



# 2017 Minerals Yearbook

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**SAND AND GRAVEL, CONSTRUCTION [ADVANCE  
RELEASE]**

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# SAND AND GRAVEL, CONSTRUCTION

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A total of 880 million metric tons (Mt) of construction sand and gravel was produced for consumption in the United States in 2017, a slight decrease from the total production of 2016 but 34% less than the record high of 1.34 billion metric tons in 2006 (fig. 1). In 2017, the total value of construction sand and gravel produced in the United States was \$7.8 billion, an increase of 4% compared with that of 2016 (table 1). The average unit value for construction sand and gravel increased by 5% compared with the average unit value for 2016. Employment increased in 2017 from that of 2016 at operations identified as producing construction sand and gravel by the Mine Safety and Health Administration (MSHA).

Foreign trade in construction sand and gravel remained relatively small compared to U.S. consumption. In 2017, U.S. exports increased by 12% to 36,400 metric tons (t) compared with 32,400 t in 2016 but were still almost one-half of the amount exported in 2015, and the value increased to \$15.3 million (tables 1, 8). U.S. imports of construction sand and gravel increased by 87% to 6.5 Mt, and the value increased by 37% to \$62.2 million compared with 2016 totals (tables 1, 9). Apparent domestic consumption of construction sand and gravel, which is defined as production for consumption (sold or used) plus imports minus exports, decreased slightly compared with that of 2016.

Construction sand and gravel is a traditional basic building material and is one of the earliest materials used by humans for dwellings and later for outdoor areas such as paths, roadways, and other constructs. Despite the relatively low, but increasing, unit value of its basic products, the construction sand and gravel industry is a major contributor to, and an indicator of, the economic well-being of the Nation. Sand and gravel is very accessible and is widely used throughout the United States and the world. As sand and gravel has become less available owing to resource constraints or economic conditions in some locales, builders began to crush bedrock to produce a manufactured sand and gravel often referred to as crushed stone. Construction aggregates are defined as the combination of crushed stone and construction sand and gravel. Both mineral commodities usually are included in any review of the national or State aggregates industry. Information on crushed stone industry can be found in the crushed stone chapter of the U.S. Geological Survey (USGS) Minerals Yearbook, volume I, Metals and Minerals.

## Production

Domestic production data for construction sand and gravel were derived by the USGS from voluntary surveys of U.S. producers. In 2017, a total of 3,869 companies produced or sold construction sand and gravel from 5,947 operations with 6,825 pits, 359 dredging operations, and 342 sales and (or) distribution sites (table 7). Of the 5,947 active operations,

2,584 operations reported their production or sales to the USGS, and their total production was 407 Mt (46% of the U.S. total). Of the 2,584 reporting operations, 1,082 operations did not report a breakdown by end use. Their total production was 169 Mt (19% of the U.S. total) and is included in table 5 under “Unspecified, reported” uses.

Production from the nonresponding operations was estimated by using employment data provided by MSHA. The estimated output of the 3,363 nonrespondent operations was 473 Mt (54% of the U.S. total) and is included in table 5 under “Unspecified, estimated” uses.

A total of 993 construction sand and gravel operations were either idle or presumed idle in 2017 because no production report was received, and no employment information was available to estimate production. Since the 2016 survey, 270 operations have closed. Most of the idle or closed operations were small, temporary pits, some of which were operated by State or local governments.

A total of 342 operations reported that they were active sales yards, of which 168 were classified as sales or distribution yards only; a sales yard is defined as a fixed location that receives sand and gravel from a distant source and sells it at the yard. Additionally, 174 operations reported that they were either an open pit or a dredge combined with a sales yard that supplemented local production with material from a remote location. In 2017, the total quantity of construction sand and gravel sold from sales yards was 47 Mt. Information regarding the number of active operations, active quarries, types of processing plants, and number of sales yards by State is provided in table 7.

Construction sand and gravel was produced in every State. The 10 leading producing States were, in descending order of tonnage, California, Texas, Michigan, Minnesota, Arizona, Colorado, Washington, Ohio, Utah, and New York. The combined production of the 10 leading States decreased slightly compared with that of 2016 and accounted for 53% of the national total. The combined production of California and Texas increased slightly compared with that of 2016 and accounted for 21% of the national total (table 3).

A review of production by size of operation at the national level in 2017 indicated that 189 Mt of construction sand and gravel (21% of the total construction sand and gravel) was produced by 134 operations reporting production of more than 1 million metric tons per year (t/yr), 213 Mt was produced by 342 operations reporting production between 500,000 and 999,999 t/yr, and 372 Mt was produced by 1,818 operations reporting production between 100,000 and 499,999 t/yr. Operations that produced less than 500,000 t/yr accounted for 54% of total construction sand and gravel produced in the United States in 2017 (table 4A). By geographic region in

2017, the Midwest had 2,196 active operations, followed by the West with 1,782, the Northeast with 1,027, and the South with 904 (table 4B).

The leading U.S. producing companies in 2017 were, in descending order of tonnage, Oldcastle Materials, Inc.; Vulcan Materials Co.; LafargeHolcim Ltd.; Lehigh Hanson, Inc.; CEMEX S.A.B. de C.V.; MDU Resources Group, Inc.; Martin Marietta Materials, Inc.; Granite Construction Inc.; Teichert, Inc.; and Mitsubishi Cement Corp. (table 10). In 2017, the combined production of the top 10 companies decreased slightly to 203 Mt (23% of the national total). The combined production of the top 100 companies was 425 Mt (48% of the national total).

## Consumption

Construction sand and gravel production reported to the USGS is material that was either sold to other companies or consumers or was used by producers. Stockpiled production is not included in the reported quantities. The “sold or used” tonnage, therefore, represents the amount of production including some imports released for domestic consumption or export in a given year. Because some of the construction sand and gravel producers did not report a breakdown by end use, their total production was included in the “Unspecified, reported” use category. The estimated production of nonrespondents was included in the “Unspecified, estimated” use category (table 5).

In 2017, U.S. apparent consumption of construction sand and gravel, which is defined as U.S. production for consumption, sold or used, plus imports minus exports, was 886 Mt, a slight decrease compared with the apparent consumption in 2016. Of the 880 Mt of construction sand and gravel produced for consumption, 73% was reported or estimated without a breakdown by end use (table 5). Of the remaining construction sand and gravel produced for consumption, 46% was used as concrete aggregate; 21% was used for road base and coverings; 13%, for construction fill; 12%, for asphaltic concrete aggregate and other bituminous mixtures; 4%, for other miscellaneous uses, and the remainder was used for concrete products, filtration, golf course maintenance, plaster and gunite sands, railroad ballast, road stabilization, roofing granules, and snow and ice control.

