

Appendix E

Dairy Compost Use and Production Survey Results

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Problem Definition/Background

The Bosque River and Leon River watersheds contain approximately 165 dairies with 100,000 cows. Studies by the Texas Commission on Environmental Quality (TCEQ), Texas State Soil and Water Conservation Board (TSSWCB), Brazos River Authority (BRA), Texas Institute for Applied Environmental Research (TIAER), and others demonstrated that excessive animal waste has contributed to water quality problems in the basin, specifically, segments 1226 and 1255. TCEQ has mandated major reductions in manure loadings within the Bosque River watershed.

As early as 1998, interest and support developed for the production of composted manure as a means for enhancing transport of animal waste out of the watershed. Incentives were provided to encourage manure transport to composting facilities, which have produced significant quantities of product. The goal of this project is to use the Texas Cooperative Extension (TCE) network and the technical capabilities of the Texas Agricultural Experiment Station (TAES) and a Compost Marketing Firm (CMF), in collaboration with the Texas State Soil and Water Conservation Board (TSSWCB) and Soil and Water Conservation Districts (SWCDs) to:

- Expand government and public markets for composted manure from the Bosque and Leon River watersheds by:
 - Increasing awareness of the benefits of compost, and
 - Publicizing the TCEQ Composted Manure Incentive Project to eligible state agencies and political subdivisions.
- Develop a Technical Assistance Program that will promote:
 - Cost-effective, beneficial and environmentally safe uses of dairy compost.
 - Production of quality compost meeting desired specifications by participating compost operations.
- And to, promote development of a sustainable regional market for composted dairy manure by identifying and linking the needs of governmental organizations with a competitive composting industry starting with the region surrounding Stephenville, Texas.

Overall, TWRI will work with the project cooperators to promote and expand the use of compost in sufficient quantities to make use of at least 50,000 cubic yards of composted manure. In an effort to meet the three major project goals, TCE will conduct a survey of the public entities within the Leon River and Bosque River watershed. The purpose of the survey was to identify and quantify the potential market for dairy compost within the watershed. In the process of the survey, TCE also was able to determine the current use and production of dairy compost by public entities. Furthermore, to more efficiently plan their efforts, TCE also conducted a supplemental survey of selected entities to identify key issues hindering dairy compost use in the area, such as the need for more compost research data, the lack of public information and the amount or availability of dairy compost within the area.

Survey Methodology

Two separate surveys were developed to be used to assess the potential market for dairy compost within the area. The first survey, Questionnaire for Compost Users, is included in Exhibit 1 and was the primary survey used consistently throughout the entire process. In the event that a public entity did not currently use compost or had discontinued use in the past, then a second

survey, Supplemental Compost User Survey, which is included in Exhibit 2, was to be used. With this questionnaire, TCE attempted to assess and understand the rationale behind the lack of compost use within the watershed. However, due to the length and meticulous nature of the supplemental survey and the lack of cooperation by the entities, less specific information regarding the lack of compost use was collected and assessed with the supplemental survey. Regardless, TCE planned to use the information gathered from both surveys to determine what steps need to be taken to succeed in project efforts.

Initially, TCE identified the cities listed in Table 1 to be surveyed. In making this selection, TCE organized all of the cities within the watershed by population and divided the entities into four major groups as follows: (1) 1,000 to 5,000 people, (2) 5,000 to 10,000 people, (3) 10,000 to 20,000 people and (4) greater than 20,000 people. A minimum population size of 1,000 was set as it was determined that no significant market value exists in these areas. Approximately five cities were randomly selected from each population group to obtain a more representative sample of the cities within the watershed and to ensure statistical validity of the survey.

TCE submitted the original list (Table 1) to TCEQ in November 2002. TCEQ revised the list and added 23 additional cities to more thoroughly assess the potential markets within the watershed. Of the 102 public entities identified within watershed, TCEQ ultimately identified 40 entities total to be surveyed. The number of identified entities and the number of entities selected to be surveyed can be found in Table 2. To satisfy the primary purpose of the survey, which was to identify and quantify potential markets, priority was given to the cities with a population greater than 20,000. Therefore, a larger sample was taken out of this group to be surveyed.

