efficiency and contribute significantly to addressing climate change. Austin's Zero Waste Plan considered Austin's current and planned public and private solid waste infrastructure, as well as the City's Climate Protection Program.

Recommendations developed through this process are integral to achieve the City adopted U.N. Urban Environmental Accord's goal to reduce by 20% the per capita solid waste disposal to landfills by 2012 and Zero Waste by 2040. Zero Waste initiatives could reduce greenhouse gases by nearly 500,000 MTCE, making Zero Waste one of the most significant contributors to reducing climate change that the City can influence at the local level.

The City of Austin was an early leader to implement recycling and to adopt producer responsibility and commercial recycling policies. The City of Austin's Zero Waste Plan proposes to build on the City's past success to work together throughout the region and state to:

- ◆ Expand and improve local and regional reuse, recycling, and composting programs;
- ◆ Adopt new rules and incentives to reward those who embrace the goal of Zero Waste;
- ◆ Develop Green Districts and Resource Recovery Parks for Zero Waste infrastructure;
- ◆ Advocate for producer and retailer responsibility for product and packaging wastes, and bans on problem materials;
- ◆ Educate and advocate for a Zero Waste agenda as part of climate change and sustainability policies and programs; and
- ◆ Involve the community through collaboration and partnerships to achieve Zero Waste.

On a regional scale, the Capital Area Council of Government's (CAPCOG) Solid Waste Advisory Committee noted that Austin's Zero Waste initiatives support the waste reduction goals of the Regional Solid Waste Management Plan and the recommendations of the Market Analysis of Recoverable Materials (2007) prepared for the CAPCOG region.

The City of Austin has already taken the first critical step by committing to Zero Waste. The year 2040 is 32 years away. This plan is intended to serve as the first step on a long path towards a Zero Waste Future. Dedication, collaboration, and continual re-evaluation will be essential to Austin's success.

A. BACKGROUND AND EXISTING SYSTEM

1. BACKGROUND

In 2005, the City of Austin Solid Waste Advisory Commission (SWAC) and its Long-Range Solid Waste Planning Task Force (Task Force) worked with staff of the City Solid Waste Services Department to develop a scope of work for this Zero Waste Plan. A consultant was solicited to develop a Zero Waste Plan that would:

- ◆ Consider current and planned public and private solid waste infrastructure;
- ◆ Consider the City of Austin's Climate Protection Program and the U.N. Urban Environmental Accords goal to reduce by 20% the per capita solid waste disposal to landfills by 2012 and zero waste by 2040;
- ◆ Emphasize reduction, reuse, and recycling of waste;
- ◆ Include a specific timetable for each priority, including actions to be taken for the greatest impact on the diversion of materials sent to landfills;
- ◆ Estimate order of magnitude costs for each priority action;
- ◆ Include public education and outreach to promote the concepts of the plan;
- ◆ Integrate the concept of eco-industrial parks;
- ◆ Include effective methodologies for maximizing Producer Responsibility;
- ◆ Address applicable rules, regulations and policies necessary to support zero waste goals;
- ◆ Address rules, regulations, policies and infrastructure investments that constitute barriers to achieve these goals; and
- ◆ Obtain input from the Task Force and SWAC, and seek input from a broad range of stakeholders, including businesses, environmental organizations, and the community at large.

On November 29, 2007, the City Council awarded a contract to Gary Liss & Associates (GLA), Loomis, CA,¹ to develop a Zero Waste Plan for the City of Austin.² GLA reviewed background information provided by City staff then met in Austin monthly over the following four months in an extensive series of public meetings, focus groups and interviews with key stakeholders, business leaders, environmental organizations and the community at-large.

At the first public presentation before the SWAC in January 2008, over 50 stakeholders and the public attended. The event received media attention from four local TV stations, two radio stations and two Austin newspapers. The focus of the first presentation was an Introduction to Zero Waste and what other communities and businesses were doing around the country. In February, GLA presented its preliminary findings to over 100 stakeholders and the public on its analysis of Austin's existing programs and facilities as well as untapped service opportunities that could help Austin achieve Zero Waste. In March 2008, GLA met with over 100 individuals in a series of three focus groups on: Organics; Green Building; and Construction and Demolition Debris Recycling and Reuse. For each of the focus groups, GLA invited service providers and waste generators, as well as other interested stakeholders, to help clarify the needs for Austin. In

¹ www.garyliss.com

² C:\Documents and Settings\Gary\My Documents\ZW Communities\Other U.S\Austin, TX\Administration\Old Docs\IFB\Staff Report (11-26-07).mht

March, GLA also made an initial presentation to the Capital Area Council of Governments (CAPCOG) Solid Waste Advisory Committee (SWAC), to obtain their input on Austin's Zero Waste initiatives. In April 2008, GLA presented Draft Recommendations to be part of the Zero Waste Plan, and solicited input from stakeholders and the public. GLA also met with the CAPCOG SWAC and separately with Travis County leaders to explore how Austin could work best with its regional partners on its Zero Waste initiatives. A list of the meetings held by GLA can be found in Appendix A.

This Plan summarizes the analysis and input received on Zero Waste and makes recommendations for the City of Austin on how to proceed to Zero Waste. Although there are several recommendations included in this Plan, there is no one right way to get to Zero Waste. Many paths can be taken. Zero Waste is about the commitment and the journey. Austin has taken the first step to commit to this goal. Everything else should fall into place by repeatedly evaluating whether and how it will contribute to Zero Waste. To reach its goal, the City will require a lot of effort and support by everyone involved: City staff and elected officials; reuse, recycling and composting service providers; local businesses; environmental and civic groups; schools and colleges; religious leaders; County and regional staff and elected officials, State representatives for this region in the State Legislature, and State agencies. Hopefully this collaborative Zero Waste Plan process will serve as the genesis to continue discussion, planning, and action towards a Zero Waste future.

2. ZERO WASTE AND CLIMATE CHANGE

Concern about climate change has altered how communities handle and think about solid waste. Under Mayor Will Wynn's leadership, the City signed onto the Urban Environmental Accords, which commits Austin to reduce its waste per capita by 20% by 2012 and achieve Zero Waste by 2040³. In 2007, the City of Austin also adopted its **Climate Protection Plan** that highlights the importance of these issues. The intent of the Climate Protection Plan is to reduce greenhouse gas (GHG) emissions, the primary contributor to climate change, and make Austin the leading city in the nation in the fight against global warming.⁴ The Climate Protection Plan elements include:

- ◆ Municipal Operations - Lead by example and make City of Austin facilities, fleets and operations carbon-neutral by 2020.
- ◆ Austin Energy - Increase conservation, efficiency and renewable programs; require carbon neutrality on new generation; and retire early sources of existing utility GHG emissions.
- ◆ Homes and Buildings - Increase energy efficiency of Austin building codes for both residential and commercial properties.
- ◆ Community-wide - A comprehensive plan for reducing GHG emissions from sources community-wide.
- ◆ "Go Neutral" Plan - Provides tools for all businesses and individuals to reduce their carbon footprint to zero.

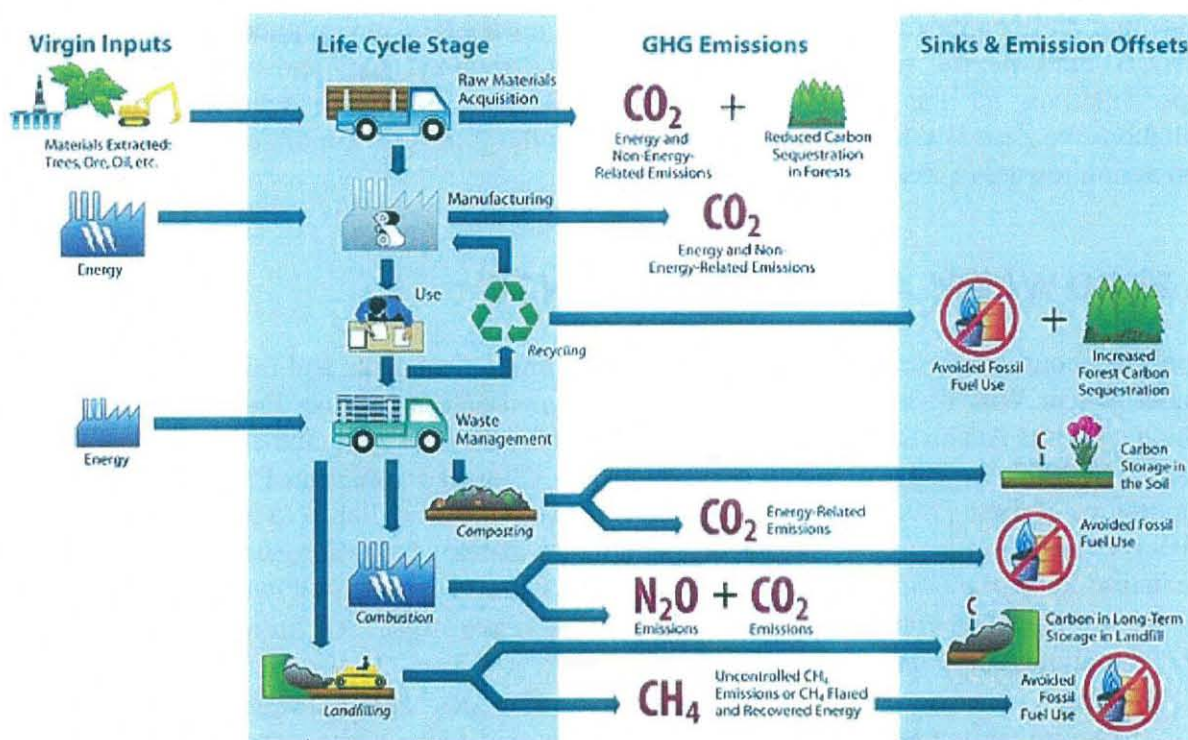
But how does Zero Waste influence Climate Change?

³ See: http://www.sdnpsd.org/sdi/international_days/wed/2005/wed2005/accord.htm

⁴ Source: <http://www.austinenergy.com/ClimateProtectionPlan.pdf>

The U.S. Environmental Protection Agency has been studying the links between solid waste and climate change for over a decade. Their website contains detailed analysis and summary steps that individuals and businesses can take to reduce their carbon footprint.⁵ The EPA graphic below (Figure 1) highlights “the different sources of GHG emissions from waste....The disposal of solid waste produces GHGs in a number of ways. First, the anaerobic decomposition of waste in landfills produces methane, a GHG 21 times more potent than carbon dioxide. Second, the incineration of waste produces carbon dioxide as a by-product. In addition, the transportation of waste to disposal sites produces GHGs from the combustion of the fuel used in the equipment. Finally, the disposal of materials indicate that new products are being produced as replacements; this production often requires the use of fossil fuels to obtain raw materials and manufacture the items.”⁶

Figure 1
Life Cycle of Waste



The State of California has given additional consideration to the relationship between climate change and solid waste disposal. The California Air Resources Board (CARB) is responsible for implementing AB32, the Global Warming Solutions Act. CARB convened the Economic and Technology Advancement Advisory Committee (ETAAC), which was comprised mostly of business leaders from different sectors of the state's economy. In their Final Report adopted February 11, 2008,⁷ ETAAC recognized the connections between solid waste disposal and climate change:

⁵ See: <http://yosemite.epa.gov/oar/globalwarming.nsf/content/ActionsWaste.html>

⁶ Source: <http://yosemite.epa.gov/oar/globalwarming.nsf/content/ActionsWasteBasicInfoGeneralLifeCycle.html>

⁷ See: <http://www.arb.ca.gov/cc/etaac/ETAACFinalReport2-11-08.pdf>

“ETAAC recognizes the hierarchy of waste reduction, reuse, and recycling to reduce GHG emissions. These waste management strategies also avoid the energy use and other environmental impacts associated with extracting, processing, and transporting raw materials. Eliminating upstream emissions by reducing, recycling and composting can result in substantial climate change mitigation benefits.”

ETAAC then recommended the following measures to be adopted by the State:

- ◆ Develop Suite of Emission Reduction Protocols for Recycling
- ◆ Increase Commercial-Sector Recycling
- ◆ Remove Barriers to Composting
- ◆ Phase Out Diversion Credit for Greenwaste Alternative Daily Cover Credit
- ◆ Reduce Agricultural Emissions through Composting

The latest report on these issues, *Stop Trashing the Climate*, “provides compelling evidence that preventing waste and expanding reuse, recycling, and composting programs — that is, **aiming for Zero Waste — is one of the fastest, cheapest, and most effective strategies available for combating climate change.** This report documents the link between climate change and unsustainable patterns of consumption and wasting, dispels myths about the climate benefits of landfill gas recovery and waste incineration, outlines policies needed to effect change, and offers a roadmap for how to significantly reduce greenhouse gas (GHG) emissions within a short period.”⁸ The report also finds that “**significantly decreasing waste disposed in landfills and incinerators will reduce greenhouse gas emissions the equivalent to closing 21% of U.S. coal-fired power plants.** This is **comparable to** leading climate protection proposals such as **improving national vehicle fuel efficiency.** Indeed, preventing waste and expanding reuse, recycling, and composting are essential to put us on the path to climate stability.”⁹

Based on the information gathered above, one of the keys to addressing climate change locally is by reducing the waste sent to landfills to reduce the methane produced in anaerobic conditions. **Even the best-managed landfills over the average lifetime of the facility are not expected to recover over 75% of the gases produced.**¹⁰ In addition, 30 years after landfills are closed, private owners are no longer responsible for them under federal law. The surfaces of sites that are not maintained open up allowing rain to enter through the cracks. Gas and leachate are produced and are no longer controlled. In addition to these direct landfill impacts locally, **for every ton of solid waste produced locally, there are 71 tons produced “upstream” from mining, manufacturing and distribution of products.**¹¹ These upstream impacts also have many climate change implications as well, some of which are factored into calculators available from the US Environmental Protection Agency.

