

# **Economic Contributions of the Green Industry to the Texas Economy**

Report to the Texas Nursery and Landscape Association  
2019

by

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## ***Background Information***

While 2018 was a good year, it also marked the return of significant volatility. For example, the S&P 500 saw three corrections (February, October, December), yet it also reached all-time peaks. We are always quick to point out that stock market performance does not equal economic performance, but it is a good measure of uncertainty and volatility.

Households were especially confident in 2018, as the two most well-regarded monthly consumer sentiment indices pointed out. For example, the University of Michigan's index topped 100, twice (March, September) and fell below 96 only once (January); its historical average reading is 86.4. However, we care little about how people feel; we care about how they spend their money. In 2018, consumer sentiment and expenditures were highly correlated, and personal spending affirmed the strength of the economy. In the first three quarters of the year, spending contracted just once (0.1% in February). From March through November, consumer spending rose 0.4% or better every month.

This spending was also evidenced in the green industry, with 95 million households (HH) participating in lawn and gardening (L&G) activities, averaging \$503 in expenditures per HH. While the South, West, and Northeast regions were up, the Midwest and Mid-Atlantic regions suffered from poor weather conditions in the spring. Retail L&G spending (and transaction count) was up about 4% and there was about a 13% increase in do-it-for-me landscaping expenditures. While married 45-to-64-year-olds were spending the most, expenditures among the 18-34 millennial cohort was at an all-time high, a hopeful L&G trend for the future.

The green industry is strongly correlated with housing and expectations of home sellers and buyers differed in 2018, and that difference affected the pace of existing home sales. Prospective buyers found few affordable properties and went to the sidelines; in other words, sellers waited a little longer for their homes to move. Existing home sales in November were about 7% down year-over-year (YOY), while new home sales were down almost 9% YOY.

While these are obvious signs of the growth slowing down in the residential real estate market, other economic gauges are still strong, which gives green industry firms something to be bullish about. There is greater uncertainty in the global marketplace, however, and input costs for many green industry firms will likely continue to rise, exacerbating the cost-price squeeze already being experienced (input prices are 22.7% higher than they were pre-recession).

## ***Summary of Texas Sales***

Total green industry sales in Texas were **\$19.5 billion** in 2018. The *production and manufacturing* sales increased 5.34% to a total of \$2.0 billion in 2018. Adjustments in the comptroller's office sales numbers for the past three years reveal that *production and*

*manufacturing* sales have grown since the previous lowest point of \$1.5 billion in 2014. Similar to previous years, the *Lawn and Garden Equipment Manufacturing* sector is significantly lower compared to the levels prior to 2014. *Prefabricated Metal Buildings* experienced an increase of 19.35% in 2018 relative to 2017. The *Nursery and Greenhouse* sector sales increased 4.23% from 1.57 billion in 2017 to the highest all-time sales peak of \$1.75 billion in 2018.

The *Horticultural Services* sector grew 4.20% to an all-time record of \$5.72 billion in 2018. *Wholesale and Retail* had an increase of 3.15% to a total of \$11.8 billion in 2018. The net margins attributed to the retail sector accounted for more than \$3.6 billion. Net margins represent the share of sales attributed to the retail sector and not accounting for the portion of sales included in the production and manufacturing sector or the horticultural services sector. This study measures green industry sales in Texas by sector and then estimates economic contributions to the Texas Economy in terms of output, employment and value added.

## ***Methodology***

In order to estimate economic contributions of the Green Industry to the Texas economy sales by each green industry sector need to be measured. The North American Industry Classification System (NAICS) is used to gather data on *total green industry sales, including all sectors related to the green industry*. The data used in this report were provided by the State Comptroller's Office, as well as baseline data from the Green Industry Research Consortium National Nursery Survey, and **includes industry sales through the end of fiscal year 2018**. Every business in the state and the country is classified by North American Industry Classification System (NAICS). NAICS was developed jointly by the United States, Canada and Mexico to provide comparable statistics about business activity across North America. Green industry firms fall within one of the NAICS codes in Table 1.

## ***Green Industry Sales in Texas***

When reporting sales to the State Comptroller's office, each firm must report all sales, including those with sales taxes and those without sales taxes (wholesale). The reporting system has an area of potential slippage. For example, since wholesale growers do not collect any sales tax (for the state), some small and medium size growers are unaware of their reporting responsibilities. Not all of these firms realize that their services are subject to sale taxes. Therefore, unintended non-compliance has been a source of under reporting, which would underestimate green industry sales in Texas.

Table 1. NAICS Codes for Green Industry Sectors

Industry Sector	NAICS Code
Nursery & Greenhouse	1114
Lawn & Garden Equipment Mfg	333112
Greenhouse Manufacturing (Prefab. Metal Buildings)*	332311
Landscaping Services	561730
Landscape Architectural Services	541320
Flower, Nursery Stock And Florist Supplies Wholesalers	424930
Lawn & Garden Equipment & Supplies Stores	4442
Florists	4531
Building Material & Supplies Dealers*	4441
Food & Beverage Stores*	445
General Merchandise Stores*	452
Farm & Garden Machinery & Equipment Wholesalers*	423820

\* Green industry represents a portion of overall business activity (Sectors not included in Previous Scope reports).

Table 2. Total Green Industry Gross Sales in 2018

**Sales in the TEXAS Environmental Horticulture Industry, 2018**

Sector (NAICS code)	Sales	Establishments
<b>Production/Manufacturing</b>	<b>1,950,151,758</b>	<b>3,191</b>
Nursery & Greenhouse (1114) ^	1,751,066,467	2,848
Lawn & Garden Equipment Manufacturing (333112) ^	173,163,972	276
Prefabricated metal buildings (332311) (Greenhouses) ^*	25,921,319	67
<b>Horticultural Services</b>	<b>5,715,698,078</b>	<b>51,707</b>
Landscaping Services (561730)	5,371,670,445	49,517
Landscape Architectural Services (541320)	344,027,633	2,190
<b>Wholesale &amp; Retail Trade Horticulture Products (Gross)</b>	<b>11,799,964,783</b>	<b>78,789</b>
Flower, Nursery Stock and Florist Supplies Wholesalers (424930)	659,466,705	1,817
Lawn & Garden Equipment & Supplies Stores (4442)	6,090,096,993	8,837
Florists (4531)	548,238,242	12,151
Building Material & Supplies Dealers (4441)*	1,835,090,933	6,687
Food & Beverage Stores (445)*	452,453,727	11,377
General Merchandise Stores (452)*	1,434,932,845	37,001
Farm & Garden Equipment Wholesalers (423820)*	779,685,338	919
<b>Total All Sectors</b>	<b>19,465,814,618</b>	<b>133,687</b>

^ Estimated from baseline data from National Nursery Survey, and Texas Comptroller's Office Data.