Table 1. Population distribution and sample size of entities within the Leon River and Bosque River watershed and the entities initially selected by TCE to be surveyed.

Population Size	Identified Entities	Selected Entities	Names of Selected Entities
1,000 – 5,000	51	5	Meridian, Goldthwaite, Glen Rose, Hamilton, Comanche
5,000 – 10,000	17	3	Granbury, Marlin, Hillsboro
10,000 – 20,000	12	5	Belton, Stephenville, Gatesville, Brownwood, Weatherford
Greater than 20,000	22	4	Cleburne, Georgetown, Waco, Fort Worth

Table 2. Population distribution and sample size of each entity surveyed within Leon River and Bosque River watershed.

Population Size	Identified Entities	Selected Entities
1,000 – 5,000	51	9
5,000 – 10,000	17	5
10,000 – 20,000	12	6
Greater than 20,000	22	20

Survey Results

Using this selection technique, TCEQ identified 40% of the potential market within the watershed to be surveyed. However, when considering the large markets (population greater than 20,000), 95% were identified and contacted. Through telephone interviews, TCE contacted 85% of the identified entities. The remaining 15% were not contacted due to incorrect phone numbers or contact information. A list of contact names and numbers can be found in Exhibit 3. Cooperation by the entities varied resulting in less than 100% responses from the contacted entities. Overall, TCE received responses from 70% of the contacted entities. Table 3 lists the selected entities by population and the amount of contacted entities and positive responses.

TCE summarized the status of compost use or lack thereof in Table 4 for each entity. Of the 24 entities who responded to the survey, 15 use compost or at least some type of mulch product. Seven of the entities do not use any type of compost in their management systems. Hico was the only entity to report rarely using compost and Woodway was alone in reporting that they had previously used compost, but had since discontinued use.

Of the positive responses received by TCE, 63% use some type of organic material in their management practices. Consequently, 38% do not currently use any organic materials in their land and plant management programs. Of the 63% that do use organics, approximately half produce their own product. However, a majority of the entities that produce their own product produce a mulch product rather than a compost product. Generally, entities that produce their own products do so to conserve landfill space and money. Furthermore, the input costs for this production is low as entities receive materials from their citizens in the form of green waste from lawn and yard trimmings. Therefore, it is more economical for entities to produce a mulch type product rather than a compost type product. Some interest does exist for entities to start compost production given they can identify an available nitrogen source. This necessity does provide an alternative market for dairy manure within the watershed in that entities wishing to begin composting may be able to utilize dairy manure as a nitrogen source to add to their mulch products. However, this alternative does not provide for the use of dairy compost, the primary purpose of this project, and therefore should be considered as a secondary goal.

For the remaining half who use compost, but do not produce their own, TCE discovered that these entities purchase or receive their organic material from a variety of sources. For instance, Weatherford purchases material from Clear Fork Materials in Aledo, TX while the city of Georgetown receives free product from Texas Disposal Systems. The towns of Temple and

Table 3. Entities sorted by population selected within the watershed to be surveyed and amount of contacts and responses from each entity.

City	County	Population	Contacted	Responded
Hico	Hamilton	1341	✓	✓
Meridian	Bosque	1491		
Goldthwaite	Mills	1802	✓	✓
Glen Rose	Somervell	2122	✓	✓
De Leon	Comanche	2433	✓	
Hamilton	Hamilton	2977		
Clifton	Bosque	3542	✓	✓
Dublin	Erath	3754	✓	
Comanche	Comanche	4482	✓	✓
Granbury	Hood	5718		
Marlin	Falls	6628	✓	✓
Hillsboro	Hill	8232		
Woodway	McLennan	8733	✓	✓
Bellmead	McLennan	9214	✓	✓
Hewitt	McLennan	11085	✓	✓
Belton	Bell	14623	✓	✓
Stephenville	Erath	14921		
Gatesville	Coryell	15591	✓	✓
Brownwood	Brown	18813	✓	✓
Weatherford	Parker	19000	✓	✓
Benbrook	Tarrant	20208		
Burleson	Johnson	20976	✓	✓
Southlake	Tarrant	21085	✓	✓
Watauga	Tarrant	21908	✓	✓
Cleburne	Johnson	26005	✓	✓
Keller	Tarrant	27345	✓	
Mansfield	Tarrant	28031	✓	
Georgetown	Williamson	28339	✓	✓
Copperas Cove	Coryell	29455	✓	
Hurst	Tarrant	36273	✓	
Haltom City	Tarrant	39018	✓	✓
Grapevine	Tarrant	42059	✓	
Eules	Tarrant	46005	✓	
Bedford	Tarrant	47152	✓	✓
Temple	Bell	54514	✓	✓
North Richland Hills	Tarrant	55635	✓	
Killeen	Bell	86911	✓	
Waco	McLennan	113726	✓	✓
Arlington	Tarrant	332969	✓	✓
Fort Worth	Tarrant	534694	✓	✓