⁸ Source: <http://stoptrashingthecclimate.org/>

⁹ Source: <http://stoptrashingthecclimate.org/>

¹⁰ The Intergovernmental Panel on Climate Change cites that “estimates of ‘lifetime’ recovery efficiencies may be as low as 20%”. See:

http://www.mnp.nl/ipcc/pages_media/FAR4docs/final%20pdfs%20of%20chapters%20WGIII/IPCC%20WGIII_chapter%2010_final.pdf, page 16.

¹¹ Source: *Wasting and Recycling in the United States*, 2000, p. 13,

<http://www.ilsr.org/recycling/zerowaste/index.html>

Clearly, Zero Waste needs to be an integral part of the City's climate change initiatives. This will take close coordination and strong partnerships between the City's Climate Action Team and the staff of the Solid Waste Services Department. In addition, all City of Austin facilities, fleets and operations should be asked to help in meeting Zero Waste goals as part of these climate change initiatives.

3. EXISTING SOLID WASTE AND RECYCLING SYSTEM

In considering how to get to Zero Waste, it is important to understand how Austin's solid waste management system currently functions, what is within the control of the City of Austin, and what is not.

The City of Austin's Solid Waste Services Department is responsible for city-wide litter abatement and collection of solid waste from 163,965 residential customers, 234,965 anti-litter customers, and 2,603 commercial customers, which includes small multi-family dwellings of 4 units or less and a limited number of qualifying small businesses. In addition to providing weekly garbage pick services, the City also offers curbside recycling to its customers.

Using a conservative 7.3 lbs. per person per day and Austin's population of 743,358, the annual tons generated for landfill in Austin, Texas is estimated to be about 1,000,000 tons per year. Modeling information from regional data and other cities of similar size and character, GLA estimated the percentages by market categories of contributing materials in the 1,000,000 tons per year of discards. Many of the values were reconfirmed through site visits with recycling and composting industry representatives in the area. City recycling collection data also indicates that this analysis is accurate. In FY06/07, the City collected over 70,000 tons of recyclable and organic resources: 31,876 tons (45.5%) from curbside recycling; 26,635 tons (38.1%) from collection of yard trimmings and brush; and 12,122 tons (17.3%) from private users of the City's materials recovery facility. Figure 2 separates these materials into categories and highlights that compostable organics compose over half of the total material discarded. These categories were then broken out to the estimated annual tonnages of marketable resources and issued a value based on current market prices (See Table 1). Calculations indicate that the **value of the materials currently sent to the landfill and lost to the local economy is over \$40 million annually.**

With nearly 60% of the residents of Austin living in single-family dwellings and participating in curbside recycling for recyclable materials and organics, achieving Zero Waste among single-family residents is an ambitious, but achievable goal. Yet, is the same true for commercial and multi-family contributors?

Figure 2

Austin Texas Discards Sorted into the 12 Market Categories
Note: Half of the Materials are Suitable for Compost

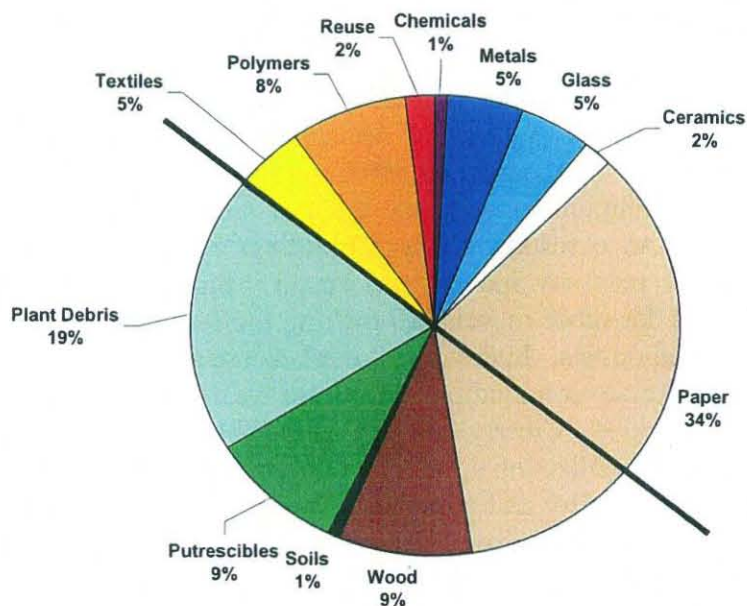


Table 1
Resource Commodity Analysis Austin Texas, 2008
(In order of value of materials discarded)

Categories	%	Annual Tons	\$/Ton ¹²	Annual \$
Paper	36	360,000	50	18,000,000
Reusables	2	20,000	550	11,000,000
Textiles	5	50,000	100	5,000,000
Polymers	8	80,000	50	4,000,000
Metals	5	50,000	40	2,000,000
Plant Debris	20	200,000	7	1,400,000
Putrescibles	9	90,000	7	630,000
Glass	5	50,000	10	500,000
Wood	6	60,000	8	480,000
Ceramics	2	20,000	4	80,000
Soils	1	10,000	7	70,000
Chemicals	1	10,000	5	50,000
Total	100	1,000,000		\$ 43,210,000

¹² Sources for values: U.S. Census, 2006 (710,000), CACOG Regional SWMP 2/05 pages 10 and 15 (7.3 – 8-8) per capita generation rate.

While the City is responsible for single-family residential collection, private haulers are responsible for collecting materials from multi-family residences and all businesses and institutions. Currently, the City can only control the flow of the residential streams, but not the commercial streams. The City can, however, influence what happens in the commercial sector by the policies and programs it adopts. This is best evidenced in the City's Commercial Recycling Ordinance.

Austin has traditionally been a leader in recycling and marketing materials in Texas. The markets for discarded resources are part of the community fabric. According to the City's Recycling Ordinance passed by Council in 1998, companies with 100 employees on site and multi-family residential communities with 100 units or more are required to provide recycling on-site to their tenants. As a result, all large buildings recycle paper thereby supporting a substantially sized paper recovery industry in Austin. Similar benefits from the Recycling Ordinance were reported for other recyclables making the recovery of materials in Austin well established for most commodities. International markets are also thriving and have dramatically increased the value of these commodities in recent years contributing to the success and sustainability of these markets. Clearly, the City is capable of having a greater impact on the commercial and institutional collection system by adopting policies and programs that encourage more environmental responsibility and stimulate a sustainable green market economy. As the City continually reevaluates and improves upon its Recycling Ordinance, another area the City can leverage its waste management authority is through its regulatory authority over waste haulers.

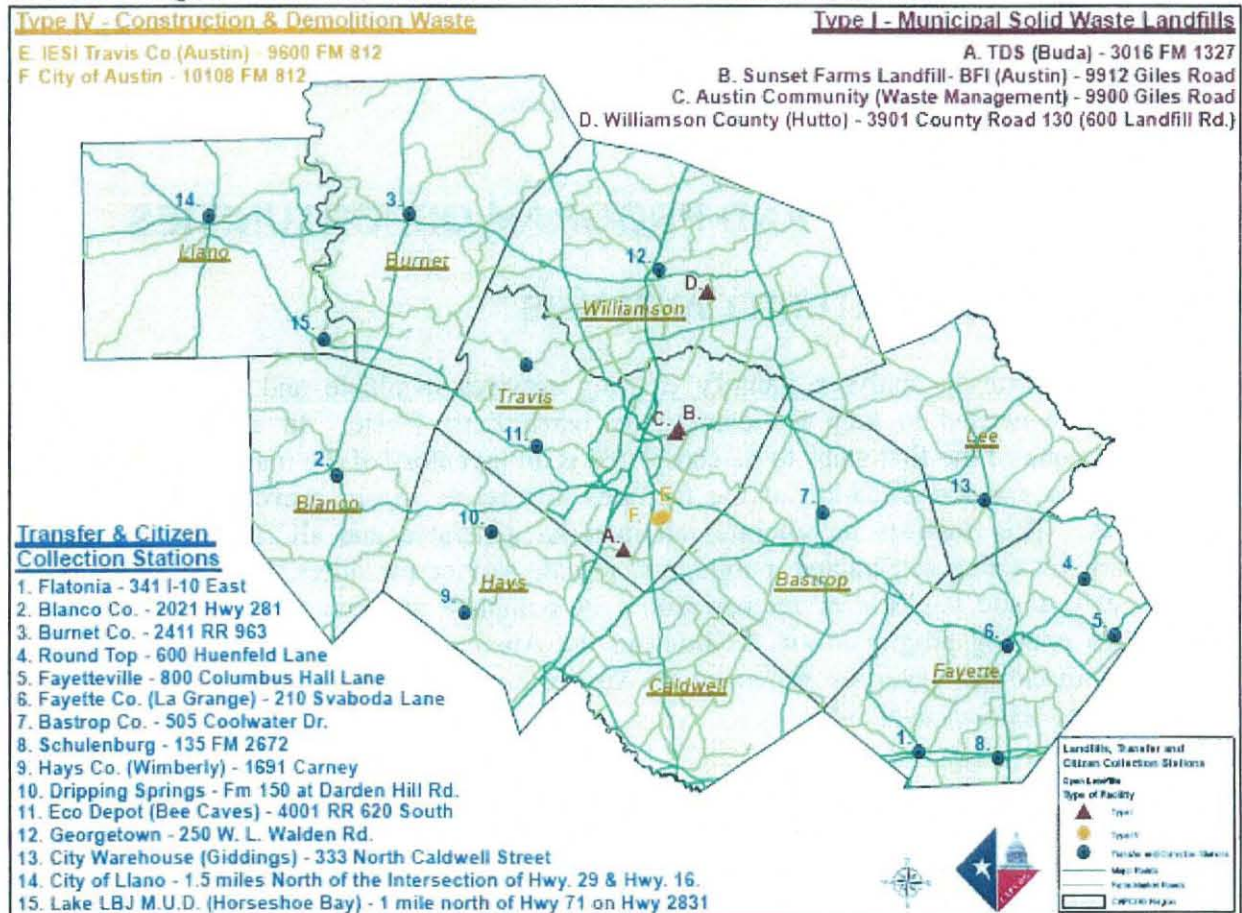
Under Texas State Law, cities are given the authority to regulate solid waste service providers in their communities. The City of Austin currently issues licenses to regulate commercial solid waste haulers authorized to transport waste in the City limits. The current annual fee is a multi-tiered system based on the number of containers and the number and size of trucks operating within the City limits by the hauler. The City of Austin may be able to use its regulatory authority to obtain more information about the total amount of waste being disposed by haulers, develop funding resources to support Zero Waste initiatives, and develop incentives to encourage recycling.

As noted above, the City has limited control over the disposal system. In fact, now that the City has closed its own landfill, it is just like the many other Travis County landfill users. Like many Texas cities, Austin is part of a regional system of landfills, transfer stations and citizen collection stations that are coordinated through the Capital Area Council of Governments (CAPCOG) Solid Waste Advisory Council (SWAC) and the Regional Solid Waste Management Plan as depicted in Figure 3.¹³ According to the Regional Solid Waste Management Plan, "...the implementation of Subtitle-D Regulations has produced the most significant impact on solid waste disposal in the State of Texas.... moving away from reliance on smaller rural landfills, to more regionalized systems, based on larger landfills" (TCEQ - 1995). In 1995, there were five (5) permitted landfills in the CAPCOG region receiving waste, with an additional two (2) facilities permitted, but not receiving waste: Waste Management, City of Austin, Williamson

¹³ Although CAPCOG is responsible for coordinating regional solid waste management needs using the Regional Solid Waste Management Plan, the Texas Commission on Environmental Quality regulates the landfills throughout Texas.

County, BFI Waste Systems, Texas Disposal Systems, IESI, and Travis County. As of 2008, the CAPCOG region has 4 active, permitted Municipal Solid Waste Landfills.

Figure 3
CAPCOG Region Landfills, Transfer, & Citizen Collections Stations



With the CAPCOG Region continually growing and outpacing other Texas communities, this region will be faced with a need to expand existing landfills, open new landfills, or divert a drastic amount of waste from current landfills to properly ensure the health and safety of the region. It has been projected that a total of 23 counties send some if not all of their waste to the four Austin area landfills in addition to the ten Counties that make up CAPCOG. Although there are some possibilities for controlling the flow of wastes going to those landfills, it will take a strong regional consensus to move those possibilities forward.