\* NAICS represents a portion of Total Green Industry Sales

Due to this this potential slippage problem, additional data were used to supplement this report’s methodology. Table 2 shows Total Green Industry Gross Sales in 2018, and Table 3 shows sales from 2012-2018 for each green industry sector. Table 3 shows sales for the retail industry including gross sales, and net sales. Net sales represent the margin sales that correspond to the retail sector only.

**Table 3. Total Green Industry Sales 2012-2018**

	<b>GROWER</b>	<b>LANDSCAPE</b>	<b>RETAIL (Gross)</b>	<b>RETAIL (Net)</b>	<b>TOTAL</b>
<b>2018</b>	\$1,950,151,758	\$5,715,698,078	\$11,799,964,783	\$3,573,346,273	\$11,239,196,109
<b>2017</b>	\$1,846,049,165	\$5,475,841,553	\$11,428,142,711	\$3,460,748,563	\$10,782,639,281
<b>2016</b>	\$1,752,759,937	\$5,293,733,325	\$11,181,899,614	\$3,386,179,539	\$10,432,672,801
<b>2015</b>	\$1,987,750,169	\$4,763,827,857	\$12,141,826,310	\$3,676,871,125	\$10,428,449,152
<b>2014</b>	\$1,505,326,681	\$4,465,856,219	\$11,713,810,871	\$3,547,256,554	\$9,518,439,454
<b>2013</b>	\$2,100,242,682	\$4,550,424,995	\$11,721,100,798	\$3,549,464,140	\$10,200,131,818
<b>2012</b>	\$1,804,926,582	\$4,054,303,568	\$10,857,786,292	\$3,288,029,320	\$9,147,259,470

Total industry sales, including grower, landscaping and retailing sales increased 3.68% in 2018 for a total of \$19.5 billion in gross sales. The grower sector experienced an increase of 5.34% to a total of \$2.0 billion. The landscaping sector increased sales by 4.20% to a total of \$5.72 billion. Gross retail sales increased 3.15% to a total of \$11.8 billion in 2018. Figures 1, 2, 3 and 4 represent industry sales for growers, landscaping, retailing (gross) and total gross industry sales respectively broken down by subsectors.