The reported percentage consumption patterns for construction sand and gravel exclude the unspecified uses. In any marketing or use-pattern analysis based on quantity distribution, the total quantities included in “Unspecified uses” may be distributed among the reported use categories by applying the above percentages.

The value of the total construction put in place in 2017 increased by 5%, compared with that of 2016, to \$1.25 trillion. The value of total private construction increased by 7% to \$963 billion. The value of total public construction decreased by 3% to \$283 billion (U.S. Census Bureau, 2018).

## Transportation

No means of transportation was reported by the producers for 673 Mt of the 880 Mt of construction sand and gravel produced for consumption in 2017. Of the remaining 206 Mt of construction sand and gravel, 80% was reported as being

transported by truck from the pit or the processing plant to the first point of sale or use, 6% by waterway, and 1% by rail. About 21.3 Mt of the specified production was reported as not having been transported and, therefore, is assumed to have been used onsite.

## Prices

Prices in this chapter are the annual average free-on-board plant prices, usually at the first point of sale or captive use, as reported by construction-sand-and-gravel-producing companies. This value does not include transportation from the plant or yard to the consumer. It does, however, include all costs of mining, processing, in-plant transportation, overhead, and profit. In 2017, 941 operations responding to the annual survey reported the dollar value of their production for the current and previous year. The average unit value for operations reporting production and value was \$9.71 per metric ton in 2017, which was an increase of 4% compared with the reported average unit value of \$9.33 per metric ton in 2016. Leading U.S. producers increased prices by 3% to 6% in 2017 compared with prices in 2016. For those operations that reported production only, the unit values for specific end uses were estimated on the basis of reported values for those specific uses in the same State. The reported State average unit value was used in the estimation for operations reporting total production only and for operations that did not respond to the survey.

## Foreign Trade

The widespread distribution of domestic sand and gravel deposits and the high cost of transportation limit foreign trade to mostly local transactions across international boundaries. U.S. imports and exports were equivalent to less than 1% of domestic consumption.

**Exports.**—Exports of sand and gravel increased by 12% to 36,400 t compared with 32,400 t in 2016, and the value increased by 10% to \$15.3 million (table 1). Canada, which was the leading destination, received 5% of the total sand exports and 61% of total gravel exports. The Bahamas, the second-ranked destination, received 9% of the total sand exports and 12% of total gravel exports (table 8). The average unit value of sand and gravel exports in 2017 was \$420 per ton, a slight decrease from \$429 per ton in 2016. All these values may have been relatively high because some higher grade sand and gravel, such as industrial sand and gravel (especially hydraulic fracturing sand used in natural gas and oil drilling), may have been misclassified as construction sand and gravel.

**Imports.**—Imports of construction sand and gravel increased by 87% to 6.52 Mt, and the value increased by 37% to \$62.2 million (table 1). Canada was the leading source of construction sand and gravel imports, with 95% of the total quantity (table 9). Mexico supplied 3%, and the remainder was supplied by several other countries. Based on detailed import data from the U.S. Census Bureau, imports of gravel from Canada increased by 53% to 2.8 Mt in 2016 from 1.8 Mt in 2015. In 2017, imports of gravel from Canada increased by 88% to 5.2 Mt. Imports of gravel from Canada through the Charleston, SC, customs district increased from none in 2015

to 0.8 Mt in 2016 and 2.9 Mt in 2017. This customs district received 56% of the gravel imported from Canada and 45% of total imports of construction sand and gravel. The average unit value of sand and gravel imports in 2017 was \$9.54 per ton, down from \$13.06 per ton in 2016. The average unit value of sand and gravel imports from Canada in 2017 was \$7.64 per ton, down from \$9.95 per ton in 2016. The average unit value of gravel imports from Canada through South Carolina in 2017 was \$4.43 per ton, unchanged from that of 2016.

## Outlook

The aggregates industry is a cyclical business, reacting to the levels of activity in public infrastructure projects, commercial and residential construction markets, and other types of construction. The residential construction slowdown in the United States that began in 2006 was well documented and led to decreased consumption of construction sand and gravel. After 4 years of decline, residential construction appeared to level off in late 2010. Construction sand and gravel production remained almost flat starting in 2010 until increasing by 6% in 2015 compared with that of 2014, and production has remained relatively stable since 2015 (fig. 1). Construction sand and gravel production is expected to increase by 7% in 2018 to about 960 Mt (Willett, 2019).

## References Cited

- U.S. Census Bureau, 2018, Annual value of construction put in place 2008–2017: U.S. Census Bureau, January 30. (Accessed July 7, 2018, via [http://www.census.gov/construction/c30/historical\\_data.html](http://www.census.gov/construction/c30/historical_data.html).)
- Willett, J.C., 2019, Crushed stone and sand and gravel in the fourth quarter 2018: U.S. Geological Survey Mineral Industry Surveys, March, 14 p. (Accessed November 14, 2019, at <https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/s3fs-public/atoms/files/mis-2018q4-stonc.pdf>.)

## GENERAL SOURCES OF INFORMATION

### U.S. Geological Survey Publications

Crushed Stone and Sand and Gravel. Mineral Industry Surveys, quarterly.

- Historical Statistics for Mineral and Material Commodities in the United States. Data Series 140.
- Natural Aggregate—Building America's Future. Circular 1110, 1990.
- Natural Aggregates—Foundation of America's Future. Fact Sheet FS 144–97, 1997.
- Natural Aggregates of the Conterminous United States. Bulletin 1594, 1988.
- Sand and Gravel. Ch. in United States Mineral Resources, Professional Paper 820, 1973.
- Sand and Gravel, Construction. Ch. in Mineral Commodity Summaries, annual.
- Stone, Crushed. Ch. in Mineral Commodity Summaries, annual.
- Stone, Crushed. Ch. in Minerals Yearbook, annual.