Table 4. The current status of compost use or lack thereof from the entities surveyed.

Compost use status	Number of Entities	List of Entities
Has never used compost	7	Clifton, Bellmead, Bedford, Watauga, Goldthwaite, Marlin and Gatesville
Has used compost rarely	1	Hico
Currently uses compost or some other type mulch product	15	Arlington Southlake, Haltom City, Hewitt, Burleson, Weatherford, Georgetown, Waco, Fort Worth, Comanche, Glen Rose, Cleburne, Brownwood, Belton and Temple
Previously used compost, but has since discontinued use	1	Woodway

Belton both contract with Brazos River Authority (BRA). Temple officials would not discuss the status of the contract with TCE, but Belton and BRA revealed that BRA provides Belton with 25% of the product and Temple receives 75% of the product. Hewitt recently entered a contract with TCEQ to utilize dairy compost, Arlington and Waco both purchase dairy compost from the watershed and Southlake does contract to purchase compost but would not disclose the type of compost purchased or their source.

In regard to the amount of compost purchased or used, TCE found that entities were not able to provide such information. Typically, personnel who were willing to participate in the survey did not have access to the information or the entity did not keep a record of the amount used. Moreover, the purpose for the use or production of compost varied in each city. A majority of the entities who produce compost or a mulch product gave or sold the product to its citizens or another entity (i.e. Highway Department). Waco, Arlington and Fort Worth were the only entities who stated they used a compost or mulch product in their land management needs such as city parks, football fields and local schools. This information is tabulated in Exhibit 4.

The 32% who do not currently use or produce compost provided several reasons behind their disinterest. The majority lacked the funds, personnel and public demand to warrant the production or the purchase of compost. Clifton and Woodway responded they have conducted city surveys and found little interest in compost from their citizens. Hico, Bellmead, Bedford Goldthwaite, Marlin and Gatesville all expressed that lack of funds and personnel are the primary reasons they do not utilize compost in their management systems. Furthermore, given the added funds, all three entities admitted that compost was not their most current priority. The city of Watauga also reported they lack the personnel, yet also do not consider the product

readily available to them. Consequently, Watauga has previously used bagged fertilizer as a soil amendment in their management practices.

As stated earlier, the supplemental survey was not suitable for a telephone survey and therefore, such data was gathered by inquiring general information from the entities concerning their lack of compost use. To more efficiently assess the compost market, or lack thereof, TCE recorded comments and tabulated them in Exhibit 4. More specifically, Watauga and Burleson had contradictory views on some of the issues addressed by the supplemental survey. Burleson stated that the availability of vendors providing compost and their hauling services was extremely important to their potential compost use. Furthermore, they also rated the need for information regarding compost use, compost specifications and compost characteristics extremely important. Watauga, however, rated these issues as not important or not applicable to their needs. It is important to note here that Watauga is the city who does not consider dairy compost readily available to them and have previously used bagged fertilizer, which suggests their responses to the supplemental survey are the result of lack of information.