**Figure 1. Grower Sales 2009-2018**

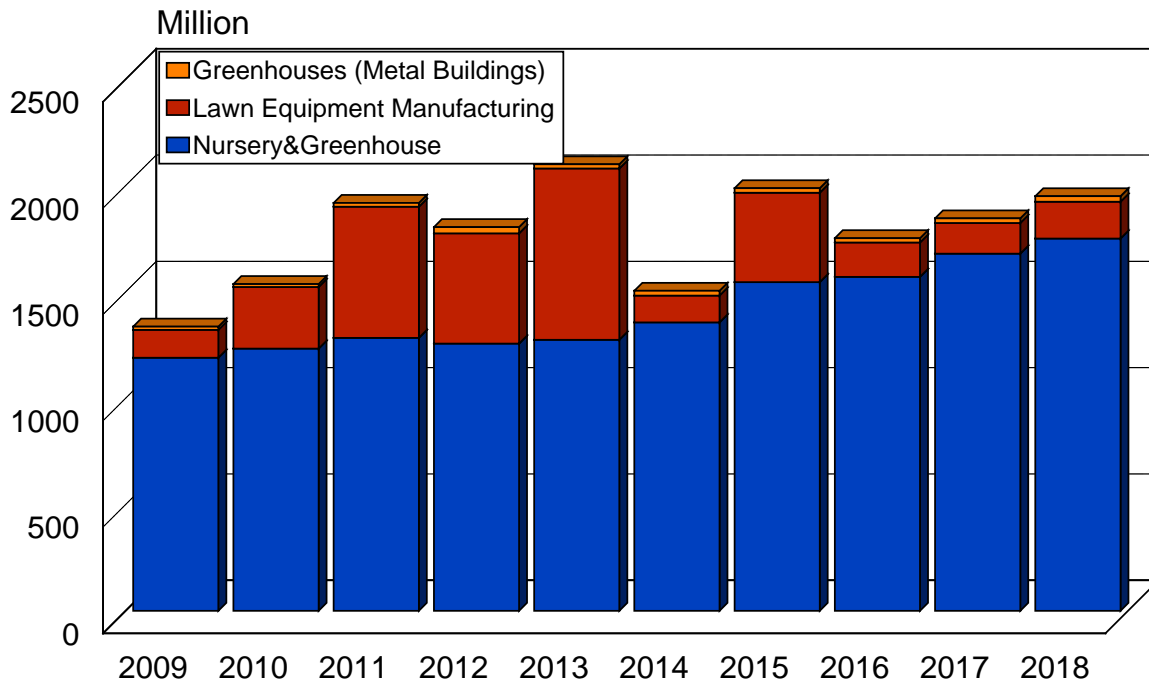


Figure 2. Landscaping Sales 2008-2018

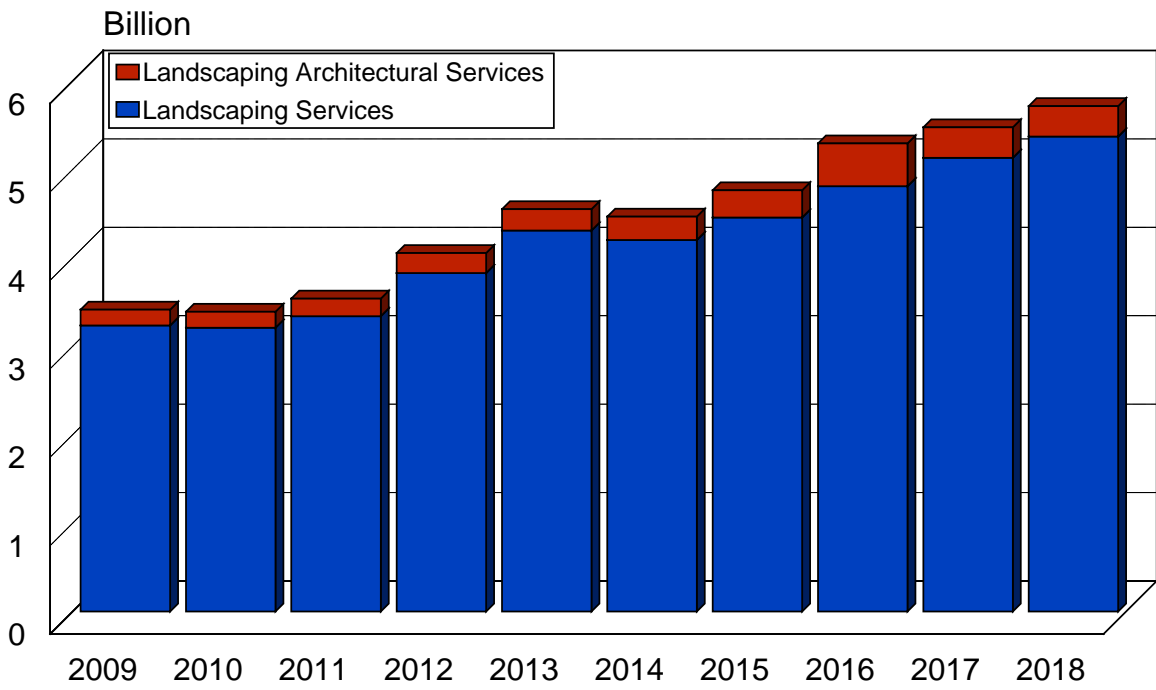
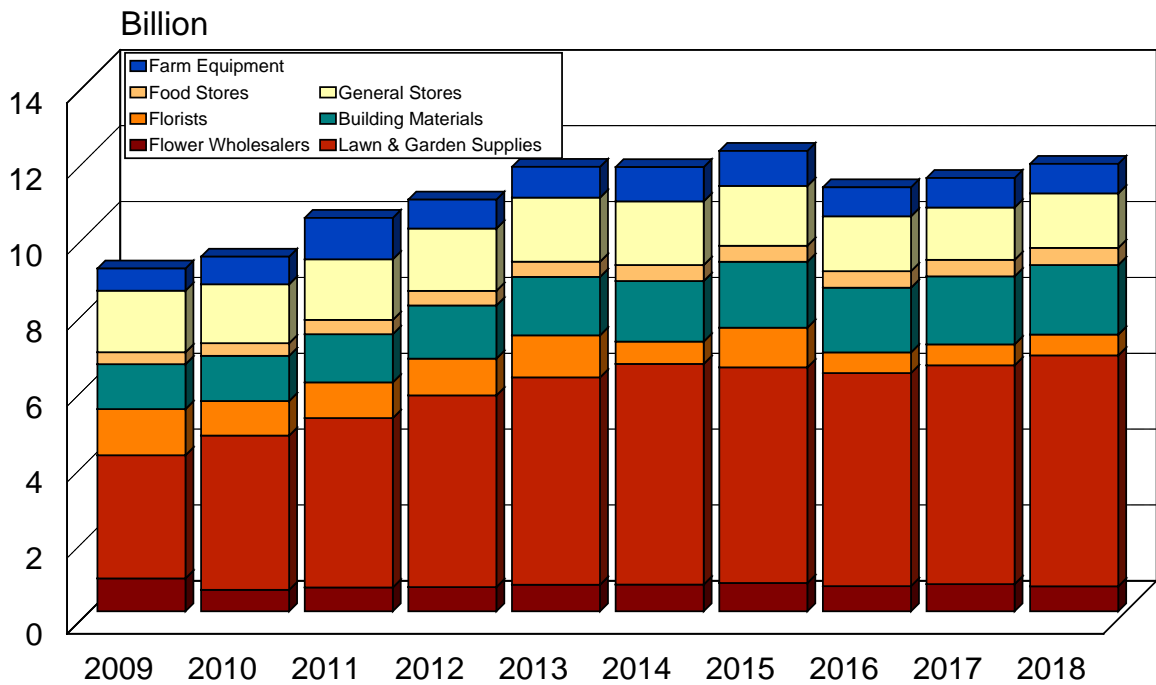


Figure 3. Retailing Sales 2008-2018



**Figure 4. Total Industry Sales 2008-2018**

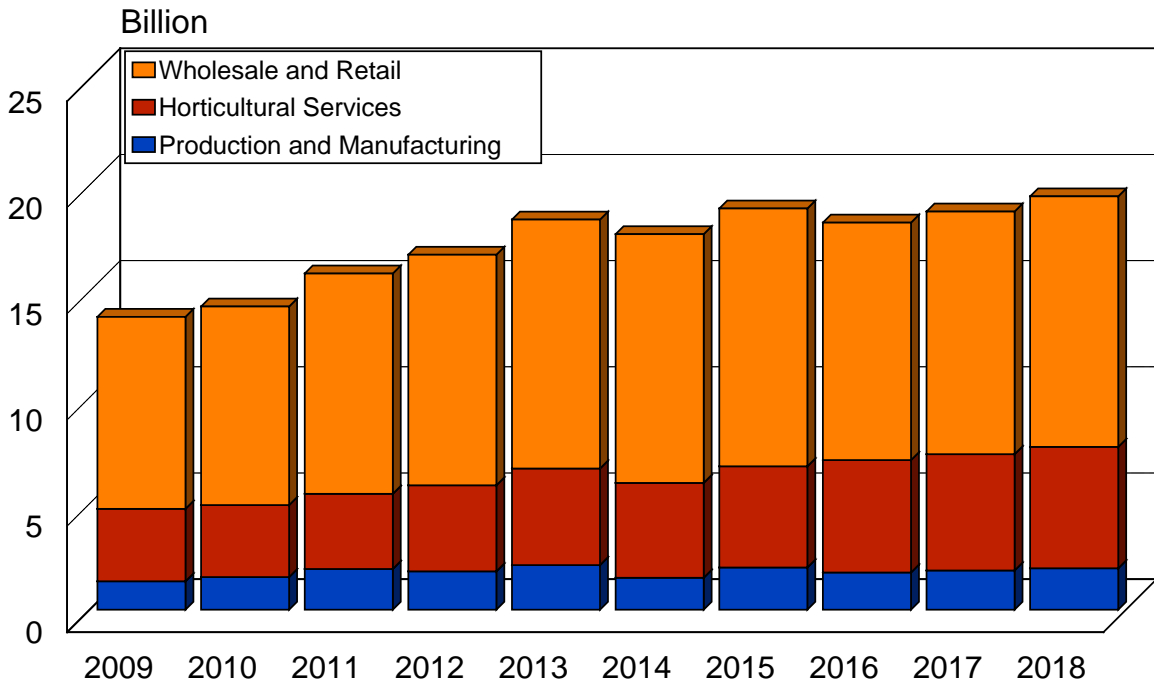


Table 4 presents green industry sales by sector and by major Metropolitan Statistical Area (MSA). There are 27 MSAs in Texas. The major MSAs are, Austin, Dallas-Ft. Worth, Houston, and San Antonio. The economic scope reports sales in five of the major MSAs. Dallas and Fort Worth are combined into one area; together, the five major MSAs included in this report represent over 60% of the total industry sales as shown in Figure 5. Dallas-Fort Worth and Houston hold the largest share of green industry sales in 2017 with 41.2% and 32.7% respectively. Figure 6 is a graphical representation of grower, landscaping and retailing sales by MSA in Texas.