### Other

- Aggregates Handbook. National Stone Association, 1991.
- Aggregates Manager.
- Aggregates—Sand, Gravel, & Crushed Rock Aggregates for Construction Purposes. The Geological Society [United Kingdom], 1985.
- Canadian Aggregates.
- Handbook of Concrete Aggregates. Noyes Publications, 1983.
- Geology of the Nonmetallics. Metal Bulletin Inc., 1984.
- Industrial Minerals.
- National Stone, Sand and Gravel Association.
- Pit & Quarry.
- Rock Products.
- Sand and Gravel. Ch. in Industrial Minerals and Rocks (7th ed.), Society for Mining, Metallurgy, and Exploration, Inc., 2006.
- Sand and Gravel. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.
- Stone, Sand & Gravel Review.

TABLE 1  
SALIENT U.S. CONSTRUCTION SAND AND GRAVEL STATISTICS<sup>1</sup>

(Thousand metric tons and thousand dollars)

	2013	2014	2015	2016	2017
<b>Sold or used by producers:<sup>2</sup></b>					
Quantity	823,000	829,000 <sup>r</sup>	880,000 <sup>r</sup>	887,000 <sup>r</sup>	880,000
Value	6,390,000	6,660,000 <sup>r</sup>	7,290,000	7,460,000	7,770,000
<b>Exports:</b>					
Quantity	58	87	70	32	36
Value	15,800	21,800	21,700	13,900	15,300
<b>Imports for consumption:</b>					
Quantity	3,940	3,930	3,890	3,490	6,520
Value	42,500	46,100	61,400	45,500	62,200
Average number of employees <sup>3</sup>	36,400	34,600	34,800	35,300	36,500

<sup>r</sup>Revised.

<sup>1</sup>Table includes data available through November 18, 2019. Data are rounded to no more than three significant digits.

<sup>2</sup>Does not include American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands.

<sup>3</sup>Including office staff. Source: Mine Safety and Health Administration.

TABLE 2  
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS  
IN THE UNITED STATES, BY GEOGRAPHIC DIVISION<sup>1,2</sup>

Region and division	2016 <sup>3</sup>		2017	
	Quantity (thousand metric tons)	Value (thousands)	Quantity (thousand metric tons)	Value (thousands)
<b>Northeast:</b>				
New England	38,300	\$334,000	37,400	\$326,000
Middle Atlantic	52,000	513,000	52,300	521,000
<b>Midwest:</b>				
East North Central	140,000	977,000	141,000	1,010,000
West North Central	117,000	712,000	112,000	711,000
<b>South:</b>				
South Atlantic	61,400	568,000	61,200	586,000
East South Central	37,900	261,000	38,300	278,000
West South Central	119,000	1,150,000	113,000	1,200,000
<b>West:</b>				
Mountain	169,000	1,340,000	170,000	1,380,000
Pacific	152,000	1,600,000	154,000	1,760,000
Total	887,000	7,460,000	880,000	7,770,000

<sup>1</sup>Table includes data available through November 18, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Does not include American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands.

<sup>3</sup>Estimated quantities have been recalculated.

TABLE 3  
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN  
THE UNITED STATES, BY STATE<sup>1</sup>

State	2016 <sup>2</sup>			2017		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	11,400	\$76,500	\$6.74	12,000	\$93,700	\$7.80
Alaska	8,670	74,300	8.57	5,080	43,600	8.58
Arizona	40,300	370,000	9.16	41,700	395,000	9.47
Arkansas	7,510	66,800	8.89	7,760	73,500	9.47
California	95,400	1,120,000	11.75	100,000	1,280,000	12.78
Colorado	34,900	282,000	8.09	34,000	284,000	8.35
Connecticut	5,330	51,800	9.71	4,810	46,900	9.75
Delaware	2,810	25,600	9.12	2,290	21,700	9.50
Florida	19,100	204,000	10.69	18,100	201,000	11.10
Georgia	6,360	43,800	6.90	6,720	47,700	7.09
Hawaii	357	7,720	21.63	449	9,170	20.43
Idaho	15,100	87,600	5.79	16,000	95,700	5.98
Illinois	20,600	139,000	6.77	21,500	152,000	7.07
Indiana	17,500	133,000	7.60	17,100	127,000	7.39
Iowa	14,900	121,000	8.13	16,100	144,000	8.94
Kansas	10,100	59,500	5.92	9,610	52,900	5.50
Kentucky	8,780	42,000	4.79	7,950	38,100	4.80
Louisiana	17,200	198,000	11.51	14,500	168,000	11.60
Maine	8,720	71,800	8.24	8,190	63,900	7.80
Maryland	7,380	92,800	12.59	7,630	94,700	12.42
Massachusetts	9,830	89,600	9.11	9,420	88,100	9.35
Michigan	41,300	249,000	6.03	42,900	261,000	6.09
Minnesota	46,400	225,000	4.85	42,700	219,000	5.14
Mississippi	10,300	85,000	8.23	11,000	90,400	8.19
Missouri	9,830	70,500	7.17	8,880	67,200	7.56
Montana	11,400	91,000	8.01	10,400	84,400	8.09
Nebraska	12,700	94,200	7.44	11,700	87,600	7.47
Nevada	17,500	109,000	6.22	19,000	118,000	6.23
New Hampshire	6,910	57,500	8.32	7,240	59,300	8.19
New Jersey	12,400	103,000	8.28	13,400	107,000	7.94
New Mexico	9,500	85,000	8.94	9,290	89,600	9.64
New York	30,600	317,000	10.33	30,300	325,000	10.71
North Carolina	8,120	52,900	6.51	8,660	54,500	6.29
North Dakota	13,100	91,400	6.95	12,200	89,400	7.31
Ohio	33,400	273,000	8.18	32,300	284,000	8.78
Oklahoma	10,200	88,400	8.69	9,240	86,100	9.32
Oregon	12,400	111,000	8.96	14,900	145,000	9.69
Pennsylvania	8,940	94,100	10.53	8,600	89,900	10.45
Rhode Island	2,140	26,900	12.54	2,350	29,000	12.31
South Carolina	8,850	51,000	5.77	8,870	56,400	6.36
South Dakota	10,200	50,000	4.89	10,800	51,100	4.74
Tennessee	7,450	57,500	7.72	7,340	55,900	7.61
Texas	84,200	800,000	9.51	82,000	869,000	10.60
Utah	31,600	236,000	7.46	31,100	241,000	7.74
Vermont	5,390	36,400	6.76	5,440	38,900	7.15
Virginia	8,230	93,200	11.33	8,450	105,000	12.47
Washington	35,400	284,000	8.02	33,300	277,000	8.32
West Virginia	556	4,720	8.49	501	4,250	8.49
Wisconsin	27,100	183,000	6.76	27,100	185,000	6.82
Wyoming	8,910	81,100	9.09	8,410	76,100	9.06
Total or average	887,000	7,460,000	8.41	880,000	7,770,000	8.83

<sup>1</sup>Table includes data available through November 18, 2019. Data are rounded to no more than three significant digits, except unit values; may not add to totals shown.