Given the above information for both compost users and non-users, TCE has identified some potential markets in the entities within the watershed. Watauga, for example, might be willing to try dairy compost if they are provided with accessible information regarding compost use. Currently, they use bagged fertilizer and through project efforts, dairy compost use may prove to be more economical and efficient for Watauga. Clifton's and Woodway's citizens do not have interest in a compost product, but the possibility still exists that both of these entities could implement dairy compost use in their own management practices. Georgetown, although they currently have access to a free organic source, stated they would be willing to try dairy compost given the quality and market. Burleson is also interested depending on the price and quality of product. Although Weatherford currently purchases from Clear Fork Materials, they also stated they would be interested if dairy compost use is more economical. Finally, Glen Rose currently produces a mulch product and does have interest in producing a compost product. However, their compost production is a future venture and the city needs a compost source for the time being. Furthermore, Glen Rose and Brownwood both want to start compost production using their existing mulch product, but both entities lack a nitrogen source and as stated earlier, here lies a potential market for uncomposted dairy manure from the watershed.

All raw data and results are included in Exhibit 4.

Conclusion

While interest does not exist throughout the entire watershed, TCE determined that some entities would be willing to purchase dairy compost on a trial basis given the proper quality and economics. The compost quality issue is being handled by other aspects of the project. Dairy compost production and marketing consultants are assisting compost producers within the watershed to ensure their production techniques are consistent with those necessary to produce a quality product. The purchase of dairy compost has the potential to be economical when public entities take advantage of the Composted Manure Incentive Program sponsored by TCEQ. Project literature and public workshops will be conducted to ensure that entities are made aware of the incentive program.

One barrier identified was the overall lack of interest or demand. To increase and/or develop interest, TCE will work with TAES to establish field research and demonstration plots in the project area to ensure environmentally sound application and use techniques are determined and

to develop more efficient and productive dairy compost uses for the entities. Using these demonstration plots and through training workshops, TCE will inform both public entities and private individuals of the most environmentally sound application and use techniques, demonstrate applied benefits of compost use, establish cost effective methods of compost use and ultimately, supplement the promotion of a sustainable regional market for composted dairy manure. These applied research studies are outlined in the Research/Demonstration Design Plan (RDDP) submitted to TCEQ. Furthermore, TCE and TAES will compile publications following RDDP implementation to educate the end users of compost and to fill the void of public information concerning dairy compost.

R. Alexander Associates, Inc. (RAA) conducted dairy compost market research before his involvement with the TCE project and reviewed other related research. RAA found that peat, topsoil, bark products and other composted materials compete with the sale of dairy compost. This fact was further proven by the TCE survey results as more than half of the entities that produce their own product produce a mulch material rather than a compost material. Potential barriers to compost use identified by RAA include transportation costs, competition, a lack of public familiarity with the product and a low perceived value of dairy compost. To address some of the potential misconceptions, TCE and RAA will develop materials to promote and educate end-users of the benefits and practical uses of dairy compost. Secondly, taking advantage of the TCEQs Composted Manure Incentive Program, overall dairy compost costs may be reduced to compensate for related transportation costs.

Using their outreach network and coordinating with other activities involved in the marketing of dairy compost, TCE/TWRI hopes to establish a viable and sustainable market for dairy compost leading to less pollution in the Leon River and Bosque River watershed. The potential markets identified include:

- Support of the existing TxDOT market and the TSSWCB program
- Landscape architects within DFW region and watershed
- School districts, golf courses, and turfgrass managers through SAFE program
- Public land managers such as city park officials, county engineers, etc.
- Horticultural and residential urban applications
- Agricultural production within watershed

Exhibit 1

Questionnaire for Compost Users (Government Entities)

Name of entity: _____ Date: _____
Address: _____ Phone: _____

Person interviewed: _____ Title: _____
Population class: _____

1) Considering your use of compost, your organization

I. Has never used compost

- _____ Has used compost rarely (Approximately _____ times in the past)
- _____ Currently uses compost
- _____ Previously used compost, but has discontinued using it in recent years.

II. If so, why?

2) If your organization does not currently use compost products, please indicate which of the following is accurate. (mark all that apply)

- _____ Your organization does not have enough information about compost products to make a decision to try them.
- _____ Your (a) staff, (b) landscape contractors, or (c) landscape advisors have advised against the use of compost products as part of your landscape management program
- _____ Your organization has had one or more bad experiences with compost products
- _____ Your organization tried a compost product, but did not find it cost effective
- _____ Other _____

3) Who supervises these aspects of compost?