**Table 4. Total Green Industry Sales by Metropolitan Statistical Area (MSA), 2018**

<b>MSA</b>	<b>GROWER</b>	<b>LANDSCAPE</b>	<b>RETAIL(Gross)</b>	<b>TOTAL</b>	<b>% OF TOTAL</b>
<b>Austin</b>	94,843,967	794,173,906	789,347,165	1,678,365,038	8.62%
<b>Dallas</b>	225,480,455	1,434,095,830	1,818,466,538	3,478,042,823	17.87%
<b>Ft Worth</b>	121,370,135	446,909,490	956,361,447	1,524,641,072	7.83%
<b>Houston</b>	284,312,511	1,633,081,150	2,048,758,049	3,966,151,710	20.37%
<b>San Antonio</b>	77,400,691	429,251,279	987,844,592	1,494,496,562	7.68%
<b>Other</b>	1,146,744,000	978,186,423	5,199,186,991	7,324,117,414	37.63%
<b>Total</b>	<b>1,950,151,758</b>	<b>5,715,698,078</b>	<b>11,799,964,783</b>	<b>19,465,814,618</b>	<b>100.00%</b>

Figure 5. Total Green Industry Sales in Texas by MSA in 2018

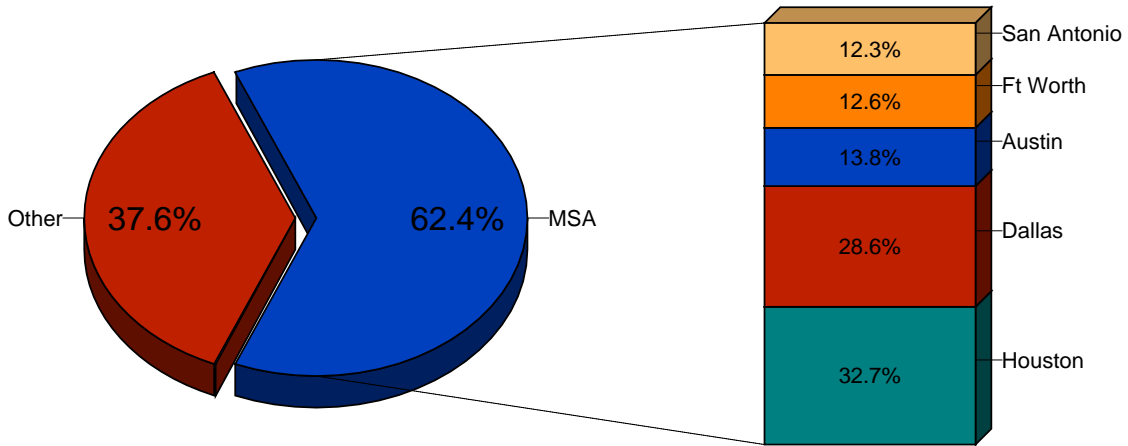
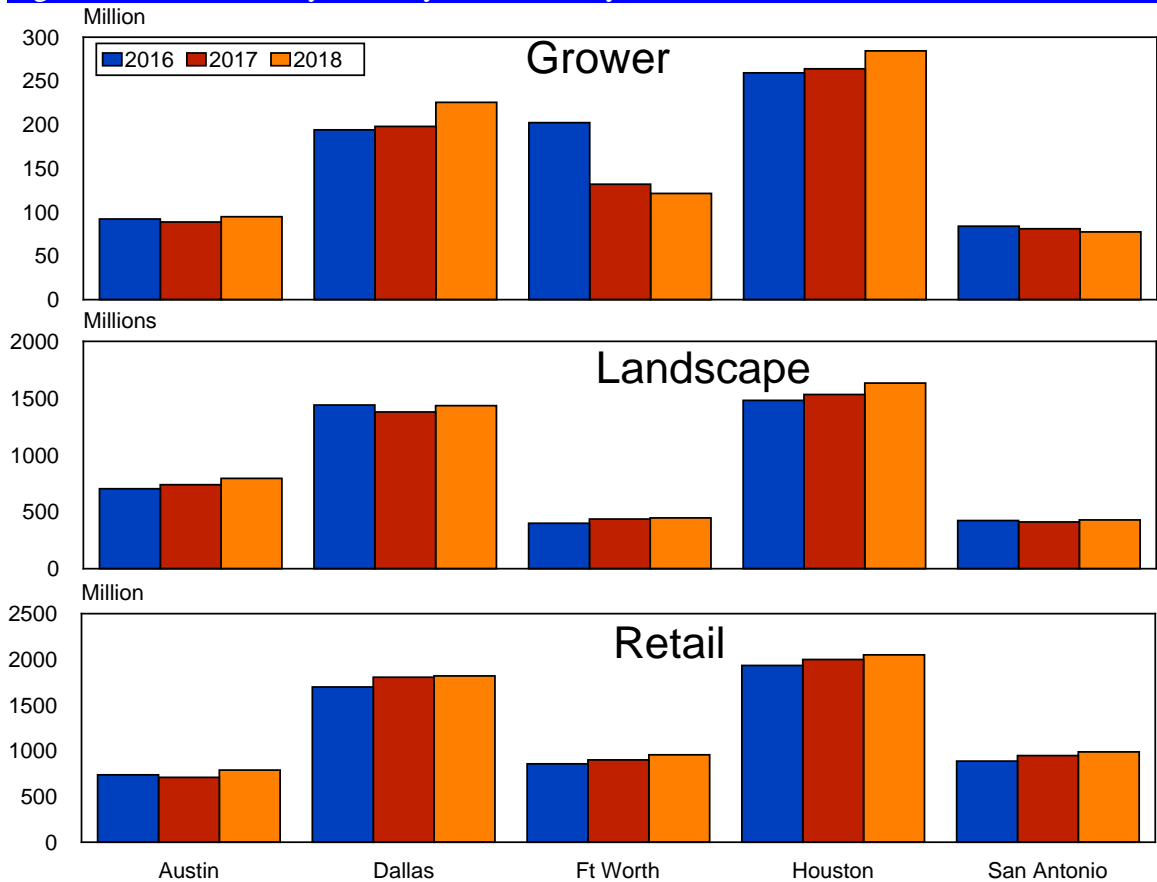