<sup>2</sup>Estimated quantities have been recalculated.

TABLE 4A  
CONSTRUCTION SAND AND GRAVEL PRODUCTION IN THE UNITED STATES, BY SIZE OF OPERATION<sup>1</sup>

Size range (metric tons)	2016 <sup>2</sup>				2017			
	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total
Less than 25,000	1,993	32.1	17,600	2.0	1,793	30.3	16,000	1.8
25,000 to 49,999	876	14.1	28,800	3.2	866	14.7	28,200	3.2
50,000 to 99,999	1,001	16.1	64,800	7.3	956	16.2	62,500	7.1
100,000 to 199,999	993	16.0	129,000	14.5	925	15.7	120,000	13.6
200,000 to 299,999	436	7.0	97,400	11.0	464	7.9	103,000	11.7
300,000 to 399,999	267	4.3	83,400	9.4	274	4.6	86,200	9.8
400,000 to 499,999	177	2.9	71,000	8.0	155	2.6	63,100	7.2
500,000 to 599,999	111	1.8	55,400	6.2	125	2.1	61,800	7.0
600,000 to 699,999	87	1.4	50,600	5.7	80	1.4	46,800	5.3
700,000 to 799,999	40	0.6	27,100	3.1	52	0.9	35,500	4.0
800,000 to 899,999	60	1.0	45,900	5.2	49	0.8	37,600	4.3
900,000 to 999,999	28	0.5	24,200	2.7	36	0.6	30,900	3.5
1,000,000 to 1,499,999	79	1.3	85,500	9.6	81	1.4	87,600	10.0
1,500,000 and more	54	0.9	106,000	12.0	53	0.9	101,000	11.5
Total	6,202	100	887,000	100	5,909	100	880,000	100

<sup>1</sup>Table includes data available through November 18, 2019. Production data are rounded to no more than three significant digits except "Number of operations"; may not add to totals shown. Does not include recycling plants.

<sup>2</sup>Estimated quantities have been recalculated.

TABLE 4B  
CONSTRUCTION SAND AND GRAVEL PRODUCTION IN THE UNITED STATES IN 2017, BY REGION  
AND SIZE OF OPERATION<sup>1</sup>

Size range (metric tons)	Northeast				Midwest			
	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total
Less than 25,000	423	41.2	3,690	4.1	662	30.2	6,130	2.4
25,000 to 49,999	177	17.2	5,630	6.3	353	16.1	11,500	4.5
50,000 to 99,999	147	14.3	9,650	10.8	430	19.6	28,200	11.1
100,000 to 199,999	138	13.4	18,100	20.2	356	16.2	45,000	17.8
200,000 to 299,999	67	6.5	14,500	16.2	134	6.1	29,700	11.7
300,000 to 399,999	33	3.2	10,400	11.5	102	4.6	31,900	12.6
400,000 to 499,999	17	1.7	6,880	7.7	47	2.1	18,800	7.4
500,000 to 599,999	5	0.5	2,420	2.7	34	1.5	16,700	6.6
600,000 to 699,999	2	0.2	1,210	1.3	30	1.4	17,600	7.0
700,000 to 799,999	7	0.7	4,710	5.2	9	0.4	6,020	2.4
800,000 to 899,999	1	0.1	741	0.8	12	0.5	9,130	3.6
900,000 to 999,999	1	0.1	903	1.0	10	0.5	8,520	3.4
1,000,000 to 1,499,999	6	0.6	6,040	6.7	9	0.4	10,200	4.0
1,500,000 and more	3	0.3	4,930	5.5	8	0.4	13,600	5.4
Total	1,027	100	89,800	100	2,196	100	253,000	100

Size range (metric tons)	South				West			
	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total
Less than 25,000	176	19.5	1,380	0.6	532	29.9	4,750	1.5
25,000 to 49,999	85	9.4	2,810	1.3	251	14.1	8,290	2.6
50,000 to 99,999	105	11.6	6,760	3.2	274	15.4	17,900	5.5
100,000 to 199,999	170	18.8	22,100	10.4	261	14.6	34,200	10.5
200,000 to 299,999	106	11.7	23,600	11.1	157	8.8	35,100	10.8
300,000 to 399,999	76	8.4	24,400	11.5	63	3.5	19,500	6.0
400,000 to 499,999	42	4.6	17,300	8.1	49	2.7	20,200	6.2
500,000 to 599,999	38	4.2	19,000	8.9	48	2.7	23,700	7.3
600,000 to 699,999	19	2.1	11,000	5.2	29	1.6	17,000	5.2
700,000 to 799,999	18	2.0	12,500	5.9	18	1.0	12,300	3.8
800,000 to 899,999	23	2.5	17,600	8.3	13	0.7	10,100	3.1
900,000 to 999,999	11	1.2	9,530	4.5	14	0.8	11,900	3.7
1,000,000 to 1,499,999	27	3.0	29,200	13.7	39	2.2	42,100	13.0
1,500,000 and more	8	0.9	15,600	7.4	34	1.9	67,000	20.7
Total	904	100	213,000	100	1,782	100	324,000	100

<sup>1</sup>Table includes data available through November 18, 2019. Production data are rounded to no more than three significant digits except "Number of operations"; may not add to totals shown.

TABLE 5  
CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN THE UNITED STATES, BY USE<sup>1</sup>

Use	2016 <sup>2</sup>			2017		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)	99,200	\$918,000	\$9.26	111,000	\$1,120,000	\$10.11
Plaster and gunitite sands	1,880	22,200	11.81	1,950	26,300	13.48
Concrete products (blocks, bricks, pipe, decorative, and so forth)	2,000	19,400	9.66	2,010	23,200	11.58
Asphaltic concrete aggregates and other bituminous mixtures	27,900	292,000	10.49	29,200	316,000	10.79
Road base and coverings	53,400	394,000	7.38	50,100	383,000	7.65
Road stabilization, cement	1,220	10,900	8.96	852	8,490	9.97
Road stabilization, lime	589	5,290	8.99	726	7,810	10.75
Fill	27,200	192,000	7.05	30,400	217,000	7.14
Snow and ice control	1,830	15,100	8.30	2,020	15,300	7.58
Railroad ballast	132	2,180	16.57	231	3,200	13.82
Roofing granules	W	W	W	--	--	--
Filtration	92	922	10.02	30	426	14.39
Golf course maintenance sand	86	927	10.84	64	2,060	31.96
Other miscellaneous uses and specified uses not listed	8,850	93,000	10.50	9,690	110,000	11.31
Unspecified: <sup>3</sup>						
Reported	180,000	1,520,000	8.41	169,000	1,510,000	8.89
Estimated	482,000	3,980,000	8.24	473,000	4,030,000	8.54
Total or average	887,000	7,460,000	8.41	880,000	7,770,000	8.83

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses and specified uses not listed." -- Zero.

