

Economic Contributions of the Green Industry to the Texas Economy

Report to the Texas Nursery and Landscape Association
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by

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Background and Introduction

Green industry sales in the United States were lackluster because of challenging weather in many parts of the country. Year-over-year growth in aggregate gross sales for the industry was basically flat over 2021, which is considered to be the best year in the green industry in decades because of the strong top-line sales in addition to strong bottom-line net profits. Texas, however, experienced a decent year in 2022 due to the continuing recovery in final demand promulgated by the significant loss in plant material from the February 2021 freeze and the strong housing market in the major metro areas within Texas.

Another contributing factor to the growth in top-line sales was the increases in overall prices levels achieved throughout the green industry supply chain. Due to unavailable data regarding the units sold across the industry, it is impossible to determine how much of the recent sales growth stemmed from any increases in unit sales versus how much was due to the price effects.

Input costs have been a driving factor in the prices increases the industry has been able to secure, with green industry inputs (e.g., labor, containers, media, freight, etc.) increasing 10.1% in 2021 and another 8.4% in 2022. Thus, industry participants were forced to increase their prices or suffer margin compression. Strong housing demand (sales of new and existing home) led to strong retail and landscape service sales in Texas, bolstering the ability to pass along added costs downstream in the supply chain.

Summary of Texas Sales

Total green industry sales in Texas show an overall industry increase of 5.57% to a record of **\$32.1 billion** in 2022. It is notable that from 2020 to 2021 the industry experienced a tremendous 24.7% jump from \$22.8 to \$30.3 billion. Note that the sales figures are adjusted by the Texas Comptroller's office for the preceding three years, which may result in some differences for the annual reports until the figures become permanent. The *production and manufacturing* sector remained nearly flat from 3.82 to 3.81 billion in 2021 and 2022 respectively for an official 0.18% reduction.

The *Horticultural Services* sector experienced an increase of 4.06% in 2022 to \$10.4 billion, which is small relative to the 36.76% increase the previous year linked to the recovery from COVID. The *Wholesale and Retail* sector had an increase of 7.68% to a total of \$17.9 billion in 2022. The net margins attributed to the retail sector accounted for \$5.4 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 2022**. Please note that the Texas Comptroller’s office updates the sales data for the preceding three years, so there will be some adjustments in the sales figures for the previous three years. 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, however, 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 2022

Sector (NAICS code)	Sales	Establishments
Production/Manufacturing	3,817,450,738	4,772
Nursery & Greenhouse (1114) ^	2,855,070,290	4,245
Lawn & Garden Equipment Manufacturing (333112) ^	895,331,098	415
Prefabricated metal buildings (332311) (Greenhouses) ^*	67,049,350	112
Horticultural Services	10,405,459,392	54,683
Landscaping Services (561730)	9,876,481,886	52,201
Landscape Architectural Services (541320)	528,977,506	2,482
Wholesale & Retail Trade Horticulture Products (Gross)	17,859,843,345	91,894
Flower, Nursery Stock and Florist Supplies Wholesalers (424930)	980,677,034	2,254
Lawn & Garden Equipment & Supplies Stores (4442)	9,181,392,882	10,144
Florists (4531)	678,834,381	13,151
Building Material & Supplies Dealers (4441)*	3,118,311,018	7,416
Food & Beverage Stores (445)*	634,433,182	12,603
General Merchandise Stores (452)*	1,871,223,816	45,144
Farm & Garden Equipment Wholesalers (423820)*	1,394,971,032	1,183
Total All Sectors	32,082,753,476	151,349

^ 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 2022, and Table 3 shows sales from 2016-2022 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 Gross Sales 2016-2022

	GROWER	LANDSCAPE	RETAIL (Gross)	RETAIL (Net)	TOTAL
2022	\$3,817,450,738	\$10,405,459,392	\$17,859,843,345	\$5,408,440,265	\$32,082,753,476
2021	\$3,824,224,495	\$9,982,656,561	\$16,488,832,135	\$4,993,261,246	\$30,295,713,192
2020	\$2,914,313,755	\$6,315,505,306	\$13,589,365,950	\$4,115,225,008	\$22,819,185,010
2019	\$2,565,827,249	\$6,806,861,414	\$12,974,096,595	\$3,928,904,922	\$22,346,785,258
2018	\$1,961,639,032	\$5,732,757,842	\$11,813,581,638	\$3,577,469,822	\$19,507,978,511
2017	\$2,140,097,172	\$5,651,181,407	\$12,008,101,380	\$3,636,375,625	\$19,799,379,959
2016	\$1,752,759,937	\$5,293,733,325	\$11,181,899,614	\$3,386,179,539	\$18,228,392,876

Total industry gross sales, including grower, landscaping, and retailing sales increased 5.57% in 2022 for a total of \$32.1 billion in gross sales. The grower sector experienced a decrease of 0.18% to a total of \$3.81 billion. The landscaping sector experienced an increase of 4.06% to a total of \$10.4 billion. Gross retail sales increased 7.68% to a total of \$17.9 billion in 2022. 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 2013-2022