The focus of CAPCOG outlined in the most recently adopted Regional Plan is to:

- ◆ Encourage Household Hazardous Waste Collection and Diversion Programs
- ◆ Promote public education on integrated solid waste management
- ◆ Promote community clean up events to provide alternatives to illegal dumping
- ◆ Continue and enhance current illegal dumping enforcement programs
- ◆ Continue effective and efficient management and operation of recycling services

- ◆ Explore alternatives to dealing with the disposal of special wastes, including construction and demolition debris, oil, used tires and electronics
- ◆ Encourage proper management and disposal of solid waste
- ◆ Promote reduction in the disposal amount of yard waste and encourage recycling

Many of the focus items identified by the Regional Plan are addressed in the following analysis and recommendations, highlighting how Zero Waste is a logical extension of the policies and programs that have already been adopted in the region.

B. POLICY AND PROGRAM OPPORTUNITIES

1. SERVICE OPPORTUNITY ANALYSIS

Service opportunity analyses identify existing services available and highlight where new services are needed to help the community reach Zero Waste. In a Zero Waste systems approach, one of the first steps to be completed is an inventory of the materials generated in the service area and identification of the facilities that reuse, repair, recycle and/or compost the materials. This analysis incorporates all material generated and all facilities processing the materials, including self-hauled, public, and private service providers. The inventory does not, however, include landfills or incinerators. A complete analysis of the inventory not only identifies existing programs and facilities in the Austin area that currently reuse, recycle or compost discarded materials generated in Austin, but also reveals voids or gaps in material markets and services available.

Discards are identified by standard classifications and sorted into twelve market categories, similar to the pie chart in Figure 2. For each classification, market options are identified, both inside Austin and outside Austin, including internationally. This step also allows identification of products or packages that have unacceptable disposal options and/or need opportunities for new services.

Issues of access, opportunity, availability and knowledge are addressed next. In many cases, such as disposable diapers, the inventory shows that there is no reuse, recycle or compost option. In such instances, these items should be addressed as producer responsibility issues. As Martin Bourque of the Berkeley Ecology Center explains, "If it can't be reused, repaired, rebuilt, refurbished, refinished, resold, recycled or composted, then it should be restricted, redesigned, or removed from production."¹⁴

The results of the market inventory can be found in Appendix B. Options to improve existing systems are summarized in the Program and Facility Analysis section of this Plan.

¹⁴ At the GrassRoots Recycling Network Zero Waste Conference, New York City, April 2005.

2. PROGRAM AND FACILITY ANALYSIS

A review of the service opportunities show the areas where new rules and redesigned storage, collection and processing systems would allow for diversion of more materials from area landfills. The following table identifies the key opportunities.

Table 2
Program and Facility Opportunities

Material	Current Services	Program/Facility Opportunity
Food Scraps	Some commercial food scraps are accepted at one site.	Operating capacity is needed for the whole city.
Fish and Meat Scraps	Some commercial scraps are accepted at one site.	Operating capacity is needed for the whole city.
Used Construction Materials	Habitat for Humanity and Texas Disposal Systems take selected materials.	Need 12-category resource recovery centers located in neighborhoods to handle.
Treated Wood	Habitat for Humanity is limited to reusables.	Need 12-category resource recovery centers located in neighborhoods to handle.
Fines (e.g. soil from C&D excavation)	Residential market available. Limited commercial services available.	Need 12-category resource recovery centers located in neighborhoods to handle clean soil or establish systems for nurseries and contractors handle these materials directly
Window and Other Glass	Limited market if recovered completely during construction/demolition.	Need glass market for window and other glass
#3-7 and Other Plastics	One market.	Existing infrastructure should be evaluated to determine if it is capable of handling capacity.
Diapers/Hygiene Products	No market.	Products need redesign, restrictions or regulations.

Based on the analysis above, the most opportunity to improve diversion exists among the materials that already have a market potential to be reused, composted, or recycled such as used construction materials, treated wood, and organic materials such as food wastes. Several of the policy options discussed later in this Plan have the same goal as Single-Stream Recycling and Resource Recovery Centers, making services more readily available in order to increase participation and expand the diversion services provided in Austin. There is also a significant amount of work needed in the area of making manufactures take responsibility for taking back products and packaging they sell in the area that are not safe for landfills or are difficult to recycle locally.

3. ZERO WASTE POLICY AND PROGRAM OPTIONS

As previously stated, there is no one right way to achieve Zero Waste and many paths can be taken. The City has already adopted significant local policies establishing rules for residents and businesses to participate in the City's solid waste and recycling system. The City's Recycling Ordinance¹⁵ requires that all businesses with 100 employees or more and multi-family properties with 100 units or more must provide on-site recycling services. The Recycling Ordinance was designed to:

- ◆ Increase access to the benefits of recycling and waste reduction for area businesses and multi-family properties within the City of Austin
- ◆ Help increase the life of local landfills
- ◆ Decrease disposal costs for area businesses and multi-family properties
- ◆ Have a positive impact on the environment generally in terms of reduced pollution and energy consumption.

The Recycling Ordinance empowers the Director of the Solid Waste Services Department to adopt and revise rules, procedures and forms to regulate commercial and multi-family recycling in the City of Austin. Revisions to existing policies as well as most of the additional policies recommended below could cite the same authorities and purposes identified by the Recycling Ordinance and enhanced by the provisions of the Climate Protection Initiative adopted by Austin City Council in 2007.

During the Zero Waste Plan process, several policy and program options were discussed among community members and stakeholders. Appendix D details all options to provide a better understanding of everything considered in making recommendations for the City of Austin and the region. Additionally, as the City achieves its goals, staff can look back at the options discussed and evaluate whether or not to implement the remaining options. The policy and program options detailed in Appendix D are organized by the following categories:

- ◆ **Upstream** - Advocate for Extended Producer Responsibility (EPR) legislation and programs for producers to take back their products and packaging.
- ◆ **Downstream** - Reduce, reuse, recycle and compost all materials that are discarded for their highest and best use.
- ◆ **Green Business, Green Buildings and Jobs** - Reinvest discarded resources into the local economy with incentives and support for green, sustainable, and Zero Waste businesses.
- ◆ **Residuals Management and Regional Coordination** – Stop or regulate the flow of wastes from outside the area into landfills in the Austin area as the region phases out reliance on landfills.

These options were not intended to be adopted together. Some are complementary while others work best independently. In some cases, options may even conflict with one another. Each of the listed policies and programs were further organized into 3 categories:

¹⁵ City Code Chapter 12-3, Article VI

- ◆ **Voluntary, Education & Incentives** may be the easiest policies and programs to implement, but may not achieve goals by themselves. Most of these options would complement other policies and programs.
- ◆ **New Rules & Advocacy** may be done with virtually no City funding required, except for initial education and ongoing enforcement staffing. These options may also require the largest investment of political capital to adopt them, but could also shift the responsibility for funding new programs to those who are currently benefiting the most from the sale of products and packaging. These approaches may also require the City to work with other interested communities and stakeholders in Texas to develop collaborative policies and programs, and/or to work with the State Legislature to adopt new policies and programs statewide.
- ◆ **New City Programs** will generally require the most funding. For example, new City programs could expand the approach used to serve single-family residents to serve multi-family residents and businesses. Whether the City provides the services itself, or contracts for services to be provided, it will need to budget for those services and plan for the likelihood of on-going expenses. New programs for multi-family and commercial businesses will require new funding sources, which could be obtained from new rate structures, fees or taxes on disposal.

UPSTREAM POLICY AND PROGRAM OPTIONS

Wasting is a design decision. Wasting is not inevitable. Producers design products and packaging “upstream” from the local government solid waste and recycling system. For every ton of waste in the local solid waste and recycling system, there are 71 tons produced “upstream” from mining, manufacturing and distribution of wastes.¹⁶ Producers and retailers have shifted the responsibility of managing the disposal of after-life products to local governments. In a Zero Waste system, once they accept physical and/or financial responsibility for their products and packaging, producers and retailers will have an incentive to design waste out of the system. This is known as “Extended Producer Responsibility” (EPR) or “Product Stewardship.”

EPR is one of the most powerful opportunities that exist to move society and the economy towards Zero Waste, particularly for products and packaging items that are toxic or currently difficult to reuse, recycle or compost. In advocating for EPR, the system should establish efficient repair and reuse programs to retain the form and functions of products, rather than taking back products and packaging to just be crushed or shredded for recycling. EPR systems should also ensure the redesign of products and packaging to eliminate waste and encourage durability and longer product life cycles.

Local governments have authority in the area of health and sanitation to make rules as to what can and cannot be placed into the City waste system. If a material has been designated by a State or Federal Agency to be a pollutant or banned from the landfill, local governments can require the seller of the material to be responsible for disposal of that product. In New York City, an

¹⁶ Source: Institute for Local Self-Reliance, *Wasting and Recycling in the US 2000*, page 13, <http://www.grrn.org/order/w2kinfo.html>.

ordinance was recently adopted that requires all retailers of electronic products to takeback those products to be reused or recycled.¹⁷ The statutory basis for the New York City legislation was the state's Solid Waste Management Act, which requires local governments to provide solid waste and recycling services. Although Texas's Solid Waste Disposal Act does not provide local governments with the same regulatory authority as in New York, Austin can work with other regions and surrounding communities to identify key elements of the Texas Solid Waste Disposal Act that can be utilized or modified to help the Austin area achieve Zero Waste goals.

Under the Texas Solid Waste Disposal Act, the City of Austin and other local governments can assert their combined influence to develop and adopt policies that keep certain materials out of regional landfills. Once City and/or regional staff identify and agree on the options they are most interested in, further legal review will determine how the policy can be adopted locally or regionally, or whether legal authority from the State may be required. If State legislation is required, the City could use this opportunity to collaborate with surrounding communities, identify the materials that are most difficult and costly to manage locally/regionally, and unite local governments behind a common goal of shifting disposal responsibility of certain materials back to the producer.

Under Mayor Kirk Watson's leadership from 1997-2002, the City of Austin was an early leader in favor of producer responsibility and takeback programs. In 2007, the Austin City Council and other local governments took a stand in favor of producer takeback recycling of electronic waste.¹⁸ Now a State Senator, Kirk Watson sponsored HB2714, landmark legislation passed in 2007 by the Texas Legislature requiring manufacturers who sell computers in Texas to provide convenient and free computer recycling. This is a model for other ways to collaborate on a statewide basis to develop the new rules, policies and incentives that will be essential to achieve Zero Waste.

DOWNSTREAM POLICY AND PROGRAM OPTIONS

Downstream policies and programs are designed to reduce, reuse, recycle and compost materials that are discarded for their highest and best use. Highest and best use should be determined according to a hierarchy adopted by the City to guide its evaluation of options in the future. Austin may wish to develop its own or adopt a hierarchy like the one used in the City of Oakland Zero Waste Plan shown in Appendix H.

Zero Waste has been defined by the Zero Waste International Alliance as an economic and physical system that emulates natural cycles, where all outputs are simply an input for another process. This means designing and managing materials and products to place the highest priority on conserving resources and retaining their form and function without burning, burying, or otherwise destroying their form and function. It means eliminating discharges to land, water or air that harm natural systems. It means preventing rather than managing waste and pollution, and recommitting to the priority order of the waste reduction hierarchy which is: (1) reduce consumption; (2) reuse what is left; (3) recycle anything that is no longer usable; and (4) landfill any residuals.

¹⁷ See: http://wasteage.com/news/NYC_e-waste_veto_overridden/

¹⁸ The Central Texas cities of Georgetown, Kyle, San Marcos, Lakeway and Round Rock as well as Hays and Travis Counties all passed resolutions in favor of producer takeback recycling of electronic waste.

Voluntary policies, education and incentives should be designed to engage, educate, motivate and inspire diverse audiences with simple, positive, clear communications. Policies and programs should develop partnerships within and beyond Austin, among other government agencies, businesses, and non-government organizations. Policies, incentives and new rules should aim to reduce and eliminate incentives for landfilling materials and phase out use of toxic materials in products and processes. Educational initiatives should champion, highlight, and celebrate successes in moving towards Zero Waste. The City should provide information about Zero Waste and sustainability actions – what to do, how to do it, and why it is important.

The two key areas of discussion for downstream options focused on (1) expansion of reuse, recycling, and composting opportunities and (2) modifying existing systems such as fee structures and permitting processes to create incentives to recycle more and reduce waste.

Expanding Reuse, Recycling, and Composting Opportunities. Like Austin, many communities are now implementing “single-stream” recycling programs for their single-family residential customers. Austin is replacing the current 18-gallon recycling bins with 90-gallon rolling carts in which all recyclables can be combined together. The new program is expected to increase recycling participation rates by 40%, based on the success of City conducted pilot programs. The reason for such a high increase in participation can be attributed to the fact that single-stream recycling programs make it more convenient for the public to participate and recover more materials.

The key to the success of single-stream recycling programs is providing strong education and information to participants and ensuring that processing facilities are designed and operated to produce no more than 10% residue. For Austin, it will also mean educating the public that separating “wet” waste from “dry” recyclable materials, which will be collected together in the single-stream carts, will be essential to ensuring single stream’s success. Many successful Zero Waste communities implemented single-stream recycling carts, and later added another cart for all organics including yard trimmings, food scraps and food-soiled paper. After Austin launches its single-stream recycling program and has time to fine-tune the new city-wide recycling system, the next step should be to evaluate how to provide composting of all organics, including food scraps.