Acquisition: _____	Use: _____
Title: _____	Title: _____
Phone: _____	Phone: _____
Email: _____	Email: _____

4) From whom do you buy/obtain the compost?

*Municipality, commercial composter, agricultural producer, garden center, landscape contractor or other. Please include type of supplier if it is other.

Name _____	Name _____
Type of Supplier* _____	Type of Supplier _____
Address _____	Address _____
Phone _____	Phone _____

Name _____	Name _____
Type of Supplier _____	Type of Supplier _____
Address _____	Address _____
_____	_____
_____	_____
Phone _____	Phone _____

Name _____	Name _____
Type of Supplier _____	Type of Supplier _____
Address _____	Address _____
_____	_____
_____	_____
Phone _____	Phone _____

5) Considering the different types of compost, what type of compost or what brandname do you purchase, how much do you purchase per year and what is the price you pay?

Compost Type	Supplier and/or brandname*	Cubic yds purchased	Price per cubic yd
Dairy Manure compost:			
Leaf/yard trimmings compost:			
Biosolids (sludge) compost:			
Multiple materials compost:			
Compost/soil blend:			
Compost/mulch blend:			
Other _____			
Other _____			

- Please include specifications or procurement bid information for each product type, if any. If your unit of government produces some of the compost you use, include it as appropriate in the supplier column. Please indicate if the unit of measurement is not cubic yards – i.e. tons

6) How do you typically use compost, and how much do you use for each use? Or if you have not previously used compost, what would be your primary use of compost?

Type of Use	Amount used
Soil amendment for gardens and/or landscapes	
Soil amendment for turf establishment	
Soil amendment for crop production	

Type of Use (cont'd.)

Amount used (cont'd.)

Soil amendment for upgrading marginal/disturbed soils

Top-dressing or mulch for turf grass

Top-dressing or mulch for planting beds

Blended topsoil mix

Container medium (potted plants)

Sources of nutrients/fertilizer

Erosion or sediment control

Other _____

Other _____

7) What are the barriers to using compost or increasing compost use, for example ease of application, knowledge of compost, and sanitation? _____

8) Have you previously used related soil additive products similar to compost and if so, how much of each product do you use annually?

Product type	Amount*	Cost
Peat Moss		
Manure (not composted)		
Biosolids (not composted)		
Other organic matter		
Mulch (not composted)		
Potting Soil		
Topsoil		
Fertilizers		
Other _____		
Other _____		

- Please indicate the units of measurement used for each (cubic yds, tons, pounds, etc) and unit price.

9) Comments:

Exhibit 2

Supplemental Compost User Survey (Government Entities)

1. Do you consider compost to be readily available to you?

2. Using the following scale, indicate the level of importance you would place on credible or authoritative information about the following in making decisions about using compost. (1 = Extremely important; 2 = Somewhat important; 3 = Slightly important; 4 = Not important; 5 = Not applicable)

Information or guidance about compost application rates	1	2	3	4	5
Information or guidance about compost application methods	1	2	3	4	5
Availability of vendors providing compost	1	2	3	4	5
Availability of vendors providing compost hauling services or availability of hauling equipment	1	2	3	4	5
Availability of vendors providing compost application services or availability of application equipment	1	2	3	4	5
Information about the cost-effectiveness of using compost, including how it can reduce other landscaping costs	1	2	3	4	5
Information about specifications for compost producers	1	2	3	4	5
Information about compost characteristics and what it contains	1	2	3	4	5
Information about how to determine whether a compost product has the right characteristics for its intended use	1	2	3	4	5
Information about the effectiveness of compost in regards to:					
Plant growth response	1	2	3	4	5
Plant health and/or disease resistance	1	2	3	4	5
Improvement in soil characteristics	1	2	3	4	5
Erosion control effects	1	2	3	4	5
Water conservation benefits	1	2	3	4	5
Other _____	1	2	3	4	5
Information about the methods of using compost for the following purposes:					
Fertilizer for crops in lieu of or in combination with synthetic fertilizers	1	2	3	4	5
Garden prep or renovation	1	2	3	4	5
Soil preparation for sodding, seeding and planting	1	2	3	4	5
Top dressing of turf grass	1	2	3	4	5