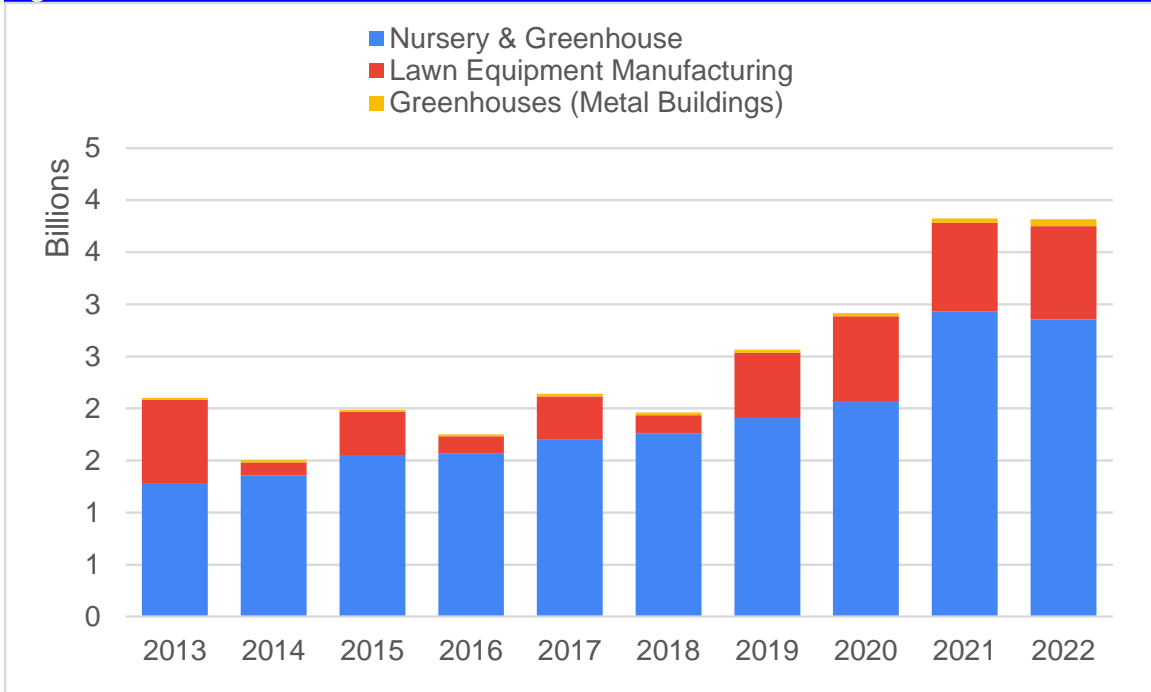


Figure 2. Landscaping Sales 2013-2022

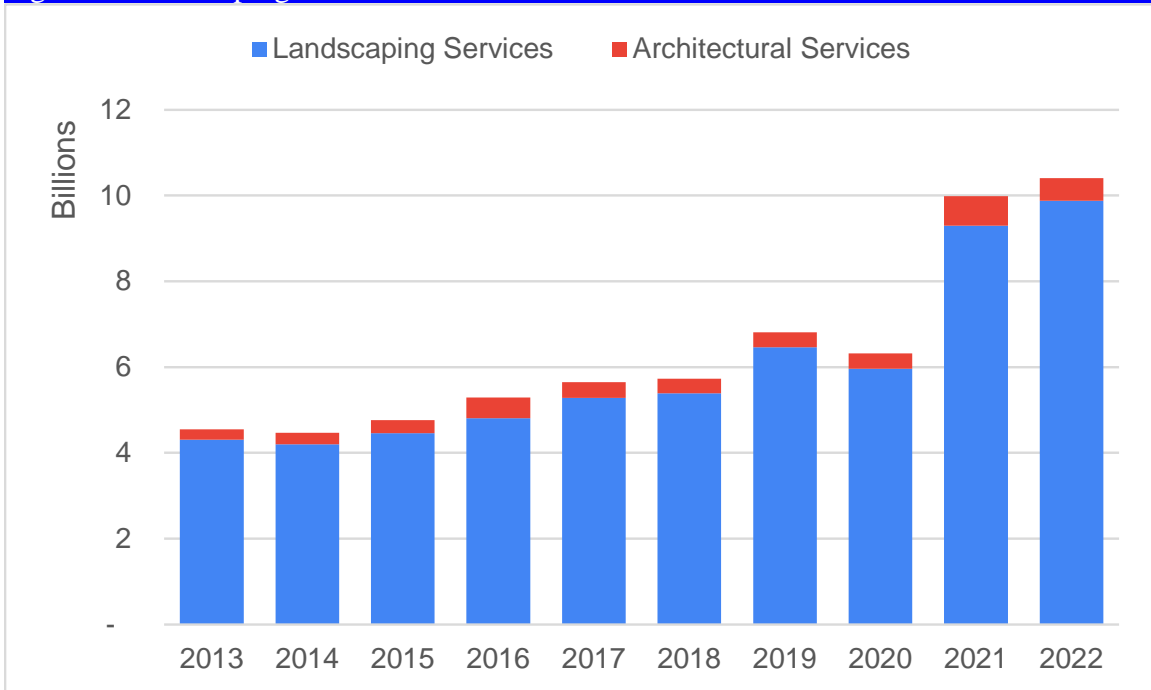


Figure 3. Retailing Sales 2013-2022

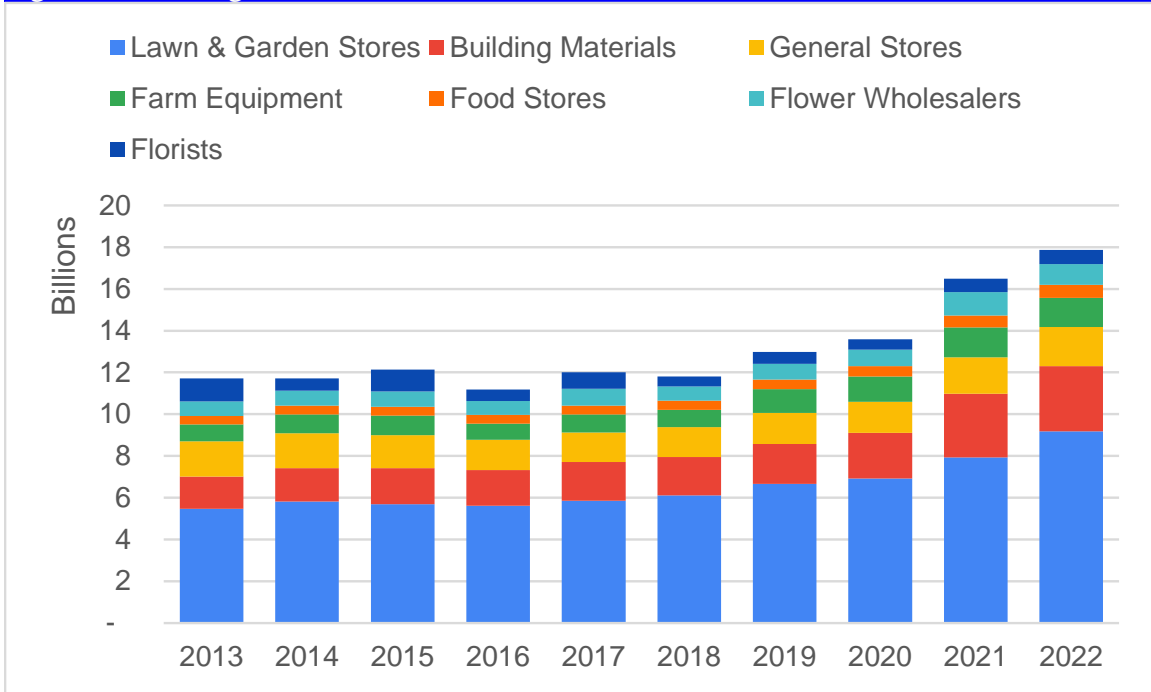


Figure 4. Total Industry Sales 2013-2022

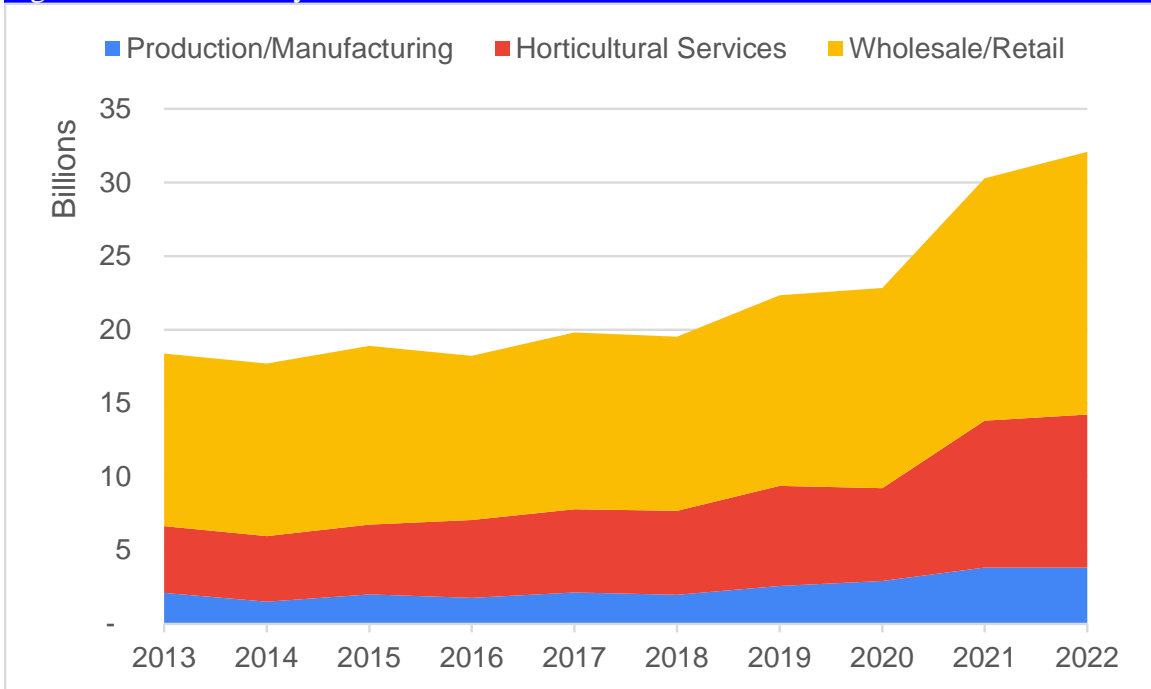


Table 4 presents green industry sales by sector and by major Metropolitan Statistical Area (MSA). There are 27 MSAs in Texas. The major MSAs are, Austin, Dallas, Ft. Worth, Houston, and San Antonio. The economic scope reports sales in five of the major MSAs. The five major MSAs included in this report represent a combined 60.7% of the total industry sales as shown in Figure 5. Houston and Dallas hold the largest share of green industry sales in 2022 with 22.3% and 15.9% 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), 2022

MSA	GROWER	LANDSCAPE	RETAIL(Gross)	TOTAL	% OF TOTAL
Austin	224,575,054	1,227,132,268	1,061,221,106	2,512,928,429	7.83%
Dallas	405,817,250	2,134,185,429	2,571,585,143	5,111,587,822	15.93%
Ft Worth	262,222,066	736,221,995	1,506,904,316	2,505,348,378	7.81%
Houston	404,979,032	3,941,806,191	2,817,257,540	7,164,042,763	22.33%
San Antonio	245,568,285	652,788,361	1,282,128,608	2,180,485,254	6.80%
Other	2,274,289,051	1,713,325,148	8,620,746,631	12,608,360,830	39.30%
Total	3,817,450,738	10,405,459,392	17,859,843,345	32,082,753,476	100.00%