Resource Recovery Centers can help provide recycling services where no other options are available. Resource Recovery Centers are generally locations or facilities where all 12 market categories of materials can be brought by residents and/or businesses to be reused, recycled or composted. Typically the materials are placed into commercial or industrial-sized containers like roll-off boxes, or placed into designated areas on the ground separated by large concrete blocks to separate the different material drop-off areas. As the City continually evaluates its Recycling Ordinance, Resource Recovery Centers may be a viable alternative option for smaller commercial and multi-family customers.

Rate and Fee Structures. Garbage rate structures and permitting fees are two powerful tools to encourage increased diversion. The City of Austin adopted a Pay as You Throw rate structure to encourage residential customers to reduce and recycle. However, changes in that rate structure could significantly contribute to meeting Zero Waste goals as services are expanded and new

programs are brought on line. Suggested changes to that rate structure are detailed in the Downstream Options in Appendix D.

While the City does not control private collection fees, like public service providers, private haulers should pay for valuable materials and provide free or low cost hauling for clean, source-separated materials. Service providers should also make up any lost revenues by charging more for solid waste hauling services, not recyclables. Such a fee structure rewards businesses and organizations that comply with the City Recycling Ordinance, which requires source separation of reusable, recyclable and compostable materials.

To encourage participation in recycling and diversion efforts, especially among construction projects, the City could also incentivize recycling of construction materials with adjustments to its permitting fees or by requiring deposits refunded when waste diversion goals are met. The City could also use its authority to add fees, taxes, and data reporting requirements on waste hauling as conditions of service providers operating in the City. To fund new Zero Waste initiatives, the City could encourage the adoption of fees and taxes on waste disposal by counties and the State. These fees would be particularly important if the City selected to provide any of the new City program options identified in Appendix D.

GREEN BUSINESS, GREEN BUILDINGS AND JOBS

Zero Waste policy goals should recognize the significant opportunity for generating “Green Collar” jobs through reinvestment of discarded resources into the local economy. Zero Waste policies must help retain and expand local and regional reuse, recycling, composting and green manufacturing businesses and facilities, which are critical elements to sustain Zero Waste initiatives and become a truly sustainable city.

The City should offer tangible economic incentives and technical assistance for green, sustainable, and Zero Waste businesses. Expanding existing incentive programs, including Green Building and Green Business programs, will also support and energize businesses around Zero Waste goals. The City could assist existing reuse, recycling and composting service providers to upgrade their appearance and operations, in order to be good neighbors. To identify the best locations for needed services, the City could also work with environmental justice, neighborhood, workforce development, and business development organizations.

Austin has already experienced major successes in the use of recycled materials, particularly at City Hall, green buildings in the downtown area, and the new Long Center for the Performing Arts, which recycled 97% of the old Palmer Auditorium. Austin Energy (AE) highlighted that most products are delivered to job sites in protective packaging which results in cardboard, plastic, and Styrofoam waste even though the product itself may not create any additional waste in its installation.¹⁹ Some materials that do not have construction waste may not have manufacturing waste, since they are fabricated in a controlled process that generates little, if any, waste. The AE rating programs attempt to provide incentives for use of products that are more durable, have a longer lifespan, require no additional finishing on-site and have less frequent

¹⁹ This comment and the following paragraph are based on an email from Miki Cook, Austin Energy, April 8, 2008.

maintenance and repair cycles. AE's programs also give credits for products made from recycled content.

Most of the projects enrolled in the Austin Energy program surpassed the 50% waste diversion requirement significantly. AE's multi-family residential program recently separated from the commercial program in August 2007 and adopted the same standard waste diversion requirement of 50% and optional credit base of 75% waste diversion as used under the commercial program. The AE single-family residential program has documented diversion rates on the Mueller redevelopment project, which requires a minimum of 25% diversion rate, even though most builders have documented rates of over 30% and 40% in the first six months of construction.

Businesses are leading the way to Zero Waste, diverting over 90% of their wastes from landfills and incinerators.²⁰ Zero Waste businesses that have been documented have all saved money, reduced their liabilities, increased their efficiency, and contributed significantly to addressing climate change. Designing waste out of the system by process improvements and decreasing the amount of materials used in products and packaging saves the most money. Reusing products and packaging (e.g., use of returnable shipping containers and pallets) saves the next most money. Recycling and composting both avoid solid waste collection and disposal costs, as well as generate revenue from the sale of the materials recovered. Once a Zero Waste system is established in Austin, local businesses that embrace Zero Waste goals should save money, and those that don't embrace the goals could pay more for wasting.

RESIDUALS MANAGEMENT AND REGIONAL COORDINATION

Although Austin is striving for Zero Waste, the City must recognize that it will have an on-going need for some amount of disposal capacity as programs are phased in. This Plan defines success at achieving the Zero Waste goal to be reducing by 20% the per capita solid waste disposed to landfills by 2012, diverting 75% of waste from landfills and incinerators by 2020, and 90% by 2040. This means that there still may be up to 10% of solid waste to dispose of otherwise. As a result, the City does need to ensure that there is some on-going disposal capacity to meet its long-term needs. If others use up available landfill space, then the Austin Zero Waste initiatives will not solve Austin's long-term waste management needs by themselves.²¹

In Travis and Williamson Counties, landfills reported to TCEQ that they receive wastes from up to 33 counties within approximately 100 miles surrounding this area as depicted in Figure 4 of Appendix E.²² This disposal practice evolved over the past decade as smaller landfills in outlying areas closed down because they could not afford to comply with new Federal and State regulations implementing Subtitle D landfill regulations of the Federal Resource Conservation

²⁰ Zero Waste Businesses identified to date in the Austin Area include: Toyota (San Antonio), Dell Computers, Applied Materials, Barr Mansion, Habitat Suites, Goodwill Computer Works, Balcones Recycling, and Allied Recycling.

²¹ According to the latest landfill data available from TCEQ from calendar year 2007, there is about 30 million tons of remaining capacity in area landfills, and it is currently being used at a rate of 2.2 million tons per year. That yields a total remaining life in area landfills at current use levels of 13.6 years.

²² Atascosa, Bandera, Bastrop, Bell, Bexar, Blanco, Burleson, Burnet, Caldwell, Comall, Coryell, Fayette, Gillespie, Gonzales, Guadalupe, Hays, Lampasas, Lee, Llano, Mason, McLennan, Milam, San Saba, Travis, Washington and Williamson Counties.

and Recovery Act. The low cost of large regional landfills in Travis and Williamson Counties acted as a magnet for waste from an even larger region and undercut the economics of reuse, recycling and composting.

Therefore, although all of the landfills in the Capital Area are privately owned and cannot be controlled by local governments, **Austin's Zero Waste plan must include finding ways to stop or regulate the flow of wastes from outside the area into landfills in the Austin area.** While local governments cannot demand flow control among private landfills, there may be ways to influence flow control.

Under Texas law, counties with landfills in their jurisdiction can adopt policies not to allow NEW landfills.²³ Counties are also empowered to develop solid waste management plans that could stipulate conditions for use of area facilities. If new landfills opened, Travis and Williamson Counties Solid Waste Management Plans could add language that only allows the use of landfills in the County by counties that have adopted Zero Waste goals appropriate for their communities, and are working to implement those goals.

Under federal law, counties or cities could stop or limit the flow of wastes into landfills that are publicly owned. Currently, only one landfill is publicly owned and it is located in Williamson County. Private landfill owners, however, may consider public acquisition in exchange for allowing them to continue operating the facility, and transferring long-term responsibility for the landfill to the public entity. The public agency could be a city or county government, CAPCOG, or a Solid Waste District composed of one or more of the above. Once public ownership is obtained, the public agency could prioritize phasing out imported wastes from outside the CAPCOG region.

Contracts between agreeing parties are also significant tools that could be used to address the lack of regulatory authority. Travis County, or a regional Solid Waste District, could negotiate with landfill owners in the region to voluntarily adopt a landfill surcharge to fund new reuse, recycling and composting programs, and to fund long-term liabilities after the state and federally mandated 30-year post-closure care period. In exchange, landfill owners could be enticed to participate in these initiatives if they were also considered to be eligible parties for grants or low-cost loans to fund new reuse, recycling and/or composting programs that they would like to build locally. Contracts could be structured between the governmental entity and the landfill owner not to go into effect until all the landfills in Travis County²⁴ adopt comparable provisions. This approach could generate a new source of cash for landfill owners that they could not afford to charge themselves alone, as they would be put at a competitive disadvantage. Such an agreement could level the playing field for existing landfill owners to invest in more waste reduction activities and provide more Zero Waste programs and services.

As part of this Zero Waste Plan process, the City met with Travis County and the Solid Waste Advisory Committee of the Capital Area Council of Governments (CAPCOG). As an outcome

²³ Under Section 364.012 of the Texas Health and Safety Code, the County may prohibit the disposal of solid waste in one location as long as it designates another area of the County where such disposal is not prohibited. See: <http://tlo2.tlc.state.tx.us/statutes/docs/HS/content/html/hs.005.00.000364.00.htm#364.012.00>

²⁴ and perhaps Williamson County as well.

of those meetings, the City received letters supporting the City's Zero Waste initiatives, including working together on areas of common interest, such as:

- ◆ Expanded tire recycling programs;
- ◆ Expanded composting and organic waste diversion programs;
- ◆ Expanded Green Building initiatives throughout the region;
- ◆ Expanded recycling and reuse of construction and demolition debris;
- ◆ Development of Green Districts and Resource Recovery Parks; and
- ◆ Support for Extended Producer Responsibility and manufacturer take-back policies and programs.

CAPCOG's SWAC also noted that Zero Waste initiatives support the waste reduction goals of the Regional Solid Waste Management Plan, and the recommendations of the Market Analysis of Recoverable Materials (2007) prepared for the CAPCOG region by R.W. Beck.

Neighboring communities and counties should clearly understand that Austin alone cannot control what happens with solid waste in the region nor is that Austin's goal. Instead, Austin must collaborate with CAPCOG and surrounding communities to address the waste management challenges and opportunities facing the region.

One additional area in which regional cooperation would be particularly helpful would be in documenting the amount of solid waste disposed of in area landfills from different communities and different sectors, and how much is being reused, recycled or composted within the region through public, private and nonprofit activities. It is widely recognized that such data is not currently available to accurately assess the current status of wasting and recycling in the area. Data should be reported and assessed using the 12 market categories detailed previously. This data would be helpful for the City's design of residential solid waste, reuse, recycling and composting facilities. It would also provide a measurable baseline for evaluating progress towards the Zero Waste goals and greatly assist in enforcement and understanding of how effective existing ordinances such as the Commercial Recycling Ordinance and future policies and programs are in achieving the City's goals.

Since the flow of materials occur on a regional basis, it would be best if more detailed reporting and data analysis were developed on a regional basis. Collaborating with CAPCOG will be critical to collecting this data. In many locations, data is required to be reported from private operators as conditions of permits, franchises or contracts. In Austin, a revised system of operating permits should include detailed data reporting requirements, as is commonly done in many other locations. Data for such reports could be sent to an independent third-party to protect private business practices from public review and ensure fair competition.

Additionally, the region may want to consider a regional waste characterization study funded by CAPCOG grants to get a better understanding of the existing waste system.

4. ENVIRONMENTAL IMPACTS

If recovered for recycling, reuse, and/or composting, the amount of materials shown in Resource and Commodity Table (Table 1) would have a clear impact on global warming and green house

gas production. Significant savings come from avoiding the wastes produced from mining, manufacturing and distribution of products equivalent to 71 tons for every ton of products in the local waste stream. Using the total amount of the materials currently landfilled in Austin, the EPA WARM computer model calculated that the Austin area could experience an estimated reduction of carbon measured by metric tons of Carbon Equivalent of nearly 500,000 MTCE.²⁵ This is a significant emission reductions noted in Table 3.

Table 3 - EPA WARM Model Summary¹: Recycling/Composting vs. Landfilling				
Material	Tons: Landfilled	Total MTCE*	Tons Recycled / Composted	Total MTCE
Glass	50,000	518	50,000	(3,789)
Dimensional Lumber	12,000	(1,596)	12,000	(8,038)
Food Scraps	90,000	17,764	90,000	(4,874)
Yard Trimmings	200,000	(11,947)	200,000	(10,831)
Mixed Paper	360,000	34,187	360,000	(347,263)
Mixed Metals	50,000	518	50,000	(71,692)
Mixed Plastics	80,000	829	80,000	(32,600)
Mixed Organics	58,000	3,737	58,000	(3,141)
Aggregate	20,000	207	20,000	(42)
Total	920,000	44,217	920,000	(482,270)
*MTCE = Metric Ton Carbon Equivalent				

The following table shows the comparison of emissions from landfilling the materials versus recycling, composting, or reusing those materials.