<sup>1</sup>Table includes data available through November 18, 2019. Data are rounded to no more than three significant digits, except unit values; may not add to totals shown.

<sup>2</sup>Estimated quantities have been recalculated.

<sup>3</sup>Reported and estimated production without a breakdown by end use.

TABLE 6  
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN 2017, BY STATE AND USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

State	Concrete aggregates (including concrete sand)		Plaster and gunitite sands		Concrete products (blocks, bricks, pipe decorative, and so forth)		Asphaltic concrete aggregates and other bituminous mixtures		Road base and coverings <sup>2</sup>	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Alabama	2,870	\$24,100	--	--	W	W	21	\$118	W	W
Alaska	130	993	--	--	W	W	139	1,620	263	\$1,800
Arizona	4,240	49,800	82	\$1,230	W	W	2,300	33,500	3,970	25,900
Arkansas	953	9,480	--	--	--	--	108	1,240	192	1,500
California	21,400	298,000	848	11,300	W	W	7,380	102,000	4,460	46,500
Colorado	2,810	27,100	W	W	W	W	281	2,040	2,540	19,800
Connecticut	335	3,200	--	--	W	W	W	W	128	1,620
Delaware	536	6,090	--	--	W	W	W	W	W	W
Florida	W	W	W	W	W	W	W	W	W	W
Georgia	320	2,470	--	--	W	W	--	--	24	140
Hawaii	W	W	--	--	W	W	--	--	W	W
Idaho	413	4,270	W	W	W	W	203	2,210	3,640	19,600
Illinois	5,120	36,700	W	W	W	W	569	2,900	595	5,960
Indiana	3,360	22,500	W	W	W	W	1,000	10,800	294	2,840
Iowa	1,280	11,500	9	77	--	--	68	542	1,230	5,920
Kansas	811	4,950	W	W	--	--	58	285	595	3,400
Kentucky	W	W	23	207	W	W	99	886	W	W
Louisiana	1,330	13,800	W	W	--	--	W	W	W	W
Maine	485	2,460	--	--	W	W	W	W	698	6,000
Maryland	1,580	15,600	W	W	W	W	W	W	W	W
Massachusetts	1,170	15,700	--	--	W	W	W	W	531	4,700
Michigan	2,200	16,800	W	W	W	W	1,580	11,000	2,490	18,500
Minnesota	3,990	21,400	21	308	W	W	2,460	17,300	4,380	18,900
Mississippi	663	4,830	W	W	--	--	W	W	W	W
Missouri	3,260	23,200	--	--	W	W	--	--	4	26
Montana	600	7,080	--	--	W	W	270	2,650	1,810	15,600
Nebraska	1,040	6,500	7	26	25	\$134	305	2,800	1,190	12,100
Nevada	915	9,560	W	W	W	W	W	W	2,130	14,600
New Hampshire	85	854	24	348	--	--	326	2,400	1,020	8,820
New Jersey	2,980	22,700	W	W	W	W	1,380	3,380	W	W
New Mexico	673	10,600	15	137	W	W	717	9,730	631	6,220
New York	2,770	38,400	198	2,930	2	20	734	7,660	2,240	17,800
North Carolina	2,260	15,700	W	W	W	W	240	1,100	W	W
North Dakota	156	1,650	--	--	--	--	367	4,000	1,010	4,930
Ohio	8,270	75,200	33	507	101	713	1,600	12,000	1,950	20,800
Oklahoma	1,230	15,100	W	W	--	--	219	1,420	W	W
Oregon	1,990	22,700	W	W	W	W	517	5,390	2,290	20,800
Pennsylvania	621	6,010	15	211	W	W	83	532	338	3,650
Rhode Island	217	3,740	--	--	W	W	W	W	W	W
South Carolina	1,410	9,540	--	--	W	W	W	W	W	W
South Dakota	334	1,890	W	W	--	--	--	--	1,350	6,820
Tennessee	1,400	8,140	--	--	W	W	W	W	W	W
Texas	10,100	109,000	363	4,340	W	W	567	7,510	985	7,790
Utah	1,960	21,000	W	W	1	12	1,050	11,500	2,840	19,100
Vermont	W	W	--	--	--	--	61	250	440	2,750
Virginia	836	14,000	W	W	W	W	482	6,640	W	W
Washington	4,200	41,300	W	W	W	W	1,320	10,300	1,720	18,400
West Virginia	--	--	--	--	--	--	--	--	--	--
Wisconsin	1,110	7,630	--	--	W	W	619	15,100	901	4,170
Wyoming	404	4,990	W	W	W	W	72	1,060	1,090	8,200
Total	105,000	1,070,000	1,640	21,700	130	879	27,200	292,000	50,000	376,000
Total withheld	5,710	50,200	313	4,620	1,880	22,400	2,050	23,800	1,730	24,100
Grand total	111,000	1,120,000	1,950	26,300	2,010	23,200	29,200	316,000	51,700	400,000

See footnotes at end of table.