Figure 5. Total Green Industry Sales in Texas by MSA in 2022

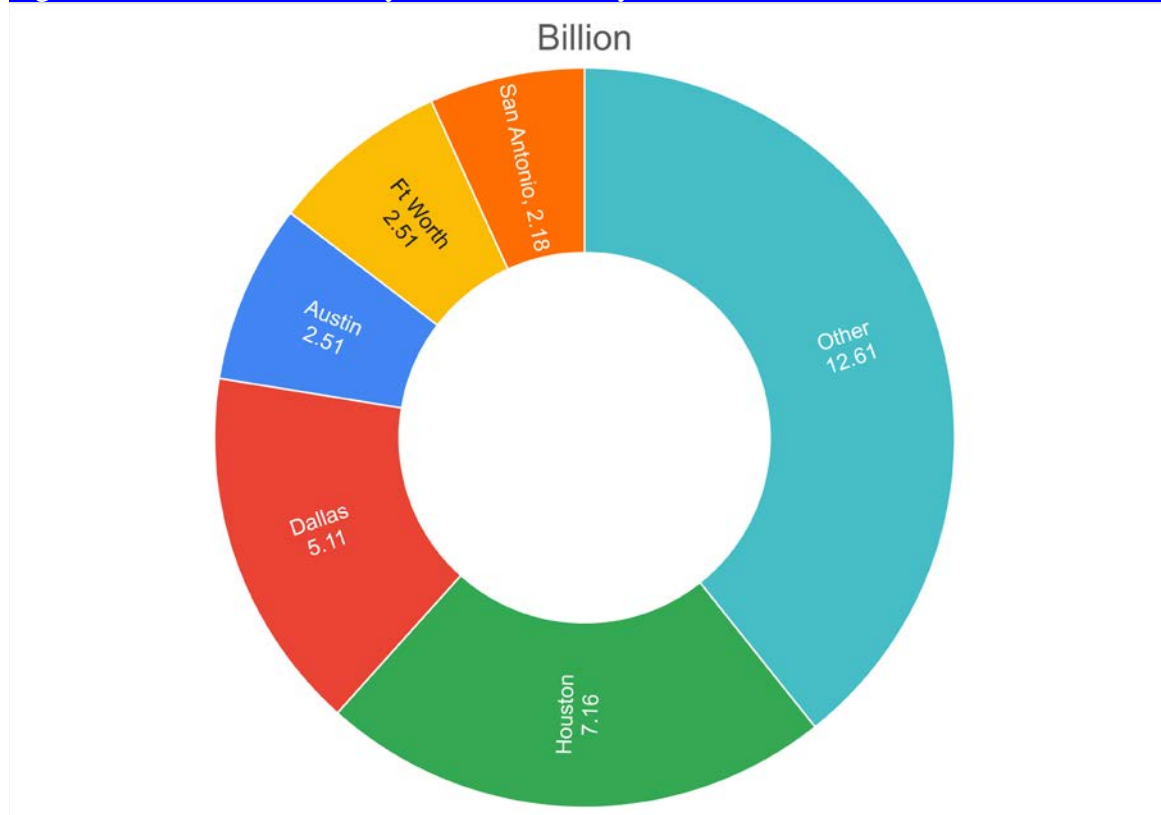
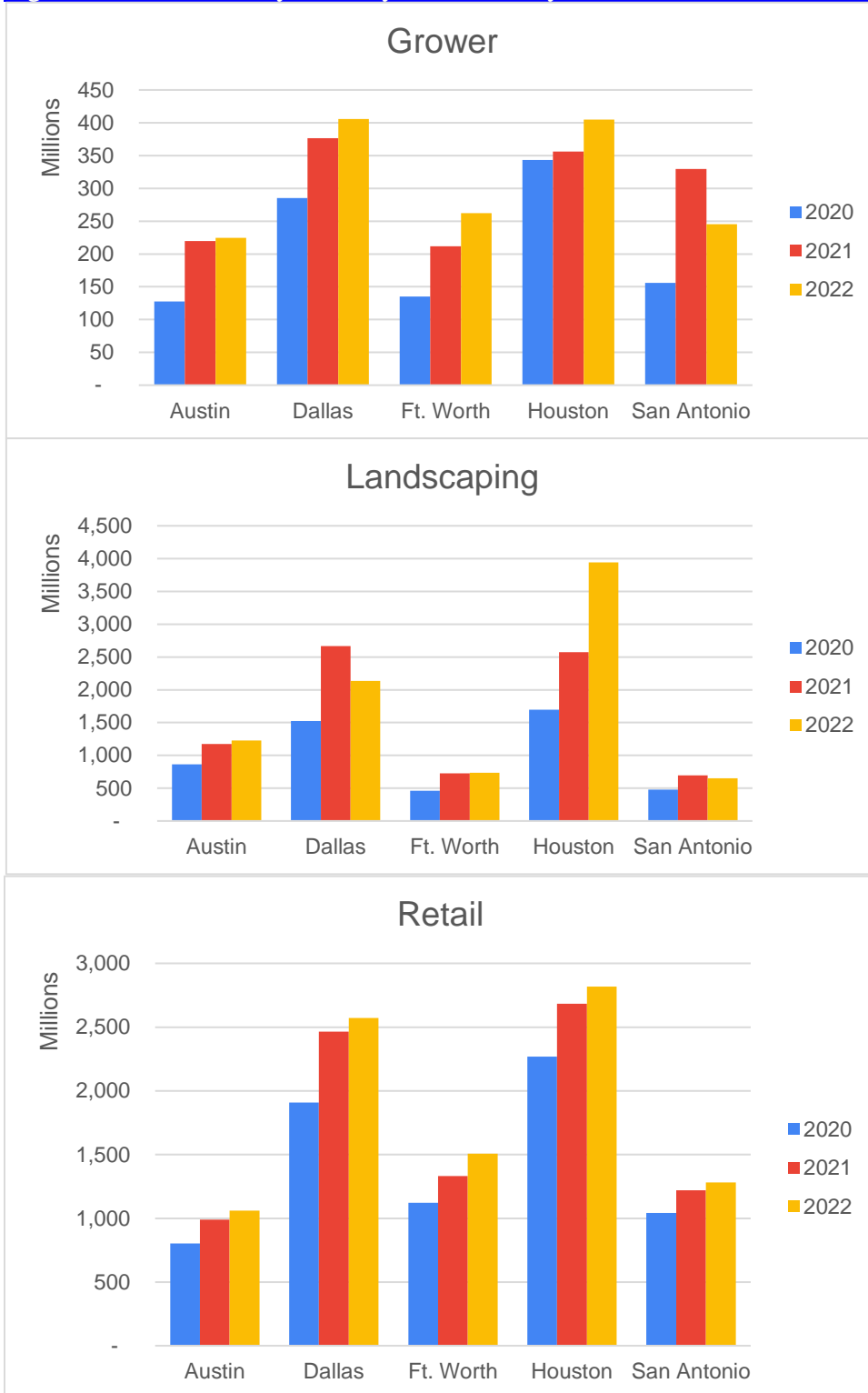


Figure 6. Green Industry Sales by Outlet and by MSA , 2020-2022



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, 2022). 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 \$40.7 billion in output; 336,431 jobs, and \$22.8 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 \$7.1 billion; employment impacts were 58,345 jobs; and value-added impacts were \$3.5 billion. For the horticultural services sectors, including landscaping services and landscape architecture services, total output impacts were \$21.0 billion; employment impacts were 179,447 jobs; and value-added impacts were \$11.6 billion. For the wholesale and retail trade sectors, total output impacts were \$12.6 billion; employment impacts were 98,638 jobs; and value-added impacts were \$7.6 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, 2022