Table 4 - Comparison of Emissions

Equivalency Results²	Landfilled (Addition)	Recycled / Composted (Subtracting)
Sum of the GHG emissions	162,133	1,768,323
Annual GHG emissions from passenger vehicles	29,695	323,869
CO2 emissions from gallons of gasoline consumed	18,403,254	200,717,745
CO2 emissions from barrels of oil consumed	377,053	4,112,380
CO2 emissions from tanker trucks' worth of gasoline	2,165	23,615
CO2 emissions from the electricity use of homes for one year	21,475	234,215
CO2 Emissions from the energy use of homes for one year	14,310	156,074
Carbon sequestered by tree seedlings grown for 10 years	4,157,248	45,341,624
Carbon sequestered annually by acres of pine or fir forests	36,848	401,892
Carbon sequestered annually by acres of forest preserved from deforestation	1,131	12,334
CO2 emissions propane cylinders used for home barbeques	6,755,582	73,680,139
CO2 emissions from burying railcars' worth of coals	847	9,234
GHG emissions avoided by recycling tons of waste instead of sending it to the landfill	55,908	609,767
Annual CO2 emissions of coal fired power plants	0.03	0.38

²⁵ http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html

5. ZERO WASTE AND JOBS ANALYSIS

“Austin has 5 colleges. It has a greater concentration of people with intellectual ability than any other city in the Southwest. Combined with shrewd mercantile ability and manufacturing know-how, it has also become one of the computer capitals of the world. I believe we should use Austin’s gifts to solve some of the world’s problems....”²⁶

In keeping with the spirit of Paul Robbins quote above, a Zero Waste approach would lead to many job opportunities from the processing of reused, recycled and composted materials, manufacturing of new products, and the sale and distribution of those products.

For every 10,000 tons of waste landfilled, only 1 job is created. For every 10,000 tons of organic materials composted, 4 jobs are created. For every 10,000 tons of recyclables processed, 10 jobs are created. For every 10,000 tons of reusables processed, 75-250 jobs are created.²⁷ The recycling industry in America is as large as the automobile industry.²⁸ In California, the recycling industry is as large as the movie and video industry.²⁹ Each dollar spent on diversion instead of landfill disposal generates nearly twice as many sales tax revenue dollars and jobs.³⁰

For the million tons of wastes currently disposed in Austin area landfills, the total number of jobs that could be generated is estimated to be just over 1,800.

Table 5 - Jobs from Discards³¹

Market Category	Tons Per Year	Jobs Potential
1. Reuse	20,000	249
2. Paper	360,000	63
3. Plant Trimmings	200,000	60
4. Putrescibles	90,000	40
5. Wood	60,000	36
6. Ceramics	20,000	7
7. Soils	10,000	20
8. Metals	50,000	29
9. Glass	50,000	125
10. Polymers	80,000	745
11. Textiles	50,000	425
12. Chemicals	10,000	20
Total	1,000,000	1,819

²⁶ Paul Robbins, “Creating An Employment Base From Environmental Business,” Austin Environmental Directory, 2006, page 2.

²⁷ Source: Institute for Local Self-Reliance

²⁸ Source: <http://www.epa.gov/jtr/econ/rei-rw/rei-rw.htm>

²⁹ Source: *Recycling: Good for the Environment/Good for the Economy*, CA Integrated Waste Management Board, September 20, 2004, page 5.

³⁰ From: www.stopwaste.org

³¹ Based on analysis done by Institute for Local Self-Reliance for State of Delaware 2005.

C. POLICY AND PROGRAM RECOMMENDATIONS

1. UPSTREAM POLICY AND PROGRAM RECOMMENDATIONS

- a. Be a strong advocate for Extended Producer Responsibility (EPR) legislation and programs regionally, statewide and nationally. Work to form the Texas Product Stewardship Council composed only of representatives of local government to clearly address this “unfunded mandate.”
- b. Work to obtain legal authority and regional cooperation to ban problem products and packaging or require businesses and institutions to take back designated products and packaging sold in Austin, CAPCOG, and in the State that are toxic in their manufacture, use, or disposal, and/or are not currently recyclable in the area.
- c. Develop public/private and or intergovernmental partnerships to setup convenient neighborhood centers for reusables, recyclables, compostables, C&D and household hazardous wastes funded by producers and/or retailers.
- d. Explore other ways to encourage and support on-site composting at homes, schools and colleges, businesses and institutions with sufficient space so that the producers of these organic wastes take care of it themselves.

2. DOWNSTREAM POLICY AND PROGRAM RECOMMENDATIONS

- a. City of Austin agencies lead by example to implement all actions asked or required of residents and businesses.
- b. Encourage venues and special events to adopt Zero Waste goal and use incentives and technical assistance to help them implement goals.
- c. Continue programs on an on-going basis to educate residents, businesses and visitors about how and where to reduce, reuse and recycle in Austin.
- d. Update, expand, educate and effectively implement the Commercial and Multi-Family Recycling Ordinance and encourage other governmental entities to follow Austin’s lead.
- e. City review residential Pay As You Throw rate structure on regular basis at a minimum of every five years to phase-in more incentives for residents to reduce wastes and recycle more, particularly once the single-stream recycling program is implemented. Include innovative ways to address the use of excess garbage bags and stickers to promote recycling. Include additional revenue needed to fund new residential Zero Waste initiatives in structuring rates.
- f. Support continuation and expansion of local, regional and state landfill fees and surcharges, hauling fees, and bond issues to fund low-interest loans, grants, contracts and/or staffing (comparable to other large cities) to develop needed programs and infrastructure to support Zero Waste programs and initiatives.
- g. Set up system for commercial waste hauling that specifies recycling services, reporting and hauling fees.
- h. Adopt a City goal that no compostable organics go to landfill by 2015, including support of a statewide legislative initiative.
- i. Develop pilot programs by the City of Austin and through public/private partnerships to incorporate food scraps and food-soiled paper to City of Austin’s residential and commercial organics collection program.

- j. Investigate and develop needed legal authority to require businesses and institutions in Texas to recycle food scraps and food-soiled paper and mandate private haulers and solid waste management facility operators to establish needed infrastructure to properly manage those materials.

3. GREEN BUSINESS, GREEN BUILDINGS AND GREEN JOBS

- a. Adopt Precautionary Principle for City purchases and Zero Waste purchasing goals.
- b. Develop one or more Green Districts and/or Resource Recovery Parks in the Austin area or nearby and encourage development within the CAPCOG region.
- c. Ask Businesses to adopt and implement Zero Waste goals.
- d. Work with Austin Energy Green Building Program to:
 - 1) Review recycling goals and ensure that they are based on % diverted from facilities certified by Austin Energy, another City department, or CAPCOG.
 - 2) Evaluate how to revise its reuse goals to value the recovered products by the price for which they are sold, or some multiple of their weight, to reflect the higher value of reuse.
- e. Expand Austin's use of required Green Building waste management and recycling standards for all major projects in the City, not just special development areas.
- f. Work to pass an Ordinance to require in all new construction that adequate space be provided for recycling, composting and trash containers.
- g. Work with state agencies and local governments to use more recycled and compost products, especially in the CAPCOG region.

4. REGIONAL COORDINATION AND RESIDUALS MANAGEMENT

- a. Ask CAPCOG SWAC to adopt a resolution in support of Austin's Zero Waste Plan.³²
- b. Ask CAPCOG and all counties that currently use landfills in Travis and Williamson Counties to support Austin's Zero Waste goal and to work together to implement that goal.
- c. Work with CAPCOG to develop more detailed data reporting system for solid waste and recycling for the entire region.
- d. Work with Travis County, Williamson County, and the CAPCOG SWAC to identify ways to influence, stop, or regulate the flow of wastes from outside the CAPCOG area into landfills in the Austin area.
- e. Investigate alternatives for regional and state cooperation to support and implement the Zero Waste policies in jurisdictions outside the City of Austin and support needed State legislative initiatives.

Zero Waste is an ambitious but important endeavor. No single strategy will result in success and each community must carve its own path, cognizant of and willing to work within its existing political environment, financial boundaries, and legislative systems. The next step down the path to Zero Waste will be the development of a Solid Waste Services Master Plan that will include detailed timetables and budget to implement this Zero Waste Plan. By utilizing various strategies identified in this plan, developing supportive partnerships, and remaining dedicated to the long term goal of Zero Waste, Austin will achieve its goal of being among the most sustainable cities in the nation.

³² See Attachment F for letters of from CAPCOG and Travis County supporting Austin's Zero Waste initiatives.

APPENDICES

- ◆ APPENDIX A - LIST OF ZERO WASTE PLAN MEETINGS
- ◆ APPENDIX B - PRODUCT & MATERIALS MARKET INVENTORY
- ◆ APPENDIX C – EXISTING RECYCLING ORDINANCE
- ◆ APPENDIX D - POLICY & PROGRAM OPTIONS FOR DISCUSSION
- ◆ APPENDIX E – MAP OF CONTRIBUTING COUNTIES
- ◆ APPENDIX F – REGIONAL LETTERS OF SUPPORT
- ◆ APPENDIX G - MODEL EPR RESOLUTION
- ◆ APPENDIX H - HIGHEST AND BEST USE HIERARCHY
- ◆ APPENDIX I - ZERO WASTE RESOURCES

APPENDIX A - LIST OF ZERO WASTE PLAN MEETINGS

January 2008

- ◆ Solid Waste Services Department (SWS) Staff
- ◆ Orientation Tour of Facilities (Balcones Recycling, Hornsby Bend Dillo Dirt Composting Program, TRIAD Building Maintenance, Goodwill Industries, Center of Maximum Potential, Habitat for Humanity, BFI Recycling, Ecology Action, Texas Disposal System)
- ◆ Austin Solid Waste Advisory Commission

February 2008

- ◆ Public Meeting
- ◆ Green Business (open to the public)
- ◆ City Staff
- ◆ Service Providers
- ◆ Austin Long Range Solid Waste Planning Task Force (invited CapCOG reps.)
- ◆ Austin Energy Green Building
- ◆ Texas Campaign for the Environment

March 2008

- ◆ City Council Candidates and City Council Aides (scheduled, but rained out)
- ◆ Public Meeting (scheduled, but rained out); Zero Waste Challenge issued
- ◆ Green Business Public meeting
- ◆ Organics Focus Group (Hotels, Bars, Restaurants, grocers, food distributors, nurseries)
- ◆ Green Buildings + Construction and Demolition debris Focus Group - Architects, Contractors, Developers, Austin Energy
- ◆ Thrift shops and Reuse - Service Providers (private and nonprofits)
- ◆ Austin Long Range Solid Waste Planning Task Force
- ◆ Elected officials and Business Leaders at Barr Mansion
- ◆ City Economic Development and Small Business Development staff
- ◆ Capital Area Council of Governments (CAPCOG) SWAC
- ◆ Recycling and Composting Service Providers

April 2008

- ◆ SWS staff
- ◆ Citywide Dept. Directors and Asst. Directors
- ◆ City Council Aides
- ◆ Austin Long Range Solid Waste Planning Task Force
- ◆ Austin Small Business Development Program
- ◆ State Staff (TxDOT)
- ◆ Travis County (Comm. Gomez, Eckhardt, aides and staff)
- ◆ Austin Independent School District
- ◆ CAPCOG SWAC

APPENDIX B - PRODUCT & MATERIALS MARKET INVENTORY

Item	Programs/Facilities Accepting Materials
1. Reusable	
Appliances (e – waste)	Goodwill, Computers for Kids, Axxess Technologies, Earth Protection Services
White Goods	Goodwill: Salvation Army: TDS Landfill, COA Diversion Recycling Center, Austin Energy's refrigerator pickup and recycling program
Durable plastic products	Goodwill, Salvation Army, Thrift stores
Usable Textiles	Goodwill, Salvation Army, St. Vincent de Paul Store, Assistance League of Austin Thrift House,
Mattresses	Salvation Army: Habitat for Humanity:
Furniture	Goodwill: Salvation Army Re-Sale, Big Brother/Big Sister, ARCH, any non-profit organization, St. Vincent de Paul Store, Assistance League of Austin Thrift House
Books	Goodwill, Salvation Army Re-Sale, Bookstores, Library, Austin libraries, Ecology Action, Half Price Books stores various locations
Building Materials	Habitat for Humanity (limited)
other reusables and repairables	Goodwill, Salvation Army Re-Sale, Habitat for Humanity, Austin's Yellow Bike Project, Bikes Not Bombs
2. Paper	
Cardboard	COA-MRF, Balcones Recycling, Allied Waste Services, Moving Company, Ecology Action, Solid Waste Services, Ecology Action
White ledger	COA-MRF, Balcones Recycling, Allied Waste Services, Recycle curbside, Paper retriever dumpsters, Ecology Action, Solid Waste Services
Newsprint	COA-MRF, Balcones Recycling, Allied Waste Services, Recycle curbside, Paper retriever dumpsters, Ecology Action, Solid Waste Services
Magazines / Catalogs	COA-MRF, Balcones Recycling, Allied Waste Services, Recycle curbside, Paper retriever dumpsters, Ecology Action, Solid Waste Services
Other office paper	COA-MRF, Balcones Recycling, Allied Waste Services, Recycle curbside, Paper retriever dumpsters, Ecology Action, Solid Waste Services
Paperboard	COA-MRF, Balcones Recycling, Allied Waste Services, Recycle curbside, Paper retriever dumpsters, Ecology Action
Other / Composite paper	Balcones Recycling, Recycle curbside, Paper retriever dumpsters, Ecology Action
3. Plant Debris	
Leaves & Grass	TDS Landfill (composting program), COA Hornsby Bend Facility Compost, Curbside yard Solid Waste Services ³³
Prunings	TDS Landfill (composting program), COA Hornsby Bend Facility Compost, Curbside yard Solid Waste Services
Branches & stumps	Whittlesey Landscape Supplies, TDS Landfill (composting program), COA Hornsby Bend Facility Compost, Curbside yard Solid Waste Services

³³ City currently collects yard trimmings from containers provided by homeowners.