TABLE 6—Continued  
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN 2017, BY STATE AND USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

State	Fill		Snow and ice control		Railroad ballast		Other uses <sup>3</sup>		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Alabama	70	\$368	W	W	--	--	8,900	\$68,700	12,000	\$93,700
Alaska	W	W	6	\$66	--	--	3,190	27,600	5,080	43,600
Arizona	652	5,190	W	W	28	\$509	30,200	276,000	41,700	395,000
Arkansas	W	W	W	W	--	--	6,390	60,400	7,760	73,500
California	3,250	40,800	17	138	W	W	62,500	778,000	100,000	1,280,000
Colorado	768	3,100	11	360	W	W	27,500	231,000	34,000	284,000
Connecticut	171	731	101	1,070	--	--	4,030	39,800	4,810	46,900
Delaware	710	4,040	--	--	--	--	954	10,500	2,290	21,700
Florida	2,030	22,400	--	--	--	--	12,900	136,000	18,100	201,000
Georgia	W	W	--	--	--	--	6,340	44,700	6,720	47,700
Hawaii	--	--	--	--	--	--	359	5,750	449	9,170
Idaho	253	748	W	W	W	W	11,500	68,600	16,000	95,700
Illinois	469	2,880	11	89	--	--	14,700	103,000	21,500	152,000
Indiana	1,050	6,330	27	159	--	--	11,400	83,400	17,100	127,000
Iowa	427	2,530	47	563	--	--	13,100	123,000	16,100	144,000
Kansas	220	580	W	W	--	--	7,870	43,300	9,610	52,900
Kentucky	105	848	--	--	--	--	4,530	23,300	7,950	38,100
Louisiana	326	2,440	--	--	W	W	12,200	137,000	14,500	168,000
Maine	218	937	109	751	8	107	6,580	52,500	8,190	63,900
Maryland	223	2,890	W	W	--	--	5,720	75,000	7,630	94,700
Massachusetts	641	2,750	59	1,500	--	--	6,900	62,600	9,420	88,100
Michigan	3,590	13,800	128	668	19	168	32,800	200,000	42,900	261,000
Minnesota	893	3,680	44	274	W	W	30,800	156,000	42,700	219,000
Mississippi	183	1,350	--	--	--	--	10,100	83,200	11,000	90,400
Missouri	26	168	W	W	--	--	5,580	43,700	8,880	67,200
Montana	62	465	42	292	--	--	7,650	58,400	10,400	84,400
Nebraska	211	836	15	121	--	--	8,930	65,000	11,700	87,600
Nevada	1,100	6,400	65	695	--	--	13,900	77,500	19,000	118,000
New Hampshire	301	1,340	82	761	41	476	5,360	44,300	7,240	59,300
New Jersey	143	1,300	5	74	--	--	8,650	77,200	13,400	107,000
New Mexico	486	4,720	W	W	23	303	6,670	56,900	9,290	89,600
New York	642	3,680	709	4,310	--	--	23,000	250,000	30,300	325,000
North Carolina	1,070	4,870	6	52	--	--	5,050	32,300	8,660	54,500
North Dakota	69	312	4	37	--	--	10,600	78,500	12,200	89,400
Ohio	1,250	11,300	46	250	--	--	19,100	163,000	32,300	284,000
Oklahoma	462	2,130	W	W	--	--	7,160	66,000	9,240	86,100
Oregon	422	2,780	W	W	13	175	9,700	92,900	14,900	145,000
Pennsylvania	W	W	77	636	--	--	7,250	76,400	8,600	89,900
Rhode Island	92	760	9	151	--	--	1,420	16,200	2,350	29,000
South Carolina	692	2,000	--	--	--	--	6,360	42,900	8,870	56,400
South Dakota	92	251	W	W	--	--	9,010	42,100	10,800	51,100
Tennessee	W	W	--	--	--	--	5,350	40,300	7,340	55,900
Texas	1,810	15,200	--	--	W	W	68,100	725,000	82,000	869,000
Utah	768	3,430	W	W	W	W	24,400	185,000	31,100	241,000
Vermont	W	W	26	140	--	--	4,790	35,000	5,440	38,900
Virginia	1,280	11,600	4	39	--	--	5,790	72,300	8,450	105,000
Washington	630	4,730	41	183	24	286	25,400	202,000	33,300	277,000
West Virginia	--	--	--	--	--	--	501	4,250	501	4,250
Wisconsin	544	2,450	W	W	--	--	23,900	155,000	27,100	185,000
Wyoming	128	599	12	154	--	--	6,700	61,100	8,410	76,100
Total	28,500	200,000	1,700	13,500	157	2,020	652,000	5,650,000	XX	XX
Total withheld	1,900	17,400	317	1,770	75	1,170	--	--	XX	XX
Grand total	30,400	217,000	2,020	15,300	231	3,200	652,000	5,650,000	880,000	7,770,000

W Withheld to avoid disclosing company proprietary data; included in "Total withheld." XX Not applicable. -- Zero.

<sup>1</sup>Table includes data available through November 18, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes road and other stabilization (cement and lime).

<sup>3</sup>Includes reported and estimated production without a breakdown by end use.

TABLE 7  
CONSTRUCTION SAND AND GRAVEL OPERATIONS IN THE UNITED STATES IN 2017, BY STATE<sup>1</sup>

State	Active operations	Active pits	Dredging operations	Processing plants				Sales yards
				Stationary	Portable	Stationary and portable	None or unspecified	
Alabama	57	56	7	18	29	--	3	--
Alaska	73	84	1	25	32	6	9	9
Arizona	158	172	--	67	62	12	17	15
Arkansas	40	43	2	22	14	--	2	2
California	289	297	5	154	94	17	19	17
Colorado	238	320	--	73	117	8	40	10
Connecticut	55	61	2	19	27	4	3	6
Delaware	12	12	1	8	3	--	--	1
Florida	52	54	6	23	21	--	2	3
Georgia	35	34	5	14	15	--	1	1
Hawaii	9	9	--	2	6	--	1	1
Idaho	159	192	2	48	81	6	22	8
Illinois	99	96	18	47	21	2	11	5
Indiana	114	118	10	65	27	6	6	10
Iowa	145	160	15	36	69	8	17	5
Kansas	110	133	24	24	44	4	14	3
Kentucky	17	15	4	6	5	1	1	3
Louisiana	96	89	25	33	13	2	23	12
Maine	191	195	2	57	77	9	46	11
Maryland	37	38	1	22	5	2	7	8
Massachusetts	89	97	6	46	26	2	9	9
Michigan	339	392	15	122	133	15	54	16
Minnesota	420	588	9	164	159	21	67	12
Mississippi	51	55	6	21	21	--	3	5
Missouri	71	79	20	29	13	1	8	1
Montana	150	174	1	56	70	8	15	2
Nebraska	132	160	38	40	40	2	12	3
Nevada	84	141	--	26	47	5	6	8
New Hampshire	100	106	--	58	32	4	6	11
New Jersey	48	47	12	21	7	2	6	8
New Mexico	92	101	2	41	38	8	3	9
New York	358	396	19	123	158	24	34	13
North Carolina	62	61	10	25	19	4	4	6
North Dakota	125	157	--	44	64	4	13	10
Ohio	195	204	29	100	45	6	15	12
Oklahoma	59	61	9	16	28	4	2	3
Oregon	87	103	--	31	46	5	5	10
Pennsylvania	80	80	1	31	37	8	3	6
Rhode Island	21	21	1	5	9	4	2	2
South Carolina	38	46	6	12	14	2	4	2
South Dakota	140	195	3	45	67	7	18	4
Tennessee	30	30	2	9	17	2	--	4
Texas	236	243	12	131	73	4	16	13
Utah	154	177	2	60	78	10	4	2
Vermont	93	107	--	39	42	3	9	4
Virginia	82	81	3	15	57	2	5	9
Washington	177	196	8	84	56	14	15	5
West Virginia	2	2	2	--	--	--	--	--
Wisconsin	318	360	12	136	117	16	37	19
Wyoming	128	187	1	15	98	3	11	4
Total	5,947	6,825	359	2,308	2,373	277	630	342