Mulching or top dressing for planting beds	1	2	3	4	5
Erosion or sediment control	1	2	3	4	5
Container medium (potted plants)	1	2	3	4	5
Other _____	1	2	3	4	5
Health risks or safety problems (i.e. Potential for infectious diseases)	1	2	3	4	5
Potential odor problem	1	2	3	4	5
Potential pest problem (i.e. flies or other insects)	1	2	3	4	5
Aesthetic issues	1	2	3	4	5
Foreign material introduced in compost (i.e. sand, rocks, wood, plastic, etc.)	1	2	3	4	5
Potential damage to turf or landscape plants	1	2	3	4	5
Other: _____					

3. What kinds of documented information would be most important to you in your decision making about compost use? Using the following scale, please indicate the level of importance. (1 = Extremely important; 2 = Somewhat important; 3 = Slightly important; 4 = Not important; 5 = Not applicable) If necessary, give more information when possible.

Research data from studies conducted locally on plant responses and soil impacts due to compost use	1	2	3	4	5
Research data from studies conducted in another part of Texas or nationally on plant responses and soil impacts due to compost use	1	2	3	4	5
Discussion with professional colleagues and peers	1	2	3	4	5
Professional workshops and conferences	1	2	3	4	5
Professional or technical periodicals and magazines	1	2	3	4	5
Government agency bulletins and research reports	1	2	3	4	5
Public media reports and articles	1	2	3	4	5
Other _____					

Exhibit 3

Survey Participant Contact Information

City	Contact Person	Phone Number
Hico	City Hall	254.796.4620
Goldthwaite		
Glen Rose	Wade Busch	254.897.2239
De Leon		
Clifton	City Hall	254.675.8337
Dublin		
Comanche	Darwin Dickerson	915.356.2616
Marlin		
Woodway	Dena Forquer	254.772.4480
Bellmead		254.799.2436
Hewitt	Kenneth	254.666.2447
Belton	Sam Listi (BRA)	254.939.6471
Gatesville		
Brownwood	Tim Airheart	915.646.5775 x380
Weatherford	Scott Fairman	817.598.4243
Burleson	Peter Krause	817.295.8168
Southlake	Pedram Farahnak	817.481.2308
Watauga	Terry Wiley	817.514.5851
Cleburne	Larry Barham	817.645.0942
Keller	Dan Burger	817.337.4968
Mansfield	Cathy Anderson	817.276.4200
Georgetown	Jim Briggs	512.930.3889
Copperas Cove	Tom Comancho	254.518.4208
Hurst	Jerry Bradley	817.788.7027
Haltom City	George Fowler	817.831.6464
Grapevine	Larry Willhelm	817.410.3366
Eules	Ray McDonald	817.685.1650
Bedford	Don Henderson	817.952.2308
Temple	Kim Nuttenbring	254.298.5411
North Richland Hills		
Killeen	Peter Dillio & Malcolm Thompson	254.634.4536
Waco	Christian Heger	254.299.2612
Arlington	Scott Degrant	817.275.7041
Fort Worth	Melinda Adams	817.871.5700

Exhibit 4

Raw Survey Results

City	County	Pop.	Cont	Resp	Use comp	Type of compost used	Prod own	Do not use comp	Why they do not use compost or other miscellaneous comments	Interest in dairy compost
Hico	Hamilton	1341	yes	yes	--	--	--	✓	manpower; \$; do not consider compost readily available within the town	
Meridian	Bosque	1491	no	no						
Goldthwaite	Mills	1802	yes	yes				✓	Not a primary concern for city – economics	potential
Glen Rose	Somervell	2122	yes	yes	✓	mulch-green waste	✓	--	Plan to compost, but not immed.; Do not have N source, will use dairy comp if econ.	Potential
De Leon	Comanche	2433	yes	no						
Hamilton	Hamilton	2977	no	no						
Clifton	Bosque	3542	yes	yes	--	--	--	✓	conducted town survey — no interest in compost or recycling program	
Dublin	Erath	3754	yes	no						
Comanche	Comanche	4482	yes	yes	✓	mulch — green waste	✓	--	Give away mulch to Hwy. Dept. Don't have interest in compost — no public demand	
Granbury	Hood	5718	no	no						
Marlin	Falls	6628	yes	yes				✓	Not a primary concern for the city at this time	potential
Hillsboro	Hill	8232	no	no						
Woodway	McLennan	8733	yes	yes	--	--	--	✓	No need for it; little interest from residents	
Bellmead	McLennan	9214	yes	yes	--	--	--	✓	\$; not most important issue for them at moment	