Product and Materials Market Inventory (continued)

Item	Programs/Facilities Accepting Materials
4. Putrescibles	
Food waste	Compost Texas Disposal Systems, Texas Organic Products composting (Accepts commercial food waste on limited basis).
Fish and meat waste	Unclear
Sewage sludge	Austin Water Utility, City of Austin's Hornsby Bend Wastewater treatment plant
5. Wood	
Untreated wood	Habitat for Humanity, Austin Wood Recycling, Texas Organic Products composting program
Treated wood	Habitat for Humanity (Limited)
6. Ceramics	
Concrete	Habitat for Humanity, Roadmix Co, Marcelo's Sand and Loam
Asphalt paving	Roadmix Co, Marcelo's Sand and Loam
7. Soils	
Gypsum board	TDS Landfill, Habitat for Humanity
Fines	(Unclear)
8. Metals	
Auto bodies	Salvage yards, Commercial metals, CMC-Austin/AMP Recycling
Aluminum cans	COA-MRF, All American Recycling, Southside Recycling, DNT Recycling, Allied Waste Services, Gardner Iron & Metal, Ecology Action, Curbside recycling. Solid Waste Services, CMC-Austin/AMP Recycling, Austin Metal and Iron, Beaman Metal Co.
Steel cans	COA-MRF, All American Recycling, Southside Recycling, DNT Recycling, Allied Waste Services, Gardner Iron & Metal, Ecology Action, Curbside recycling. Solid Waste Services, CMC-Austin/AMP Recycling, Austin Metal and Iron, Beaman Metal Co.
Other Ferrous metals	COA-MRF, Commercial Metals, All American Recycling, Southside Recycling, DNT Recycling, Allied Waste Services, Austin Metal & Iron, Ecology Action, Austin Metal and Iron, Gardner Iron and Metal
Other Non-ferrous	COA Diversion Recycling Center, COA-MRF, Commercial Metals, All American Recycling. Southside Recycling, DNT Recycling, Allied Waste Services, Austin Metal & Iron, Ecology Action, Austin Metal and Iron, Gardner Iron and Metal
9. Glass	
Clear glass	COA MRF, Ecology Action, Curbside recycling, Local recycling center, Tri-Recycling
Green glass	COA MRF, Ecology Action, Curbside recycling, Local recycling center, Tri-Recycling
Mixed glass	COA MRF, Ecology Action, Curbside recycling, Local recycling center, Tri-Recycling
Brown glass	COA MRF, Ecology Action, Curbside recycling, Local recycling center, Tri-Recycling
Window glass	Habitat for Humanity, Ecology Action
Other glass	Ecology Action

Product and Materials Market Inventory (continued)

Item	Programs/Facilities Accepting Materials
10. Polymers	
# 1 PET	COA MRF, Ecology Action, Local recycling center, BFI MRF, Cycled Plastics, Solid Waste Services
#2 HDPE	COA MRF, Ecology Action, Local recycling center, BFI MRF, Cycled Plastics, Solid Waste Services
#3 PVC	Ecology Action, Cycled Plastics
#4 LDPE	Ecology Action, Cycled Plastics
#5 PP	Ecology Action, Cycled Plastics
# 6 PS	Ecology Action, Cycled Plastics
#7 plastic	Ecology Action (limited)
Other plastics	
Asphalt Roofing	Marcelo's Sand and Loam
Tires	Sears stores (\$2 fee), Most tire stores—call first, Eco Depot
11. Textiles	
Poly fibers	Goodwill, Salvation Army, St. Vincent de Paul Store, Assistance League of Austin Thrift House
Cotton and wool	Goodwill, Salvation Army, St. Vincent de Paul Store, Assistance League of Austin Thrift House
12. Chemicals	
Used motor oil	COA/SWS-Disposal Services/, Oil change shops, Solid Waste Services' Household Hazardous Waste Facility, Eco Depot
Household Hazardous Wastes	COA COA/SWS-Disposal Services/HHW, Solid Waste Services Household Hazardous Waste Facility
Disposable Diapers	Stericycle Biohazardous Waste
Medical waste	Stericycle Biohazardous Waste, COA HHW

APPENDIX C – EXISTING RECYCLING ORDINANCE

7.0 COMMERCIAL / MULTI-FAMILY RECYCLING GUIDELINES³⁴

7.1.0 SCOPE OF RULES

The City of Austin requires that all businesses with 100 employees or more and multi-family properties with 100 units or more must provide on-site recycling services. Under this requirement, businesses and multi-family properties continue to choose their own waste haulers and recyclers and to negotiate prices for these services.

The Recycling guidelines contained within this document are intended to articulate the standards and expectations for commercial and multi-family recyclables collection as authorized in the City Code Chapter 12-3, Article VI.

7.2.0 ADOPTION AND REVISION OF RECYCLING GUIDELINES

Under authority of City Code Chapter 12-3, Article VI, the Director of the Solid Waste Services Department [*hereinafter* Director] is authorized to adopt and revise rules, procedures and forms to implement provisions of that Chapter which regulate commercial and multi-family recycling in the City of Austin.

7.3.0 GENERAL PRINCIPLES

City Code Chapter 12-3, Article VI is designed to increase access to the benefits of recycling and waste reduction for area businesses and multi-family properties within the City of Austin and thus help increase the life of local landfills, decrease disposal costs for area businesses and multi-family properties, and have a positive impact on the environment generally in terms of reduced pollution and energy consumption.

The Ordinance requires that multi-family property owners and business owners provide on-site recycling opportunities to their residents and employees in much the same way that the City of Austin has provided this opportunity to single-family homes through curbside recycling. As is the case with the City of Austin's curbside program, the participation of each individual resident or employee is voluntary.

³⁴ From: <http://www.ci.austin.tx.us/sws/downloads/rules.pdf>, page 13.

APPENDIX D - POLICY & PROGRAM OPTIONS FOR DISCUSSION

UPSTREAM PROGRAM AND POLICY OPTIONS

Goal : Require Producers to Take Responsibility for Products	
Voluntary, Education, and Incentives	<p>Engage industry, make them aware of materials and products that are problems for Austin, and establish a process for producers to resolve those problems.</p> <p>Encourage businesses and institutions to take back products and packaging sold in Austin that are toxic in their manufacture, use, or disposal, and/or are not currently recyclable in the area.³⁵</p>
New Rules and Advocacy	<p>Be a strong advocate for legislation and programs regionally, statewide and nationally to make business responsible for their packages and products.</p> <ul style="list-style-type: none"> ▪ Expand upon existing EPR Resolution (2000803-68) supporting changes to procurement policy by adopting a new EPR Resolution³⁶ to clearly establish support of EPR as City policy. ▪ Help set up TX Product Stewardship Council ▪ Work with other local governments and organizations such as the TX Municipal League, Natl. League of Cities, Product Policy Institute, and Product Stewardship Institute to promote EPR and clearly authorize local governments to adopt policies and programs. <p>Ban products or packaging from being sold in Austin that are toxic in their manufacture, use, or disposal, and/or are not currently recyclable in the area and join with other local governments in the region to do the same.</p> <p>Require businesses and institutions to take back designated products and packaging sold in Austin that are toxic in their manufacture, use, or disposal, and/or are not currently recyclable in the area and join with other local governments in the region to do the same.</p>
New City Programs	<p>Establish centers throughout the City to receive household hazardous wastes (e.g., e-waste, batteries, oil, paint, pesticides, cleaners) and join with other local governments in the region to do the same.</p> <p>Develop public- private partnership to develop industry sponsored facilities to receive household hazardous wastes and difficult to recycle materials.</p> <ul style="list-style-type: none"> ▪ Evaluate similar programs like those in Boulder, CO CHaRM Center³⁷ and BC Product Care Centers. ▪ Join with other local governments in the region to do the same.

³⁵ The City of Ottawa Ontario developed a voluntary takeback program that publicizes businesses that voluntarily accept products they sell from their customers, which engenders customer loyalty and appreciation for their corporate responsibility.

³⁶ See Appendix G based on model resolution from Product Policy Institute at:
http://www.productpolicy.org/assets/word/MODEL_Local_EPR_Resolution.doc

³⁷ See: <http://www.ecocycle.org/charm/index.cfm>

DOWNSTREAM PROGRAM & POLICY OPTIONS

Goal : Lead by example. Reduce/recycle City of Austin agency waste.	
Voluntary, Education, and Incentives	<p>Evaluate employee incentives to encourage recycling.</p> <ul style="list-style-type: none"> ▪ Department Challenges similar to the Combined Charities Event Challenges ▪ Offer recognition to the departments that recycle the most material. <p>Evaluate employee education and outreach programs to increase participation in recycling and reduction efforts.</p> <ul style="list-style-type: none"> ▪ Utilize inter-office website, emails, meetings, and magazines to communicate information ▪ Establish “green teams” in each department or office building to encourage other employees to recycle, continually evaluate reduction efforts and recycling services, and recommend improvements to the City’s departmental programs. <p>Educate employees to distinguish between recycling systems. Once composting program is in place, use colors and graphics to support the message that one color (blue) is for recyclables and another color (green) is for compostables.</p>
New Rules and Advocacy	<p>Require all public venues and special events, starting with large events, to implement a Zero Waste program.</p> <p>For City solid waste contracts of their own facilities, require that all materials be reused, recycled, or composted, and only inerts be buried in landfill</p> <p>Review current purchasing practices and develop specifications with “green” in mind. This could include requiring reduced packaging, delivery of computers with minimal packaging, purchasing office supplies with a certain amount of post-consumer recycled content, etc.</p> <p>Adopt Precautionary Principle for City purchases and Zero Waste purchasing goals.</p> <p>Require city facilities and public projects to use the mulch and compost made from the City’s composting program towards landscaping local roads, public venues, and public property.</p> <p>Require the use of other recycled materials in sub-base (e.g., recycled concrete aggregate), road mixes (e.g., crumb rubber) and surface treatments (e.g., glass traffic beads) in all public projects in Austin and surrounding areas. Include C&D derived aggregate material as part of City Public Works Master specification. Work with TxDOT engineers to develop specifications.</p> <p>Require buildings leased to house City departments and services to provide space for recycling and/or offer recycling services.</p> <p>Austin Energy stop including landfill gas as a green energy source in its “Green Choice” program. The recovery of gases should be required for environmental reasons, and not provided incentives. Any incentives given to landfills make Zero Waste less economic.</p>
New City Programs	<p>Provide single stream recycling to all City of Austin departments and office buildings and evaluate progress annually.</p> <p>Train managers and maintenance staffs of city buildings and facilities about Zero Waste policies, systems, and resources.</p> <p>Place recycling bins wherever there are trash bins in all public locations, including parks facilities.</p> <p>Once organic composting program is fully functional, include organics bins wherever food is served in public locations.</p>

DOWNSTREAM PROGRAM & POLICY OPTIONS (continued)

Goal: Reduce waste from single family homes.	
Voluntary, Education, and Incentives	<p>Evaluate rate structure for incentives. Once single stream recycling program is implemented:</p> <ul style="list-style-type: none"> ▪ Adopt closer-to-linear Pay As You Throw rates to provide greater incentive for residents to reduce wastes. <ul style="list-style-type: none"> ○ Once comprehensive organics program is implemented, that includes food scraps and food soiled paper, adopt a linear pay-as-you-throw rate structure³⁸, and ○ Develop a pilot program to evaluate how to offer lower rates for less frequent garbage collection service.
New Rules and Advocacy	<p>Adopt policy that no compostable organics should go to landfill.</p> <p>Once single stream recycling program and "all" organics programs are implemented, establish rules to keep "wet" garbage separate from "dry" materials.</p>
New City Programs	<p>Develop one or more Green Districts and/or Resource Recovery Parks in Austin³⁹ (or nearby) to accept all 12 market categories of reusables, recyclables and compostables from the public.</p> <ul style="list-style-type: none"> ▪ Provide locations for reuse, recycling and composting businesses to process materials, manufacture products and sell products to the public. ▪ Encourage similar development in CAPCOG region. ▪ Partner with nonprofit organizations, thrift shops, home stores, supermarkets and shopping malls to establish drop-off recycling centers and swap shops throughout the City to receive 5 clusters⁴⁰ of all 12 market categories of materials <p>Require reuse, recycle or composting of all bulky items collected by City:</p> <ul style="list-style-type: none"> ▪ Partner with local non-profit organizations and thrift stores to achieve most cost effectively. <p>Once single stream recycling program is performing successfully, add food scraps and food-soiled paper to residential organics collection program.</p> <ul style="list-style-type: none"> ▪ Start with pilot program to determine how best to roll-out citywide. ▪ Tour other communities that offer such services first to help design pilot. <p>Help fund development of new processing facilities for local reuse nonprofit organizations. Consider designating part of Green District processing facility for this activity.</p>

³⁸ For example: offer 32-gallon-cart option for garbage from Austin residents at 50% of the cost of a 64-gallon-cart option and provide cost alternatives for low-income large families.