Figure 6. Green Industry Sales by Outlet and by MSA , 2016-2018





### ***Economic Contributions of the Green Industry to the Texas Economy***

The net sales data from the previous section were used to estimate total economic contributions of the Green Industry to the Texas Economy. To evaluate the economic impact contributions of the green industry to the Texas economy, economic models were developed using the Implan software system and associated Texas datasets (MIG, 2018). The Implan system includes more than 500 industries. Input-Output models represent the structure of a regional economy in terms of transactions, employees, households, and government institutions (Miller & Blair, 1985).

The economic multipliers derived from the Implan model were used to estimate the total economic activity generated in the state by sales (*output*) to final demand or exports. This includes the effects of intermediate purchases by green industry firms from other economic sectors (*indirect effects*) and the effects of green industry employee household consumer spending (*induced effects*), in addition to direct sales by industry firms. The wholesale and retail sectors use products from the production/manufacturing and horticultural services sectors; therefore, when calculating the impacts for the wholesale and retail trade horticulture products, output (retail sales) are reduced to reflect only the gross margin on sales to those sectors, otherwise we would be double counting the economic impact stemming from those products.

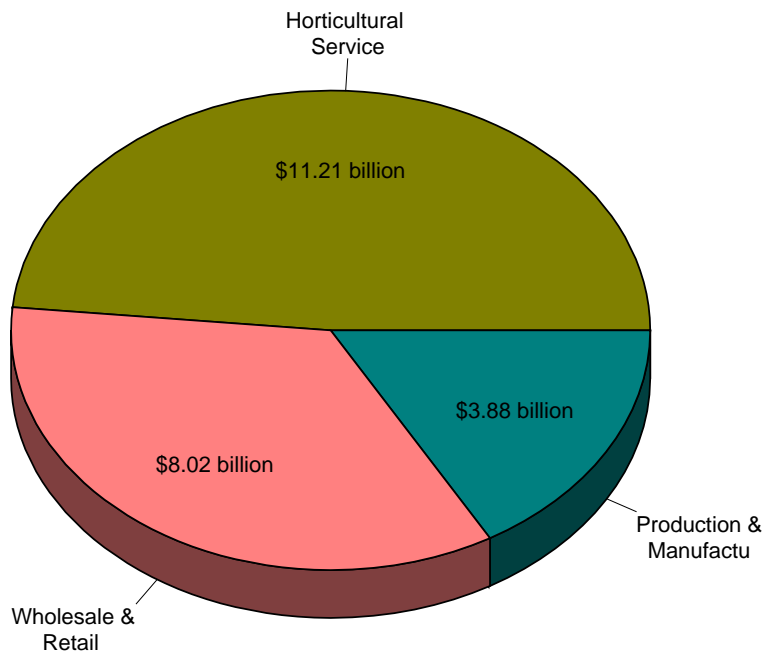
Economic impact multipliers vary based on data about actual relationships in the economy. The total economic contributions of the Green Industry in Texas were estimated at \$23.12 billion in output; 226,772 jobs, and \$13.4 billion in value added as shown in Table 5. For the production and manufacturing sectors, including nursery and greenhouse, lawn and garden equipment manufacturing, and metal building manufacturers, total output impacts were \$3.9 billion; employment impacts were 32,170 jobs; and value added impacts were \$1.9 billion. For the horticultural services sectors, including landscaping services and landscape architecture services, total output impacts were \$11.2 billion; employment impacts were 125,235 jobs; and value added impacts were \$6.7 billion. For the wholesale and retail trade sectors, total output impacts were \$8.0 billion; employment impacts were 69,367 jobs; and value added impacts were \$4.9 billion. The largest economic impact contributions for individual sectors were landscaping services, lawn and garden stores and nursery and greenhouse.

**Table 5. Economic Contributions of the Green Industry in Texas, 2018**

	Output (\$Mn)	Employment (jobs)	Value Added (\$Mn)
<b>Production &amp; Manufacturing</b>	3,889	32,170	1,853
Nursery & Greenhouse	3,592	31,283	1,725
Lawn & Garden Equipment Manufacturing	248	669	106
Prefabricated Metal Buildings	49	218	21
<b>Horticultural Services</b>	11,213	125,235	6,664
Landscaping Services	10,438	120,288	6,208
Landscape Architecture Services	775	4,947	456
<b>Wholesale &amp; Retail Trade Horticulture Products</b>	8,016	69,367	4,885
Flower, Nursery Stock & Florist Supplies Wholesalers	227	1,118	150
Lawn & Garden Equipment & Supplies Stores	4,154	31,680	2,504
Florists	1,116	15,958	689
Building Material & Supplies Dealers	1,252	9,546	754
Food & Beverage Stores	249	2,467	156
General Merchandise Stores	751	7,276	456
Farm & Garden Equipment Wholesalers	268	1,322	177
<b>Total (All Sectors)</b>	<b>23,119</b>	<b>226,772</b>	<b>13,402</b>

\*Figures may not sum due to rounding

**Figure 7. Green Industry Economic Output Contributions to the Texas Economy in 2018**



**Figure 8. Employment Contributions by the Green Industry in Texas 2018**



Economic impact results are also reported by major metropolitan statistical area (MSA) as summarized in Table 6. The MSAs with the greatest economic impact contributions to the State’s economy are Dallas-Fort Worth and Houston with \$5.9 billion and \$4.7 billion respectively. Austin generated \$1.99 billion in output impact and San Antonio had \$1.77 of output economic impact.