	Output (\$Mn)	Employment (jobs)	Value Added (\$Mn)
Production & Manufacturing	7,086	58,345	3,530
Nursery & Greenhouse	5,506	53,456	3,029
Lawn & Garden Equipment Manufacturing	1,449	4,356	448
Prefabricated Metal Buildings	131	534	54
Horticultural Services	21,003	179,447	11,650
Landscaping Services	19,876	172,669	10,988
Landscape Architecture Services	1,126	6,778	661
Wholesale & Retail Trade Horticulture Products	12,595	98,638	7,575
Flower, Nursery Stock & Florist Supplies Wholesalers	369	1,735	203
Lawn & Garden Equipment & Supplies Stores	6,932	51,220	4,257
Florists	799	10,276	446
Building Material & Supplies Dealers	2,354	17,396	1,446
Food & Beverage Stores	433	4,118	250
General Merchandise Stores	1,183	11,426	685
Farm & Garden Equipment Wholesalers	525	2,467	289
Total (All Sectors)	40,684	336,431	22,755

Figure 7. Green Industry Economic Output Contributions to the Texas Economy in 2022

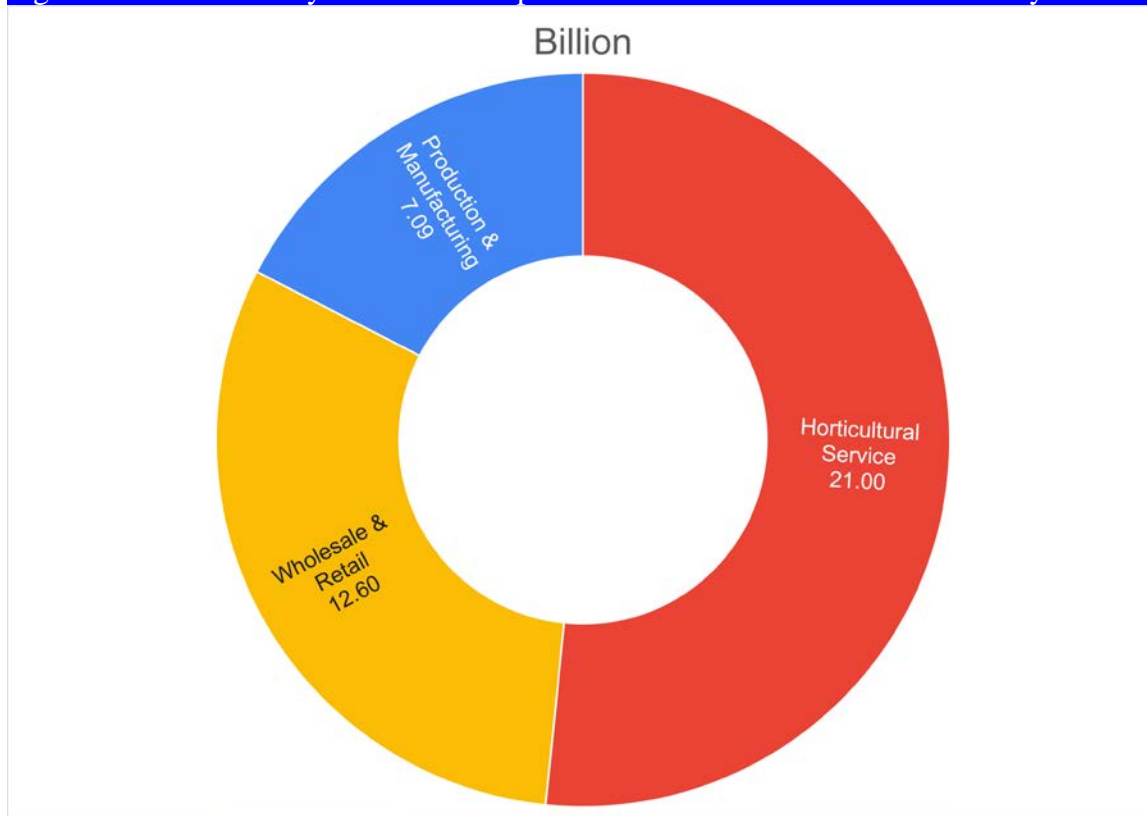
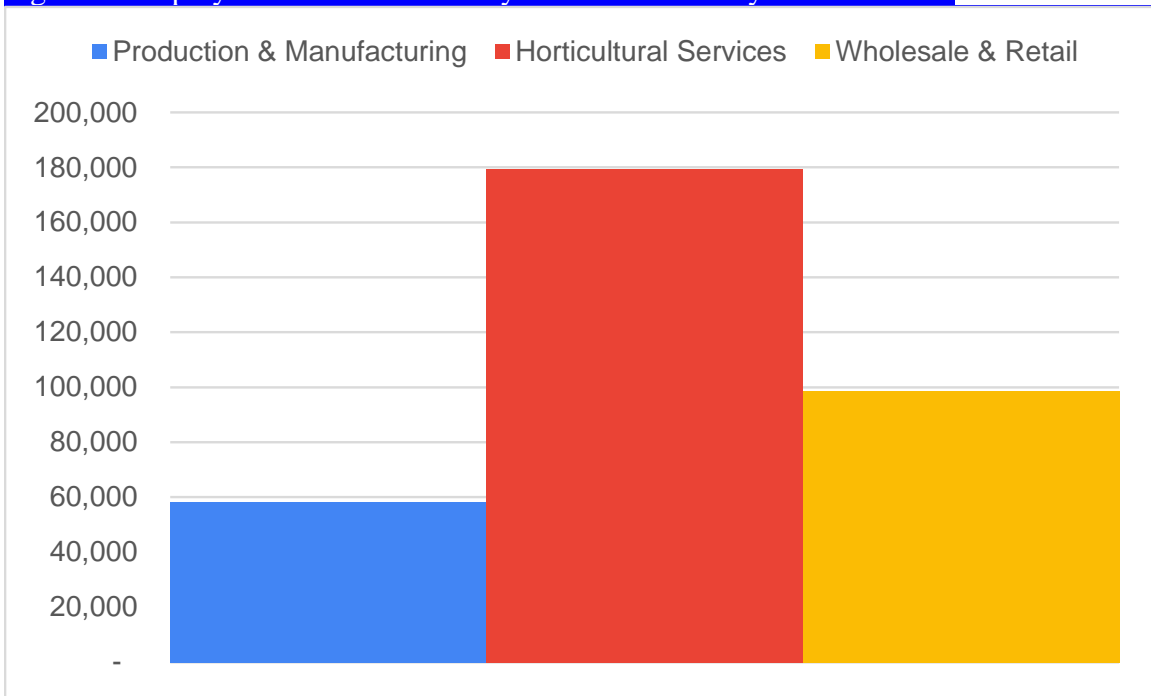


Figure 8. Employment Contributions by the Green Industry in Texas 2022



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 \$9.7 billion and \$9.1 billion respectively. Austin generated \$3.2 billion in output impact and San Antonio had \$2.8 of output economic impact.