³⁹ Such as City's Green District proposal, with addition of reuse and composting activities, or at least collection of all 12 market categories. It would also be good to include a major baler at the Green District to help in marketing the single-stream materials to be processed there.

⁴⁰ Set up at least one center in each "waste shed" of City to conveniently take from the public Reusables, Recyclables, Compostables, Concrete and Demolition Materials, and recyclable Household Hazardous Wastes (e.g., batteries, oil and paint). In California, the state requires supermarkets to establish convenient recycling centers in their parking lots (or within 2 miles of the store) to receive designated recyclable materials.

DOWNSTREAM PROGRAM & POLICY OPTIONS (continued)

Goal: Reduce waste from commercial, multi-family, and institutional entities.	
Voluntary, Education, and Incentives	<p>Develop programs on on-going basis to educate residents, businesses and visitors about the new rules and changes over time.</p> <ul style="list-style-type: none"> ▪ Reinvigorate the Greater Austin Waste Reduction Association to work with City staff on outreach and education with businesses. ▪ Develop Master Recycler education of local residents who can act as advocates in the community. ▪ Train university students to help on outreach to local businesses to implement City's Recycling Ordinance like Fresno.⁴¹ ▪ Use MySpace, YouTube, texting and celebrities to talk about Zero Waste. Develop major community based social marketing campaign to support Zero Waste. ▪ Explore other ways to encourage and support on-site composting at homes, schools and colleges, businesses and institutions with sufficient space. <p>Ask major businesses in Austin area to use Resource Management techniques⁴² to contract for solid waste services that require that all materials be reused, recycled or composted, and only inerts buried in landfill to reduce business' liabilities.</p> <p>Ask Businesses to adopt and implement Zero Waste goals.</p> <p>Help promote reuse businesses throughout City.</p> <ul style="list-style-type: none"> ▪ Develop and continually update a Reuse Guide to be distributed to all thrift stores, available on the City's website, and utilize other innovative approaches. ▪ Designate "Reuse Zones" to encourage expansion of reuse stores in those areas (e.g., South Congress and Burnet Streets are naturally doing this).
New Rules and Advocacy	<p>Update, educate, expand and effectively implement Commercial and Multi-Family Recycling Ordinance⁴³ to require ALL multi-family dwellings, businesses and institutions to recycle and compost.</p> <p>Develop a regulatory system for commercial waste hauling that specifies types of recycling services, reporting requirements and fee payments that vary with the amount of waste diverted from landfill and incineration.⁴⁴ Set hauler/landfill fees to provide more economic incentives for recycling, and to generate funds for new Zero Waste programs.</p> <p>Agree upon and require all permitted waste haulers and recyclers to achieve waste diversion targets. Require that all permitted haulers provide equal amount of container service (size and frequency of collection) for recycling as provided for garbage service.</p> <p>Once food scrap composting program services are available, develop pilot programs by the City of Austin and/or through public/private partnerships to collect and process food scraps and food-soiled paper from businesses and institutions.</p> <p>Help market using urban organics to farmers to restore the health of soils and reduce use of fertilizers, pesticides and irrigation water. Work with local and state permitting agencies to make it easier for farmers to use such resources.</p>

⁴¹ City of Fresno, CA hired 5 students to contact every business in the City to help them implement a similar mandatory Recycling Ordinance. See article in April 2008 *Resource Recycling* journal.

⁴² See <http://www.epa.gov/epaoswer/non-hw/reduce/wstewise/wrr/rm.htm>

⁴³ City Code Section 12-3-171 requires on-site recycling for 4 of designated recyclables for apartments and 2 of designated recyclables for businesses.

⁴⁴ For example, Monrovia, California, reduces its nonexclusive commercial service agreement fees directly proportional to the amount of wastes diverted. Franchise fees are 16 percent for haulers diverting 24 percent or less, 12 percent if they divert 25 to 49 percent, and 8 percent if they divert 50 percent or more. For more info on similar incentives, see:

<http://www.ciwmb.ca.gov/LGLibrary/Innovations/Incentives/>

DOWNSTREAM PROGRAM & POLICY OPTIONS (continued)

Goal: Reduce waste from commercial, multi-family, and institutional entities.	
New City Programs	<p>Develop and fund programs that can evaluate and approve waste management plans and monitor commercial and multi-family diversion activities to confirm that they are reaching agreed upon goals.</p> <p>Develop and fund recognition programs to promote businesses that achieve diversion goals.</p> <p>Develop drop-off recycling centers and swap shops throughout the City to receive 5 clusters⁴⁵ of all 12 market categories of materials, partnering with nonprofit organizations, thrift shops, home stores, supermarkets and shopping malls.</p> <p>Help develop new processing facilities for local reuse nonprofit organizations (e.g., by designating part of processing facility in Green District to be used partly for this activity).</p>

Goal: Reduce waste from development projects.	
Voluntary, Education, and Incentives	For projects that appropriately document that they reused, recycled or composted a certain percentage of their construction/demolition materials, return a portion of their fees/deposits based on the percentage of diversion.
New Rules and Advocacy	<p>Require all contractors and developers to certify to the City that they reuse, recycle or compost at least 50% of materials from C&D projects and to maintain weight slips as an audit trail to document those activities</p> <p>Require waste management plans from businesses and service providers, and deposits for all construction/demolition projects.</p> <p>Work with Austin Energy Green Building Program to revise recycling goals to be based on % diverted from facilities certified by Austin Energy, another City department, or CapCOG.</p> <p>Work with Austin Energy Green Building Program to revise its reuse goals to value the recovered products by the price for which they are sold, or some multiple of their weight, to reflect the higher value of reuse.</p>
New City Programs	<p>Develop, fund, and staff programs that approve waste management plans and monitor data from construction projects to verify that debris has been recycled or composted.</p> <p>Develop and fund programs that recognize the success of development projects that consistently achieve agreed upon diversion goals.</p>

⁴⁵ Set up at least one center in each "waste shed" of City to conveniently take from the public Reusables, Recyclables, Compostables, Construction & Demolition Materials, and recyclable Household Hazardous Wastes (e.g., batteries, oil and paint). In California, the state requires supermarkets to establish convenient recycling centers in their parking lots (or within 2 miles of the store) to receive designated recyclable materials.

DOWNSTREAM PROGRAM & POLICY OPTIONS (continued)

Goal: Develop and invest in Zero Waste infrastructure	
Voluntary, Education, and Incentives	<p>Include Zero Waste infrastructure needs, such as Resource Recovery Parks and Green Districts, as part of local climate action plans.</p> <p>Support continuation and expansion of local, regional and state landfill fees, hauling fees, and bond issues to fund low-interest loans and/or grants, contracts and/or staffing (comparable to other large cities) to local governments, private businesses⁴⁶, and nonprofit organizations to develop needed programs and infrastructure.</p>
New Rules and Advocacy	<p>Modify Zoning Code to facilitate the development and expansion of Zero Waste infrastructure in appropriate zones. This will need to be done very carefully and require high standards for design, signage, landscaping and operations to be compatible with neighborhoods. Consider Berkeley, CA Recycling Zone as a model of land use overlay</p>
New City Programs	<p>Form partnerships with the private sector and nonprofit organizations for Zero Waste infrastructure development such as composting programs, Resource Recovery parks, etc.</p> <p>Perform a complete evaluation of current infrastructure and identify infrastructure needed to implement Zero Waste strategies</p> <p>Work with job training programs to support reuse, recycling and composting programs.</p>

Goal: Enlist region to support Austin Zero Waste efforts	
Voluntary, Education, and Incentives	<p>Work with school districts to integrate Zero Waste into curriculum and implement Zero Waste systems for all schools and administrative offices.</p> <p>Ask regional agencies and TXDOT regional offices to include in their contractor specifications the use of mulch and compost made from urban organics to landscape freeways, and the use of other recycled materials in sub-base (e.g., C&D debris), road mixes (e.g., crumb rubber) and surface treatments (e.g., glass traffic beads).⁴⁷</p> <p>Ask CapCOG and all counties that currently use landfills in Travis and Williamson Counties to adopt Zero Waste as a goal and to work to implement that goal.</p> <p>Investigate alternatives for regional and state cooperation to support and implement the above policies in jurisdictions outside the City of Austin and support needed State legislative initiatives.</p>
New Rules and Advocacy	<p>Require landfill operators to confirm with drivers the source of wastes delivered, and to report that information to TCEQ and/or CAPCOG so that better planning can be done in future.</p> <p>Ask State to require all landfills in area to develop a Resource Recovery Park to accept all 12 market categories of reusables, recyclables and compostables from the public.</p> <p>For NE Travis County landfills, require the development of a single Resource Recovery Park at their landfills or nearby. Fund initiatives with landfill surcharges.</p>
New City Programs	

⁴⁶ Particularly include as eligible costs the startup of new takeback programs by industry sectors that agree to levy an industry-wide fee to keep such programs going after grant is over.

⁴⁷ See: http://www.txdot.gov/services/general_services/recycling/performance.htm

GREEN BUSINESS, GREEN BUILDING, AND GREEN JOBS

Goal : Retain and Expand Green Businesses and Green Collar Jobs	
Voluntary, Education, and Incentives	<p>Provide preferences in Austin procurement, funding and permitting for certified Green Businesses in Austin.</p> <p>Encourage businesses to purchase Zero Waste products and services: return to vendor any wasteful packaging; reduce packaging and buy in larger units; use reusable shipping containers; purchase reused, recycled and compost products; buy remanufactured equipment; lease, rent and share equipment; buy durables, using life-cycle cost analyses; and buy less toxic products.</p> <p>Ask businesses to adopt Zero Waste goals and plans that follow Zero Waste Business Principles.⁴⁸</p> <p>Expand “go to head of line” for permits and financing help for Zero Waste businesses (not just for Affordable Housing projects as currently set up).</p> <p>Encourage Austin Community College to offer Management/Development of Green Business, Green collar” job training and certification courses, Green product/process R&D, Green continuing education courses for the general public, on-campus “Green centers” to support the curriculum and provide recycling and other services to nearby communities, like the partnership with the high tech industry and Chamber of Commerce in the 1990s.</p>
New Rules and Advocacy	Adopt Precautionary Principle for all City of Austin purchases
New City Programs	<p>Require City to purchase Zero Waste products and services, including contract services:</p> <ul style="list-style-type: none"> ▪ Return to vendor any wasteful packaging; ▪ Reduce packaging and buy in larger units; ▪ Use reusable shipping containers; ▪ Purchase reused, recycled and compost products; ▪ Buy remanufactured equipment; ▪ Lease, rent and share equipment; ▪ Buy durables, using life-cycle cost analyses; and ▪ Buy less toxic products. <p>Support research and development into new products and business opportunities from discarded materials at Green District.</p> <p>Support “think pads” at proposed Green District to stay on the cutting edge of Zero Waste practices.</p> <p>Provide one-time start-up grants and/or loans for needed Zero Waste infrastructure out of funding recommended in Zero Waste Plan (e.g., landfill surcharge or fees on commercial hauling).</p> <p>Set aside portion of Workforce Development funds for green job training and wages.</p>

⁴⁸ <http://www.grn.org/zerowaste/business/>

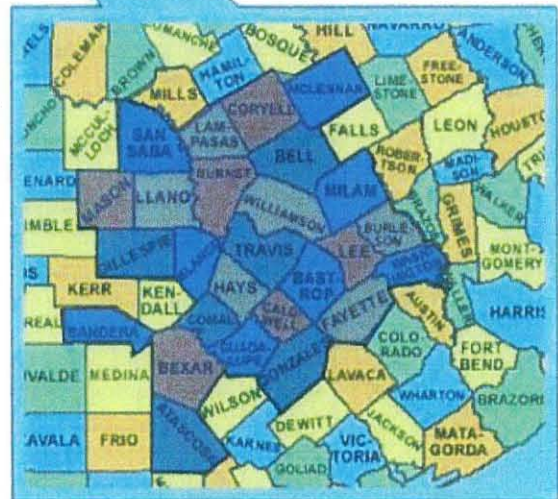
GREEN BUSINESSES, GREEN BUILDINGS, AND GREEN JOBS (continued)