-- Zero.

<sup>1</sup>Table includes data available through November 18, 2019. Includes recycling plants.

TABLE 8  
U.S. EXPORTS OF CONSTRUCTION SAND AND GRAVEL IN 2017, BY DESTINATION<sup>1</sup>

(Metric tons and dollars)

Destination	Sand <sup>2</sup>		Gravel <sup>3</sup>	
	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>
North America:				
Bahamas, The	2,330	450,000	1,290	844,000
Canada	1,340	292,000	6,570	2,680,000
Dominican Republic	569	230,000	312	105,000
Mexico	2,590	838,000	1,310	1,390,000
Trinidad and Tobago	2,350	328,000	186	114,000
Other	1,960	962,000	456	587,000
Total	11,100	3,100,000	10,100	5,720,000
South America	6,890	2,740,000	36	12,800
Europe	5,520	2,140,000	357	341,000
Asia	1,910	762,000	258	354,000
Oceania	79	51,000	29	37,100
Africa	3	8,000	20	7,490
Grand total	25,500	8,810,000	10,800	6,470,000

<sup>1</sup>Table includes data available through November 18, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes Harmonized Tariff Schedule of the United States (HTS) code 2505.90.0000.

<sup>3</sup>Includes HTS code 2517.10.0015.

<sup>4</sup>Free alongside ship value. Value of material at U.S. port of export; based on transaction price, including all charges incurred in placing material alongside ship.

Source: U.S. Census Bureau.

TABLE 9  
U.S. IMPORTS FOR CONSUMPTION OF CONSTRUCTION SAND  
AND GRAVEL, BY COUNTRY OR LOCALITY<sup>1,2</sup>

Country or locality	2016			2017		
	Quantity (thousand metric tons)	Value <sup>3</sup> (thousands)	Unit value	Quantity (thousand metric tons)	Value <sup>3</sup> (thousands)	Unit value
Bahamas, The	6	\$30	\$5.33	22	\$310	\$13.88
Canada	3,240	32,300	9.95	6,210	47,400	7.64
China	8	2,220	272.96	32	2,420	76.33
Mexico	179	3,570	19.91	188	3,800	20.17
New Zealand	9	2,150	234.46	8	1,870	231.73
Norway	29	2,400	81.75	33	1,940	59.24
Peru	6	1,270	217.20	7	1,640	246.04
Other	7	1,610	247.07	21	2,780	132.89
Total	3,490	45,500	13.06	6,520	62,200	9.54

<sup>1</sup>Revised.

<sup>1</sup>Table includes data available through November 18, 2019. Data are rounded to no more than three significant digits, except unit values; may not add to totals shown.

<sup>2</sup>Includes Harmonized Tariff Schedule of the United States (HTS) code 2505.90.0000 and 2517.10.0015.

<sup>3</sup>Cost, insurance, and freight value. Value of material at U.S. port of entry; based on purchase price and includes all charges (except U.S. import duties) in bringing material from foreign country to alongside carrier.

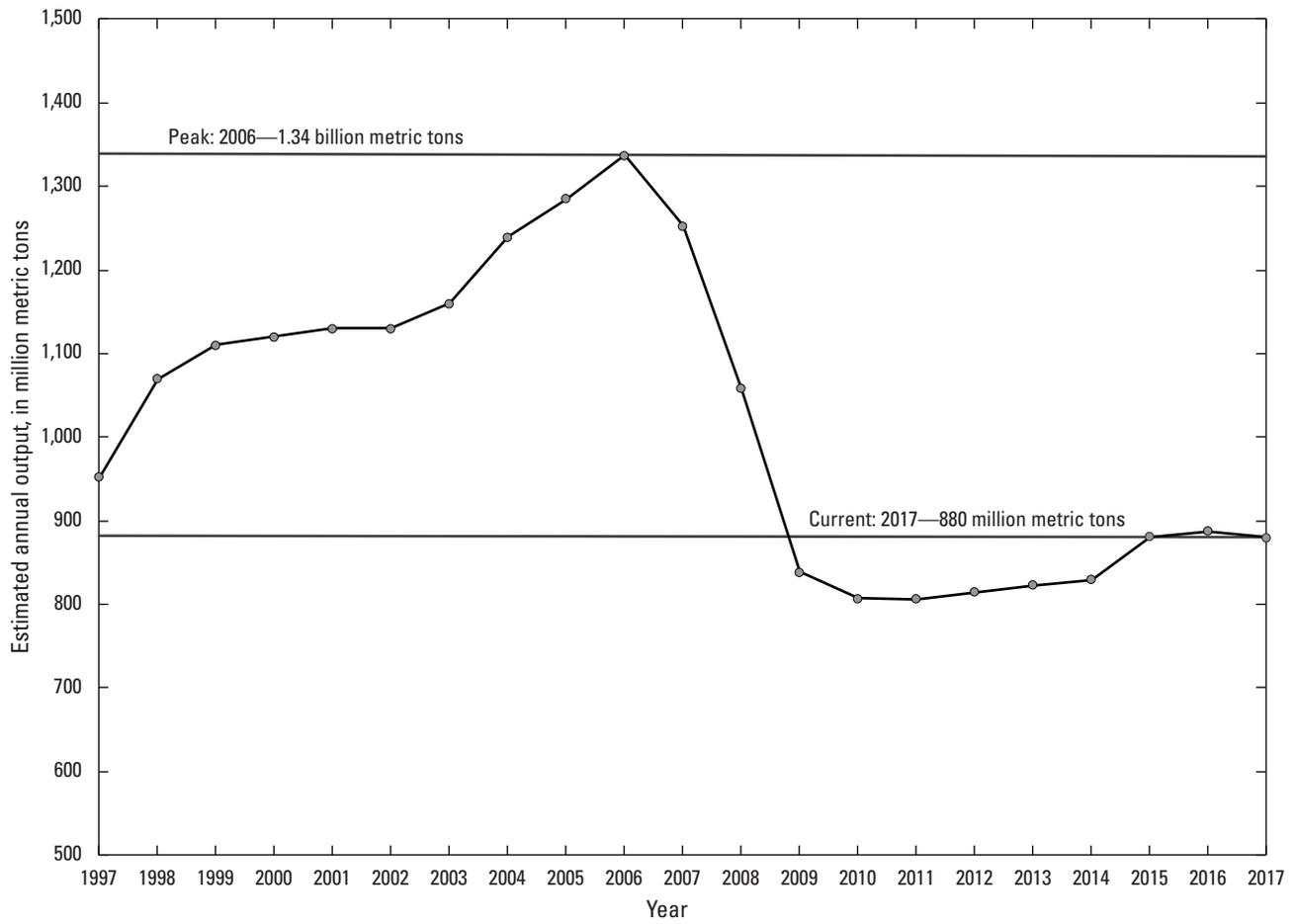
Source: U.S. Census Bureau.