**Table 6. Economic Impact Contributions of the Green Industry in Texas by MSA 2018**

	Output (\$Mn)	Employment (jobs)	Value Added (\$Mn)
Austin	1,993	19,553	1,156
Dallas	4,131	40,518	2,395
Fort Worth	1,811	17,762	1,050
Houston	4,710	46,205	2,731
San Antonio	1,775	17,411	1,029
Other	8,698	85,324	5,042
<b>Total</b>	<b>23,119</b>	<b>226,772</b>	<b>13,402</b>

\*Figures may not sum due to rounding

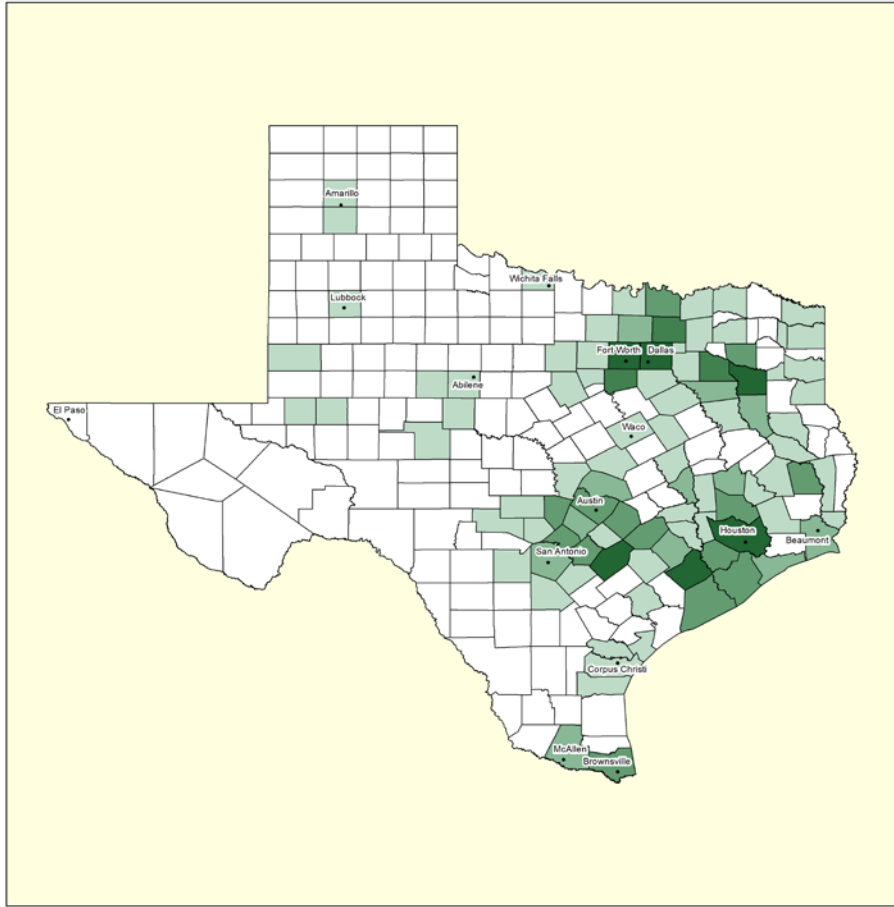
*Measures of economic activity.*

**Sales or output** is the dollar volume of a good or service produced or sold. **Final Demand** is sales to final consumers, including households, governments, and exports. **Intermediate sales** are sales to other industrial sectors. **Income** is the money earned within the region from production and sales. **Total income** includes personal income (wage and salary income, including income of sole proprietor's profits and rents). **Jobs or employment** is a measure of the number of jobs required to produce a given volume of sales/production, expressed as full time equivalents, or as the total number including part time and seasonal positions. **Value Added** is the sum of total income and indirect business taxes.