Goal : Encourage Green Building Construction Standards	
Voluntary, Education, and Incentives	<p>Encourage residents and businesses to restore functional buildings, rather than demolish them.</p> <p>Encourage businesses to include Green Buildings in their specifications for rental spaces. Help promote residential developments that are certified as green buildings.</p> <p>Levy mitigation fees on high impact facilities to mitigate impacts of operation and to compensate those most impacted by needed facilities.</p> <p>Encourage on-site crushing of recycled materials in Green Building projects with best available control technology especially over sensitive karst limestone geology.</p> <p>Expand "go to head of line" for permits and financing help for Zero Waste businesses (not just for Affordable Housing projects as currently set up).</p>
New Rules and Advocacy	<p>Expand Austin's use of required Green Building standards for all major projects in the City, not just in special development areas.</p> <p>Get check-off box on permit renewal requirements for Green Building and Zero Waste projects.</p> <p>Require advertising of upcoming demolition projects while permits are being finalized, so that maximum deconstruction can be arranged.</p> <p>Require general contractor and subs training on C&D reuse and recycling requirements as condition of permits.</p> <p>Work with Austin Energy Green Building Program to:</p> <ul style="list-style-type: none"> ▪ Base success on reuse of highest and best use of products in buildings and decorative architectural features and by value of materials recovered (not by weight); ▪ Evaluate adding another "innovative point" to realize higher lifecycle benefits by recovering higher value of reused products. ▪ Evaluate adding Zero Waste as "bonus point." <p>Work with Austin Energy Green Building Program to base Green Building "status" on recycling goals achieved through % diverted from facilities, not by weights from each project.</p> <p>Require in all new construction that adequate space is provided for recycling, composting and trash containers, comparable to MRP1 in LEED – and add provision for organics/compostables.</p> <p>Once infrastructure and markets are established for C&D materials, prohibit landfilling C&D debris.</p>
New City Programs	<p>Evaluate how Solid Waste Services staff, AE staff, AWU staff, and WPDRD permitting staff can work together to establish and sustain a certification program to certify Green Buildings that meet BOTH green building requirements and Zero Waste goals.</p>

APPENDIX E – MAP OF CONTRIBUTING COUNTIES



County	Distance From Austin	County	Distance From Austin
Atascosa	112	Gonzales	68
Bandera	126	Guadalupe	49
Bastrop	29	Hays	30
Bell	59	Lampasas	85
Bexar	76	Lee	58
Blanco	45	Llano	75
Burleson	85	Mason	111
Burnet	50	McLennan	104
Caldwell	34	Milam	75
Cornall	66	San Saba	110
Coryell	89	Travis	6
Fayette	59	Washington	93
Gillespie	85	Williamson	35



APPENDIX F – REGIONAL LETTERS OF SUPPORT

Travis County Commissioners Court

SAMUEL T. BISCOE
County Judge

RON DAVIS
Commissioner, Pct. 1

SARAH ECKHARDT
Commissioner, Pct. 2

GERALD DAUGHERTY
Commissioner, Pct. 3



MARGARET J. GÓMEZ
Commissioner, Pct. 4

Travis County Administration Building, 314 W. 11th, Commissioners Courtroom, 1st Floor, Austin, Tx 78701

May 13, 2008

The Hon. Will Wynn, Mayor
City of Austin
P.O. Box 1088
Austin, TX 78767

Dear Mayor Wynn:

The Travis County Commissioners Court would like to support and contribute to the City of Austin goal of achieving Zero-Waste. We would welcome the opportunity to work with the City of Austin, the Capital Area Council of Governments and local governments in the region on policies and programs to reduce the waste going to landfills by:

- Expanding tire recycling programs
- Expanding composting and organic waste diversion programs
- Expanding Green Building initiatives
- Recycling and reuse of construction/demolition debris
- Developing Green Districts and Resource Recovery Parks
- Supporting programs and policies for Extended Producer Responsibility


Thank you for your leadership in this vital component of your Climate Protection Initiative. We look forward to working with you and your Zero Waste team to pioneer these policies and programs in the region.


Sincerely,


Samuel T. Biscoe
County Judge


Ron Davis
Commissioner, Precinct One


Sarah Eckhardt
Commissioner, Precinct Two


Gerald Daugherty
Commissioner, Precinct Three


Margaret J. Gomez
Commissioner, Precinct Four



**Capital Area
Council of
Governments**

P.O. Box 17848
Austin, TX 78760-7848

6800 Burleson Road
Building 310, Ste. 165
Austin TX 78744

PH. 512.916.6000
FAX. 512.916.6001

www.capcog.org

Bastrop

Blanco

Burnet

Caldwell

Fayette

Hays

Lee

Uano

Travis

Williamson

Counties

May 14, 2008

Mayor Will Wynn
P.O. Box 1088
Austin, Texas 78767

Dear Mayor Wynn:

The Solid Waste Advisory Committee (SWAC) of the Capital Area Council of Governments (CAPCOG) would like to lend our support to the City of Austin's Zero Waste initiatives, which are consistent with the past and continuing efforts of CAPCOG and the SWAC. These initiatives also support the waste reduction goals of the Regional Solid Waste Management Plan, and the recommendations of the Market Analysis of Recoverable Materials (2007) prepared for the CAPCOG region by R.W. Beck.

We would welcome the opportunity to work on policies and programs together throughout the region, including:

- expanded tire recycling programs
- expanded composting and organic waste diversion programs
- expanded Green Building initiatives throughout the region
- expanded recycling and reuse of construction and demolition debris
- development of Green Districts and Resource Recovery Parks, and
- support for Extended Producer Responsibility and manufacturer take-back policies and programs.

Thank you for your leadership in this vital component of your Climate Protection Initiative. We look forward to working with you and your Zero Waste team to pioneer these policies and programs in the region.

Sincerely,

The Honorable Maurice Pitts, Jr, SWAC Chair

cc: Melissa Martinez, City of Austin Solid Waste Services

APPENDIX G - MODEL EPR RESOLUTION

MODEL RESOLUTION NO. _____ RESOLUTION OF THE CITY OF AUSTIN SUPPORTING EXTENDED PRODUCER RESPONSIBILITY

WHEREAS, approximately 1,000,000 tons of discarded materials and products are currently sent to disposal from our community which are valued at over \$40 million per year; and

WHEREAS, federal and state rules ban landfill disposal of certain products that are deemed hazardous, including [confirm ones that apply: household batteries, fluorescent bulbs and tubes, thermostats and other items that contain mercury, as well as electronic devices such as video cassette recorders, microwave ovens, cellular phones, cordless phones, printers, and radios]; and

WHEREAS, it is anticipated that the list of waste products determined to be hazardous and therefore banned from landfills will continue to grow; and

WHEREAS, state policies currently make local governments responsible for achieving waste diversion goals; and

WHEREAS, household hazardous waste management costs are currently paid by taxpayers and rate payers of the City of Austin and are expected to increase substantially in the short term unless policy changes are made; and

WHEREAS, local governments have no input on the design of the products, make no profit from the products, and do not have the resources to adequately address the rising volume of discarded products; and

WHEREAS, costs paid by local governments to manage products are in effect subsidies to the producers of hazardous products and products designed for disposal; and

WHEREAS, the City Council of the City of Austin supports statewide efforts to hold producers responsible for hazardous products and other product and packaging waste management costs; and

WHEREAS, there are significant environmental and human health impacts associated with improper management of hazardous products; and

WHEREAS, Extended Producer Responsibility (EPR) is a policy approach in which producers assume responsibility for management of hazardous waste products and which has been shown to be effective; and

WHEREAS, when producers are responsible for ensuring their products are reused or recycled responsibly, and when health and environmental costs are included in the product price, there is an incentive to design products that are more durable, easier to repair and recycle, and less toxic; and

WHEREAS, EPR framework legislation establishes transparent and fair principles and procedures for applying EPR to categories of products for which improved design and management infrastructure is in the public interest; and

WHEREAS, the California Product Stewardship Council (CPSC) is an organization of California local governments working to speak with one voice in promoting transparent and fair EPR systems in California; and

WHEREAS, in (Date), the City of Austin adopted a municipal Zero Waste Plan, and this plan describes how zero waste cannot be achieved unless product manufacturers reduce the toxics in their products and design them to be reusable and recyclable; and

WHEREAS, the City of Austin wishes to incorporate EPR policies into the City's and County's product procurement practices to reduce costs and protect the environment;

NOW, THEREFORE BE IT RESOLVED BY THE COUNCIL OF THE CITY OF AUSTIN that the Council of the City of Austin urges the Texas Commission on Environmental Quality (TCEQ) to support legislation, policies and programs on Extended Producer Responsibility; and

BE IT FURTHER RESOLVED, that the Council of the City of Austin encourages the formation of a Texas Product Stewardship Council as an organization of Texas local governments working to speak with one voice in promoting transparent and fair EPR systems in Texas to shift waste management costs from local government to the producers of the product, and which will give producers the incentive to redesign products to make them less toxic and easier to reuse and recycle; and

BE IT FURTHER RESOLVED, that the Director of Solid Waste Services Department be authorized to send letters to Texas local government organizations, state agencies and the State legislature and to use other advocacy methods to urge support for EPR legislation; and

BE IT FURTHER RESOLVED, that the (Jurisdiction name) encourages all manufacturers to share in the responsibility for eliminating waste through minimizing excess packaging, designing products for durability, reusability and the ability to be recycled; using recycled materials in the manufacture of new products; and providing financial support for collection, processing, recycling, or disposal of used materials; and

BE IT FURTHER RESOLVED, that the City of Austin will lead by example to develop producer responsibility policies for its own purchases, such as leasing products rather than purchasing them and requiring producers to offer less toxic alternatives and to take responsibility for collecting and recycling their products and the end of their useful life.

PASSED AND ADOPTED by the Council of the City of Austin, State of Texas
on _____ by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Signed: _____ Date: (mo/day/year)
Will Wynn, Mayor

ATTEST: _____
(Name), Clerk
City of Austin

APPENDIX H - HIGHEST AND BEST USE HIERARCHY

Zero Waste has been defined by the [Zero Waste International Alliance](#) as a philosophy and visionary goal in which manufacturing and supply chains emulate natural cycles, where all outputs are usable inputs for other value-added processes. It means designing products and managing materials and systems for maximum resource conservation, highest, most efficient use, and minimum negative environmental impact. It means eliminating harmful discharges to land, water and air, by preventing rather than managing waste and pollution.

Highest/Best Use



Redesign Manufacturing & Supply Chain

- Mandate Extended Producer Responsibility (EPR)
- Produce durable, reusable, recyclable, and recycled-content products
- Use environmentally sustainable feedstocks & materials
- Design for repair, reconditioning, disassembly, deconstruction and recycling
- Make brand owners/first importers responsible to take back products & packaging

Reduce/Refuse/Return

- Reduce Toxicity
 - Reduce toxic materials in products
 - Replace toxic materials in products with less toxic or non-toxic alternatives
- Reduce Consumption
 - Purchase and use less
 - Apply Environmentally Preferable Purchasing (EPP) standards to purchasing
- Reduce Packaging
 - Purchase products with less packaging
 - Incentive durable, reusable packaging

Reuse/Preserve Form & Function

- Repair and recondition products
- Deconstruct and salvage buildings and building products
- Support thrift stores and charity collection

Recycle/Compost/Digestion

- Recover & return materials to economic mainstream for remanufacture to like-value products
- Recover & return materials to economic mainstream for composting to value-added soil amendment products
- Ambient temperature (<200 degrees) processing of organic materials for recovery of fuels and energy, with composting of residue

Down Cycle

- Recover & return materials to economic mainstream for remanufacture to non- or marginally-recyclable products, such as office paper to tissue paper, or soda bottles to toys or clothing

Bury/Incinerate/Waste-Based Energy

- Bioreactor landfilling, when design incorporates sufficient safety & environmental protections
- "Beneficial" landfill use, such as alternative daily cover (ADC) or landfill construction
- Traditional landfilling
- High-temperature, energy-intensive processing to recover fraction of embodied energy, from non-source-separated, mixed resources, including but not limited to: mass burn, co-firing, fluidized bed, gasification, plasma arc, pyrolysis

Lowest/Worst Use

APPENDIX I - ZERO WASTE RESOURCES

Austin Zero Waste:

www.austinrecycles.com

Jessica King

512-974-2728

jessica.king@ci.austin.tx.us

Rebecca Hays

512-974-7720

rebecca.hays@ci.austin.tx.us

GrassRoots Recycling Network:

www.grrn.org

Zero Waste International Alliance:

www.zwia.org

Earth Resource Foundation:

www.earthresource.org/zerowaste.html

Gary Liss & Associates:

www.garyliss.com/id18.html

MEMORANDUM

TO: Dave Anderson, Chair and Members of the Environmental Board

FROM: Phil Moncada, Environmental Board member

DATE: October 31, 2008

SUBJECT: Update on the Solid Waste Advisory Commission meeting regarding the COA Zero Waste Plan.

This is to advise you that I attended the Solid Waste Advisory Commission meeting regarding the COA's ZERO WASTE Plan, and Material Recovery Facility (MRF) as a representative for the Environmental Board.

Chair Gerry Acuna was very disappointed with a lack of communication regarding a project that was proposed to cost 17 million and now has a price tag of 72 million. I believe it is on hold for now.

In addition, since the proposed site was at the FM 812 landfill I could not understand why Solid waste had not briefed the EB since we knew we had a cell failure out there that place household garbage in Onion Creek, COA also has an ordinance that prohibits buildings on landfills.

In addition, they need to apply for an SER since no water or wastewater service is currently available. Communication breakdown seems to be the issue and biggest concern for SWAC. I too have the same concerns.

Respectfully,

Phil Moncada