Table 6. Economic Impact Contributions of the Green Industry in Texas by MSA 2022

	Output (\$Mn)	Employment (jobs)	Value Added (\$Mn)
Austin	3,187	26,351	1,782
Dallas-Fort Worth	9,659	79,874	5,402
Houston	9,085	75,125	5,081
San Antonio	2,765	22,865	1,547
Other	15,989	132,216	8,943
Total	40,684	336,431	22,755

*Figures may not sum due to rounding

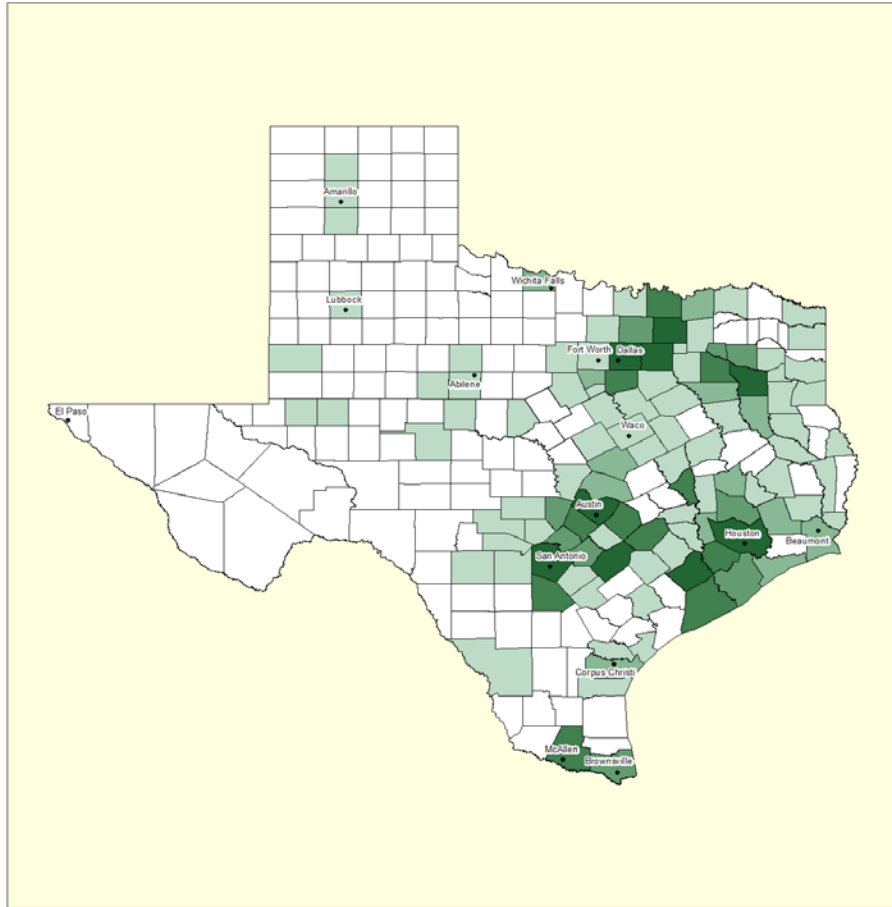
Measures of economic activity.

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, 2022.