## Appendix – Estimated Green Industry Sales by County, 2018.

County	Sales	County	Sales	County	Sales	County	Sales	County	Sales
Anderson	26,370,438	Deaf Smith	132,385,852	Hutchinson	3,575,980	Navarro	33,153,580	Val Verde	11,155,132
Andrews	1,502,622	Delta	19,988	Irion	-	Newton	324,488	Van Zandt	103,797,903
Angelina	57,197,305	Denton	579,262,498	Jack	595,646	Nolan	21,550,499	Victoria	79,302,015
Aransas	11,555,633	De Witt	-	Jackson	24,179,376	Nueces	237,712,370	Walker	42,071,511
Archer	10,805,019	Dickens	61,745	Jasper	28,759,399	Ochiltree	4,182,541	Waller	118,611,369
Armstrong	-	Dimmit	1,238,780	Jeff Davis	40,808	Oldham	7,709	Ward	6,138,776
Atascosa	36,444,527	Donley	128,963	Jefferson	142,944,465	Orange	36,601,552	Washington	51,383,498
Austin	70,451,321	Duval	403,345	Jim Hogg	152,894	Palo Pinto	9,654,954	Webb	82,196,181
Bailey	12,770,960	Eastland	6,621,484	Jim Wells	7,180,672	Panola	2,236,101	Wharton	230,658,078
Bandera	2,751,867	Ector	93,310,922	Johnson	210,579,782	Parker	123,169,681	Wheeler	394,650
Bastrop	77,481,877	Edwards	75,073	Jones	2,166,573	Parmer	37,616,686	Wichita	67,837,593
Baylor	167,443	Ellis	101,336,739	Karnes	1,808,057	Pecos	15,946,173	Wilbarger	7,959,215
Bee	16,079,720	El Paso	-	Kaufman	66,581,883	Polk	24,309,542	Willacy	369,503
Bell	140,733,846	Erath	47,160,177	Kendall	75,349,417	Potter	67,895,011	Williamson	451,498,466
Bexar	1,110,906,123	Falls	1,321,932	Kenedy	-	Presidio	526,305	Wilson	29,669,680
Blanco	31,502,926	Fannin	24,234,147	Kent	482	Rains	5,504,377	Winkler	216,903
Borden	-	Fayette	62,978,398	Kerr	41,689,330	Randall	125,574,630	Wise	51,736,845
Bosque	2,702,407	Fisher	86,917	Kimble	274,903	Reagan	59,262	Wood	51,953,006
Bowie	97,782,137	Floyd	108,885	King	-	Real	24,490	Yoakum	228,796
Brazoria	199,140,835	Foard	9,639	Kinney	4,659	Red River	614,985	Young	8,858,733
Brazos	264,984,525	Fort Bend	364,937,027	Kleberg	9,192,693	Reeves	3,242,130	Zapata	591,626
Brewster	1,027,542	Franklin	2,428,758	Knox	3,582,420	Refugio	147,841	Zavala	2,225,963
Briscoe	5,567	Freestone	4,601,629	Lamar	59,503,864	Roberts	-		
Brooks	269,534	Frio	2,443,863	Lamb	92,403,842	Robertson	921,794		
Brown	21,116,741	Gaines	50,829,956	Lampasas	14,009,787	Rockwall	62,149,839		
Burleson	37,841,669	Galveston	375,805,693	La Salle	-	Runnels	10,943,763		
Burnet	36,057,221	Garza	284,308	Lavaca	12,489,681	Rusk	15,007,161		
Caldwell	31,480,000	Gillespie	32,598,804	Lee	14,435,782	Sabine	1,692,356		
Calhoun	4,096,744	Glasscock	-	Leon	13,824,155	San Augustine	219,932		
Callahan	6,726,043	Goliad	295,484	Liberty	49,337,780	San Jacinto	1,271,904		
Cameron	137,405,729	Gonzales	120,913,528	Limestone	13,822,350	San Patricio	72,718,749		
Camp	1,701,458	Gray	18,784,549	Lipscomb	43,209	San Saba	5,636,102		
Carson	3,573,699	Grayson	128,179,449	Live Oak	9,586,342	Schleicher	16,881		
Cass	8,351,697	Gregg	159,039,215	Llano	6,925,035	Scurry	2,008,420		
Castro	25,991,604	Grimes	28,053,416	Loving	-	Shackelford	204,756		
Chambers	31,300,080	Guadalupe	125,808,347	Lubbock	210,531,351	Shelby	20,431,270		
Cherokee	45,251,944	Hale	69,486,516	Lynn	28,040	Sherman	44,042		
Childress	1,834,327	Hall	35,400	Madison	1,359,132	Smith	371,522,607		
Clay	272,433	Hamilton	2,934,603	Marion	457,007	Somervell	1,721,621		
Cochran	13,925	Hansford	13,978,056	Martin	551,927	Starr	9,618,173		
Coke	73,240	Hardeman	131,201	Mason	91,878	Stephens	2,302,704		
Coleman	274,574	Hardin	17,120,989	Matagorda	55,182,276	Sterling	-		
Collin	681,318,620	Harris	2,684,337,435	Maverick	20,296,755	Stonewall	12,042		
Collingsworth	49,411	Harrison	92,651,808	McCulloch	4,045,392	Sutton	50,495		
Colorado	35,975,734	Hartley	695,615	McLennan	204,206,443	Swisher	227,010		
Comal	138,852,624	Haskell	96,297	McMullen	-	Tarrant	1,290,582,390		
Comanche	13,986,449	Hays	143,600,261	Medina	56,575,108	Taylor	95,309,272		
Concho	-	Hemphill	79,386	Menard	8,718	Terrell	-		
Cooke	68,388,044	Henderson	62,345,284	Midland	121,355,794	Terry	54,854,501		
Coryell	17,794,637	Hidalgo	280,160,500	Milam	8,092,464	Throckmorton	43,502		
Cottle	-	Hill	30,049,101	Mills	398,889	Titus	22,140,766		
Crane	12,981	Hockley	30,999,032	Mitchell	2,050,667	Tom Green	69,945,422		
Crockett	-	Hood	29,723,216	Montague	10,498,505	Travis	1,091,934,989		
Crosby	10,270,149	Hopkins	36,281,690	Montgomery	354,329,988	Trinity	438,970		
Culberson	35,819	Houston	19,252,688	Moore	183,859,992	Tyler	47,396,532		
Dallam	88,968,657	Howard	24,127,719	Morris	3,443,458	Upshur	15,709,357		
Dallas	2,166,347,579	Hudspeth	55,635	Motley	-	Upton	101,904		
Dawson	612,326	Hunt	56,176,994	Nacogdoches	47,819,132	Uvalde	10,821,598		

# Grower Sales



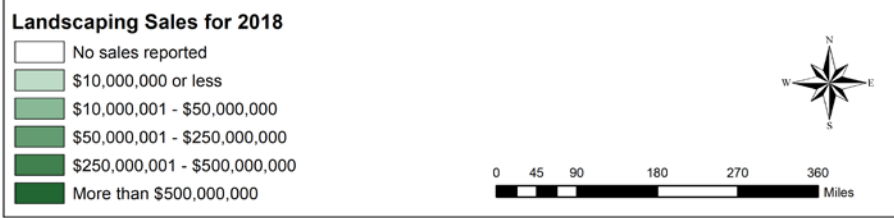
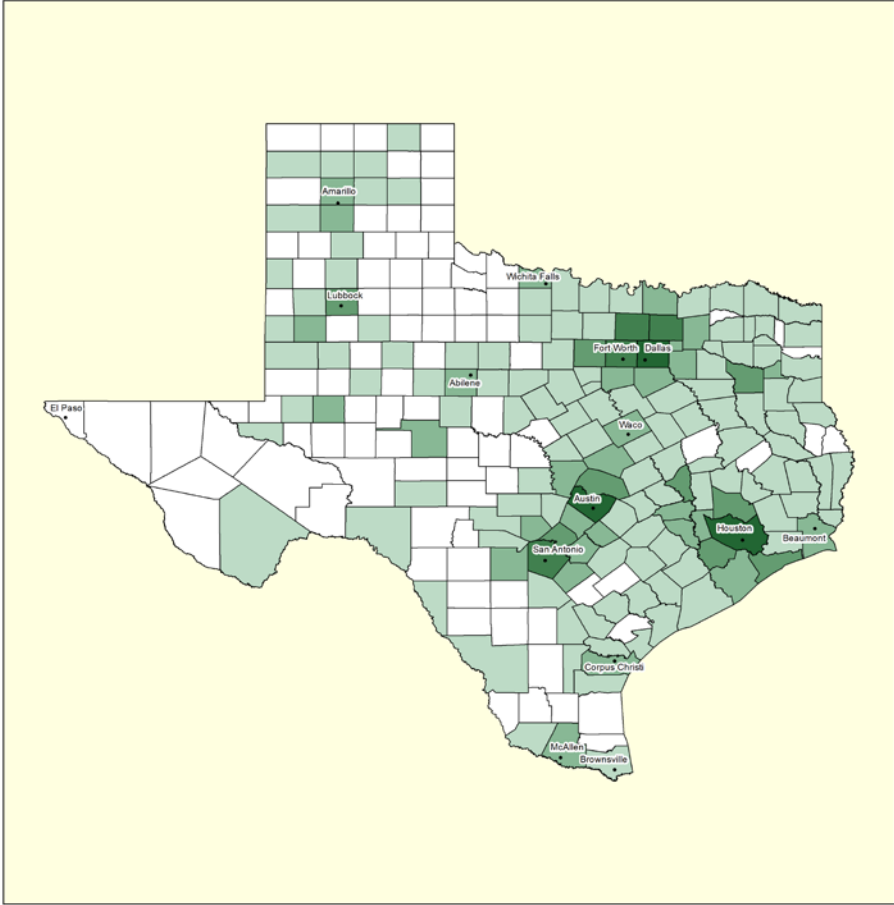
## Grower Sales for 2018