TABLE 10  
THE TOP 100 PRODUCERS OF CONSTRUCTION SAND AND GRAVEL IN THE UNITED STATES IN 2016<sup>1</sup>

2017 rank	2016 rank <sup>f</sup>	Company	2017 rank	2016 rank <sup>f</sup>	Company
1	1	Oldcastle Materials, Inc.	51	53	All American Asphalt Co.
2	2	Vulcan Materials Co.	52	59	Varra Cos., Inc.
3	4	LafargeHolcim Ltd	53	45	R.E. Janes Gravel Co.
4	3	Lehigh Hanson, Inc.	54	52	Eagle Materials Inc.
5	5	CEMEX S.A.B. de C.V.	55	60	TM Crushing, LLC
6	6	MDU Resources Group, Inc.	56	44	Quikrete Co.
7	7	Martin Marietta Materials, Inc.	57	65	Wright Materials, Inc.
8	8	Granite Construction, Inc.	58	79	VantaCore Partners LP
9	12	Teichert, Inc.	59	56	Central Specialties Inc.
10	9	Mitsubishi Cement Corp.	60	55	Rieth-Riley Construction Co., Inc.
11	10	Summit Materials, LLC.	61	63	The Heritage Group
12	11	CalPortland Co.	62	74	Aggregate Resources, Inc.
13	13	Clyde Cos., Inc.	63	49	Johnson Sand & Gravel, Inc.
14	14	Bureau of Land Management	64	62	NEBCO, Inc.
15	15	Trinity Industries, Inc.	65	71	Troy Sand & Gravel, Inc.
16	19	Colas Inc.	66	50	Capitol Aggregates Inc.
17	17	L. G. Everist, Inc.	67	—	Tri City Highway Products, Inc.
18	27	Miles Sand & Gravel Co.	68	77	Stewart Materials
19	25	Fordyce Ltd.	69	80	Grand Rapids Gravel Co.
20	23	Edw. C. Levy Co.	70	72	Irving Materials, Inc.
21	21	Gila River Indian Community	71	94	GS Materials, Inc.
22	20	Pine Bluff Materials Co.	72	70	Wissota Sand & Gravel
23	28	Mathy Construction Co.	73	66	Dolese Bros. Co.
24	22	Fisher Industries	74	81	Peak Sand & Gravel, Inc.
25	16	WM. D. Scepaniak Inc.	75	75	Hilltop Basic Resources, Inc.
26	26	Chandler Aggregates, Inc.	76	84	Gateway Dredging & Contracting, LLC
27	18	Ash Grove Cement Co.	77	—	Foley Materials Co.
28	24	Nugent Sand Co.	78	93	The Rasmussen Group, Inc.
29	29	U.S. Concrete, Inc.	79	68	Corliss Resources, Inc.
30	32	Holliday Rock Co.	80	91	Brown & Watson Co., Inc.
31	30	Gernatt Asphalt Products, Inc.	81	95	J. Lee Milligan, Inc.
32	31	Salt River Pima-Maricopa Indian Community	82	—	P & R Mining, Inc.
33	36	Southwest Rock Products, LLC	83	67	North Texas Sand Farm, Inc.
34	33	E.R. Jahna Industries, Inc.	84	61	Wood Resources, LLC
35	48	Multisources Ltd.	85	57	Construction Partners, Inc.
36	42	Watson Gravel, Inc.	86	76	A. Lindberg & Sons, Inc.
37	39	Thelen Sand & Gravel, Inc.	87	82	Hi-Grade Materials Co.
38	38	Polaris Materials Corp.	88	88	S&S Aggregates Co.
39	35	Las Vegas Paving Corp.	89	86	Pioneer Sand Co.
40	96	FST Sand & Gravel, Inc.	90	83	Tiller Corp.
41	90	Bluegrass Materials Co.	91	—	South Alabama Materials, Inc.
42	40	Strata Corp.	92	—	Lakeview Rock Products, Inc.
43	37	The Olen Corp.	93	85	Eucon Corp.
44	73	Clayton Sand Co.	94	78	The Jurgensen Cos.
45	46	Memphis Stone & Gravel Co.	95	87	Coram Materials Corp
46	47	LS Sand & Gravel Ltd.	96	—	B.V. Hedrick Gravel & Sand Co., Inc.
47	58	A & S Construction Co.	97	—	National Lime & Stone Co.
48	43	York Building Products Co.	98	—	Atlanta Sand & Supply Co.
49	51	Chaney Enterprises L.P.	99	—	Ford Construction Co.
50	41	Burnco Rock Products Ltd	100	—	JMAC Resources

<sup>f</sup>Revised. — Not in the top 100 producers of construction sand and gravel in the United States in 2016.

<sup>1</sup>Table includes data available through November 18, 2019. In descending order of tonnage produced.



**Figure 1.** Annual output of construction sand and gravel produced for consumption in the United States from 1997 through 2017.