County	Sales	County	Sales	County	Sales	County	Sales	County	Sales
Anderson	40,389,457	Deaf Smith	173,936,337	Hutchinson	4,795,685	Navarro	65,026,843	Val Verde	10,950,014
Andrews	2,853,649	Delta	97,545	Irion	-	Newton	799,494	Van Zandt	125,832,578
Angelina	109,232,171	Denton	937,563,684	Jack	163,669	Nolan	35,701,260	Victoria	114,560,213
Aransas	19,183,685	De Witt	-	Jackson	49,815,545	Nueces	299,608,305	Walker	58,745,289
Archer	26,069,904	Dickens	-	Jasper	44,012,154	Ochiltree	4,390,480	Waller	171,849,741
Armstrong	25,646	Dimmit	1,628,214	Jeff Davis	50,237	Oldham	-	Ward	5,366,678
Atascosa	94,841,549	Donley	219,109	Jefferson	185,902,576	Orange	41,455,497	Washington	94,661,069
Austin	115,162,254	Duval	407,327	Jim Hogg	165,530	Palo Pinto	24,637,104	Webb	115,256,611
Bailey	28,718,233	Eastland	23,977,405	Jim Wells	20,358,623	Panola	17,665,802	Wharton	391,876,684
Bandera	15,819,375	Ector	141,532,095	Johnson	358,905,299	Parker	213,560,232	Wheeler	435,802
Bastrop	145,683,601	Edwards	-	Jones	7,537,961	Parmer	18,592,998	Wichita	135,399,703
Baylor	126,492	Ellis	204,264,513	Karnes	3,335,067	Pecos	7,369,349	Wilbarger	7,005,603
Bee	29,305,098	El Paso	-	Kaufman	115,178,127	Polk	38,549,539	Willacy	5,183,229
Bell	313,180,102	Erath	72,123,220	Kendall	104,784,753	Potter	83,240,921	Williamson	756,609,867
Bexar	1,666,838,340	Falls	2,495,578	Kenedy	-	Presidio	581,510	Wilson	36,436,030
Blanco	49,311,005	Fannin	42,944,324	Kent	-	Rains	49,184,560	Winkler	218,135
Borden	-	Fayette	107,338,378	Kerr	69,280,533	Randall	182,357,145	Wise	89,100,406
Bosque	4,605,957	Fisher	33,474	Kimble	288,600	Reagan	243,252	Wood	110,146,587
Bowie	160,834,470	Floyd	231,435	King	-	Real	69,427	Yoakum	657,438
Brazoria	277,369,077	Foard	-	Kinney	0	Red River	621,519	Young	26,670,543
Brazos	444,714,467	Fort Bend	503,958,998	Kleberg	6,351,439	Reeves	3,107,242	Zapata	791,881
Brewster	6,194,659	Franklin	1,113,565	Knox	0	Refugio	266,272	Zavala	2,123,659
Briscoe	-	Freestone	6,233,513	Lamar	118,224,368	Roberts	-		
Brooks	338,055	Frio	9,298,876	Lamb	61,654,460	Robertson	13,161,354		
Brown	37,531,545	Gaines	67,072,185	Lampasas	22,207,836	Rockwall	106,052,697		
Burleson	59,745,025	Galveston	420,893,537	La Salle	-	Runnels	17,673,727		
Burnet	71,283,964	Garza	311,192	Lavaca	25,480,859	Rusk	28,089,223		
Caldwell	47,971,973	Gillespie	96,190,698	Lee	23,472,051	Sabine	2,683,986		
Calhoun	16,029,021	Glasscock	-	Leon	12,219,592	San Augustine	217,052		
Callahan	1,017,130	Goliad	789,686	Liberty	70,428,659	San Jacinto	2,426,429		
Cameron	192,469,533	Gonzales	147,367,357	Limestone	24,967,948	San Patricio	78,464,673		
Camp	1,733,263	Gray	25,044,288	Lipscomb	18,549	San Saba	9,072,492		
Carson	5,442,858	Grayson	210,524,284	Live Oak	16,058,652	Schleicher	13,704		
Cass	9,457,637	Gregg	220,930,676	Llano	11,603,500	Scurry	3,200,081		
Castro	104,471	Grimes	40,888,747	Loving	-	Shackelford	76,083		
Chambers	55,397,336	Guadalupe	203,552,036	Lubbock	325,873,280	Shelby	26,719,447		
Cherokee	70,624,537	Hale	97,035,101	Lynn	49,164	Sherman	143,139		
Childress	1,368,710	Hall	37,414	Madison	2,233,837	Smith	531,748,671		
Clay	375,990	Hamilton	5,736,904	Marion	429,888	Somervell	2,261,447		
Cochran	-	Hansford	21,105,022	Martin	656,501	Starr	14,728,133		
Coke	148,214	Hardeman	122,662	Mason	204,239	Stephens	3,727,235		
Coleman	599,624	Hardin	22,882,168	Matagorda	96,721,745	Sterling	-		
Collin	1,113,334,992	Harris	5,842,313,795	Maverick	23,139,612	Stonewall	30,958		
Collingsworth	-	Harrison	105,765,151	McCulloch	1,286,196	Sutton	46,142		
Colorado	41,178,408	Hartley	785,659	McLennan	316,575,145	Swisher	469,637		
Comal	254,255,287	Haskell	1,297,948	McMullen	-	Tarrant	2,484,599,310		
Comanche	21,846,833	Hays	253,394,674	Medina	101,788,207	Taylor	169,302,150		
Concho	-	Hemphill	185,009	Menard	12,017	Terrell	-		
Cooke	97,049,494	Henderson	114,898,785	Midland	150,102,882	Terry	53,415,268		
Coryell	22,363,537	Hidalgo	505,122,657	Milam	16,201,012	Throckmorton	70,444		
Cottle	1,812	Hill	55,355,052	Mills	893,238	Titus	41,735,903		
Crane	78,322	Hockley	64,161,363	Mitchell	135,657	Tom Green	102,807,104		
Crockett	95,204	Hood	76,965,185	Montague	16,539,142	Travis	1,672,684,610		
Crosby	16,375,560	Hopkins	69,486,821	Montgomery	565,390,863	Trinity	534,024		
Culberson	45,620	Houston	34,247,071	Moore	120,912,778	Tyler	13,542,086		
Dallam	43,962,406	Howard	29,692,603	Morris	4,340,585	Upshur	35,837,071		
Dallas	3,326,661,441	Hudspeth	71,088	Motley	-	Upton	245,938		
Dawson	451,966	Hunt	90,833,145	Nacogdoches	79,248,697	Uvalde	25,813,281		