Hewitt	McLennan	11085	yes	yes	✓	TCEQ contract	no	--	limited use/landscaping needs; \$	
Belton	Bell	14623	yes	yes	✓	BRA contract	no	--	Produces to reduce landfill. Do have odor issues since the BRA plant is w/in city limits	No potential interest – already has contract
City	County	Pop.	Cont	Resp	Use comp	Type of compost used	Prod own	Do not use comp	Why they do not use compost or other miscellaneous comments	Interest in dairy compost
Stephenville	Erath	14921	no	no						
Gatesville	Coryell	15591	yes	yes				✓	Not a primary concern for the city right now	No potential
Brownwood	Brown	18813	yes	yes	✓	Mulch-plan to do compost in 2-3 yr	✓	--	Produce mulch to reduce landfill. If they use manure, they would utilize MSW first	Potentially — before they initiate MSW system
Weatherford	Parker	19000	yes	Yes	✓	purchase-Clear Fork Materials	no	--	Would like to start producing their own, but staffing problems	Potential — see if we can beat price
Benbrook	Tarrant	20208	no	no						
Burleson	Johnson	20976	yes	yes	✓	green waste, poultry litter;	✓		Produce own because they do not consider compost readily available to them	Very interested depend on price and product quality
Southlake	Tarrant	21085	yes	yes	✓	contract out — no other info avail.	?	--	--	
Watauga	Tarrant	21908	yes	yes	--	--	--	✓	do not consider it readily avail.; not enough manpower; have used bagged fert.	Please send info!
Cleburne	Johnson	26005	yes	yes	✓	mulch — city use and give away rest	✓	--	Produce mulch to reduce landfill; charge tipping fee to homeowners	
Keller	Tarrant	27345	yes	no						
Mansfield	Tarrant	28031	yes	no						
Georgetown	Williamson	28339	yes	yes	✓	Free-TX Disposal System	no	--	Would use dairy compost depending on market. Currently has free alternate source	potential
Copperas Cove	Coryell	29455	yes	no						
Hurst	Tarrant	36273	yes	no						
Haltom City	Tarrant	39018	yes	yes	✓	city green waste; manure	✓	--	--	

City	County	Pop.	Cont	Resp	Use comp	Type of compost used	Prod own	Do not use comp	Why they do not use compost or other miscellaneous comments	Interest in dairy compost
Grapevine	Tarrant	42059	yes	no						
Eules	Tarrant	46005	yes	no						
Bedford	Tarrant	47152	yes	yes	--	--	--	✓	\$; manpower; small city-basic procedures	
Temple	Bell	54514	yes	yes	✓	BRA contract	no	--	Temple did not reply, but BRA contact did state they serve 75% Temple & 25% Belton	No potential interest – already has contract
N Richland Hills	Tarrant	55635	yes	no						
Killeen	Bell	86911	yes	no						
Waco	McLennan	113726	yes	yes	✓	prod mulch and buy dairy compost	no	--	Use mulch in city. Sell compost to citizens. Want to help — Dir of Water Utilities	Already utilize for citizens — potential city use?
Arlington	Tarrant	332969	yes	yes	✓	Erath Earth dairy compost	--	--	Use for football fields, had presentation last week-hoping more interest will develop	
Fort Worth	Tarrant	534694	yes	yes	✓	mulch and compost-beef	✓	--	Only use in city parks and given to schools; citizens want more compost; need more	not sure if city would take manure