- No sales reported
- \$10,000,000 or less
- \$10,000,001 - \$25,000,000
- \$25,000,001 - \$50,000,000
- \$50,000,001 - \$100,000,000
- More than \$100,000,000



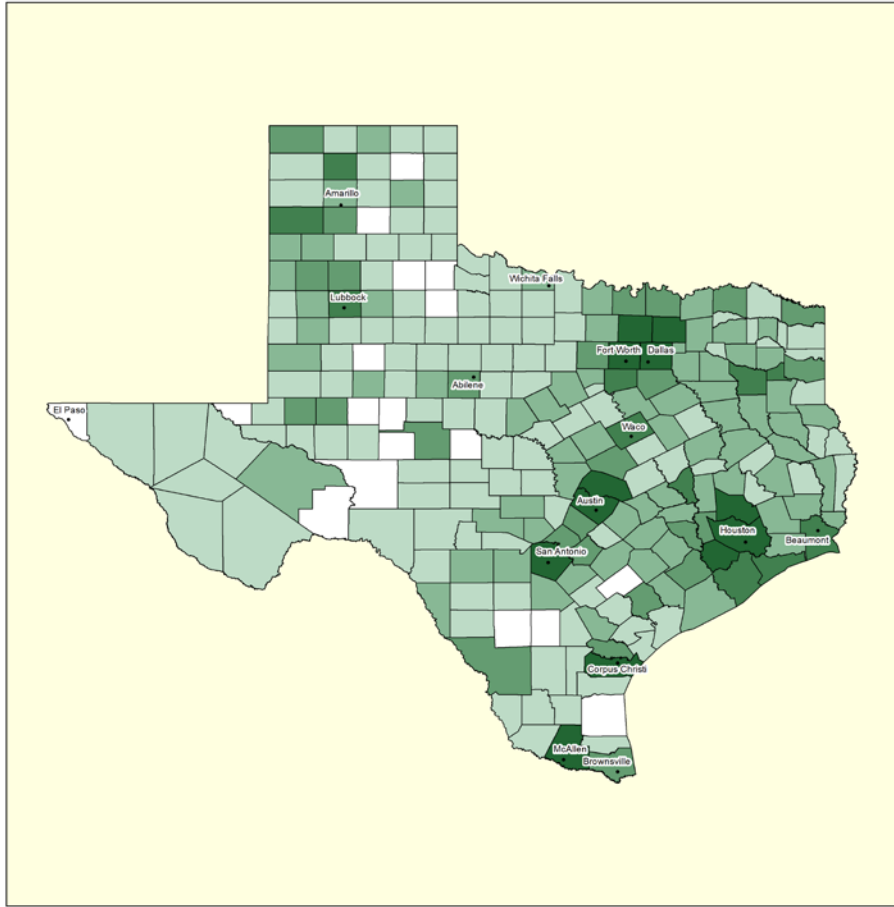
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# Landscaping Sales



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# Retail Sales



## Retail Sales for 2018

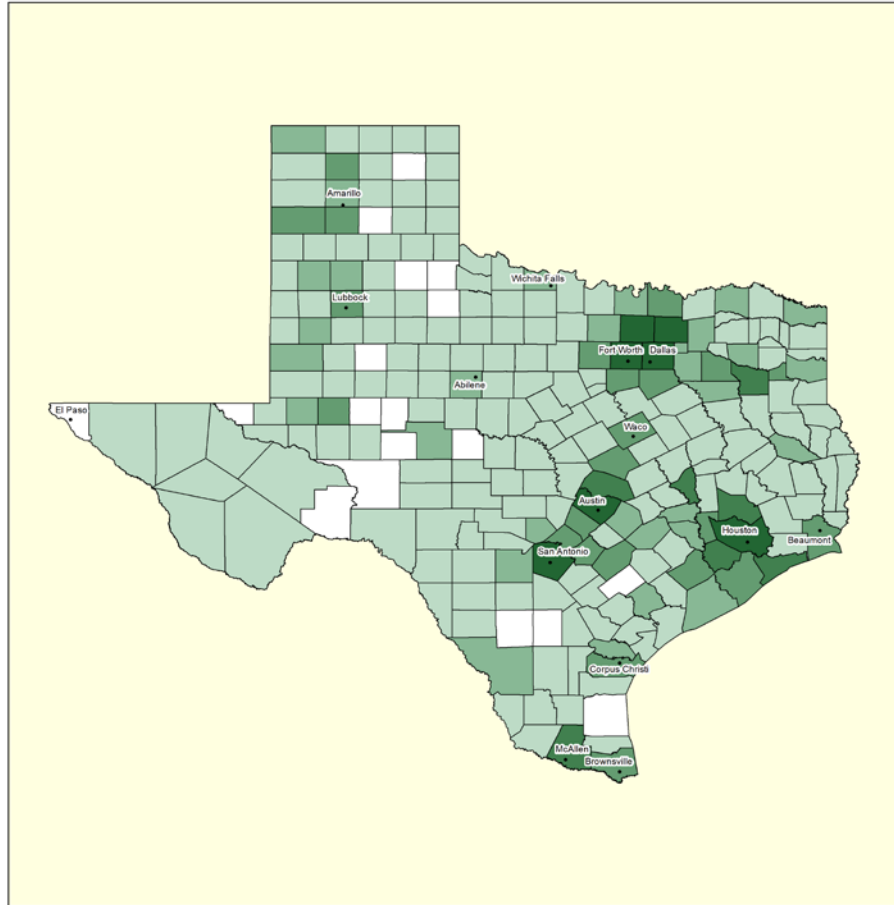
- No sales reported
- \$10,000,000 or less
- \$10,000,001 - \$50,000,000
- \$50,000,001 - \$100,000,000
- \$100,000,001 - \$200,000,000
- More than \$200,000,000









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# Total Sales



## Total Sales for 2018

-  No sales reported
-  \$50,000,000 or less
-  \$50,000,001 - \$100,000,000
-  \$100,000,001 - \$250,000,000
-  \$250,000,001 - \$500,000,000
-  More than \$500,000,000



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