Grower Sales



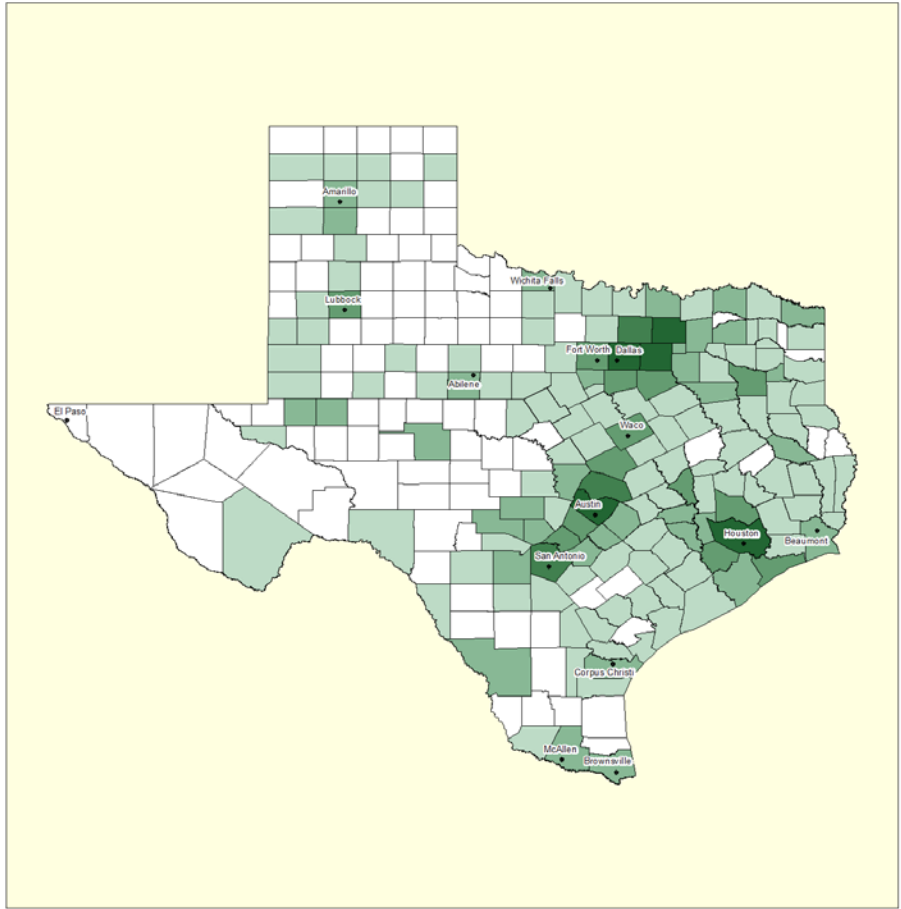
Grower Sales for 2022

- 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



Developed by Daniel Hanselka, Texas A&M AgriLife Extension Service

Landscaping Sales



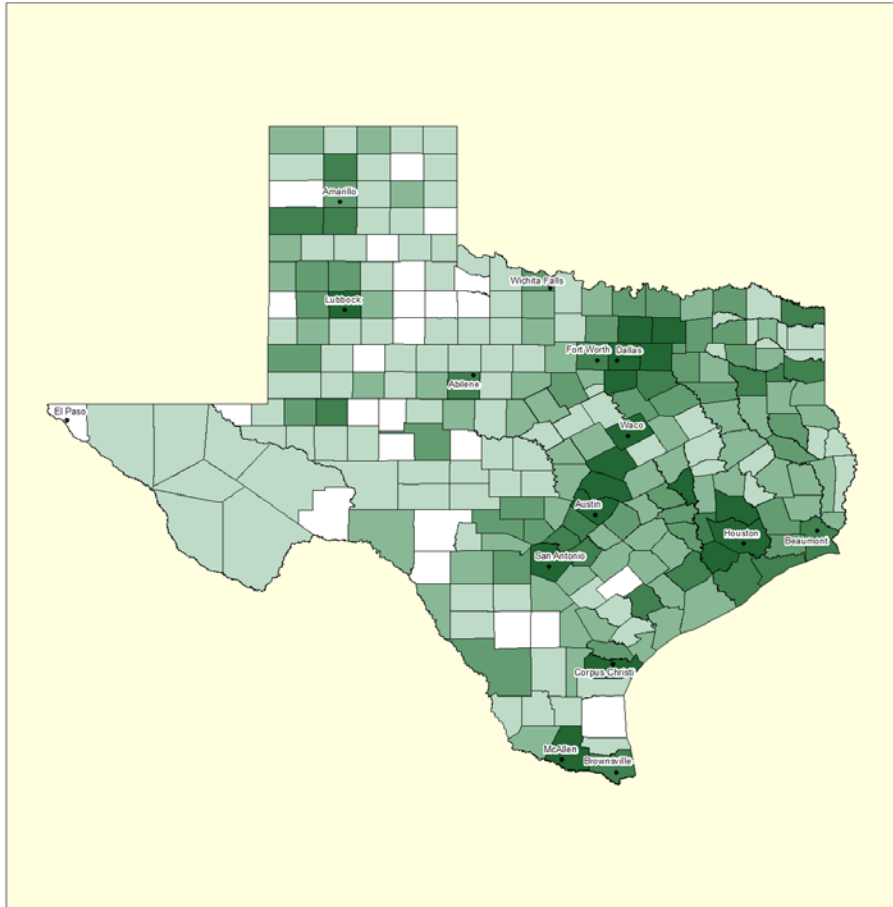
Landscaping Sales for 2022

- No sales reported
- \$10,000,000 or less
- \$10,000,001 - \$50,000,000
- \$50,000,001 - \$250,000,000
- \$250,000,001 - \$500,000,000
- More than \$500,000,000









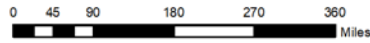
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Retail Sales



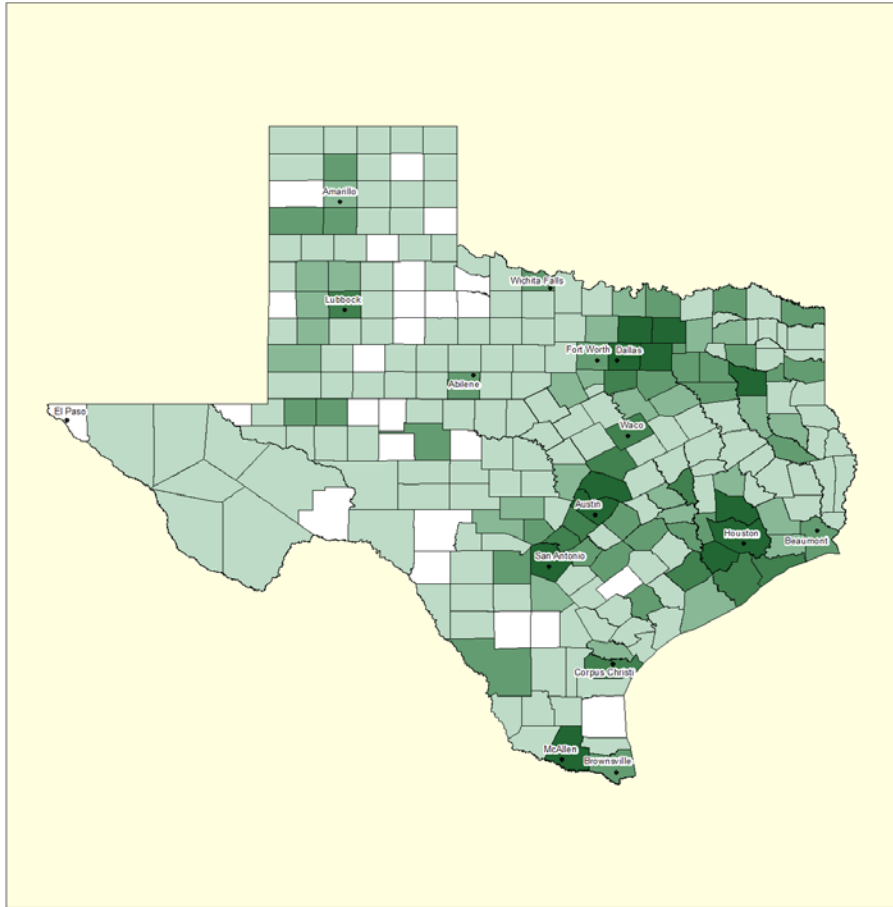
Retail Sales for 2022

-  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



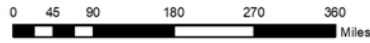
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Total Sales



Total Sales for 2022

- 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



Developed by Daniel Hanselka, Texas A&M AgriLife Extension Service