



2021 ECONOMIC IMPACT STUDY

of the
Minnesota Compost Industry

By
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About us

The Minnesota Composting Council (MNCC) received its non-profit status from the State of Minnesota in January 2013 and became an official US Composting Council State Chapter in December 2013. MNCC's [12-member Board of Directors](#) oversees decisions and coordinates functions with assistance from their Development Director and Minnesota Green Corps Member. The organization leads and participates in a number of legislative and research-based advocacy projects. See the projects and read reports at mncompostingcouncil.org.

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Jon Klapperich, Minnesota Waste Wise

Tim Lundell, Western Lake Superior Sanitary District

Nathan Reinbold, Pope Douglas Solid Waste Management

John Springman, Ramsey County Environmental Health

Mission

The MNCC is dedicated to the development, expansion, and promotion of the composting industry based upon sound science, principles of sustainability, and economic viability. The organization seeks to achieve its mission by:

- Encouraging and guiding research
- Promoting best management practices
- Establishing standards
- Educating professionals and the public
- Enhancing product quality and markets

Survey and report contributors

The following Minnesota GreenCorps members assisted the MNCC board in collecting survey responses from compost facilities and developing the economic impact survey reports.

2022 Jamie Marsh and Megan Monson

2018 Mikayla Larson

Purpose of study

The purpose of this study is to quantify the economic impact of Minnesota’s composting industry. In addition, this survey updates the Economic Impact Study conducted in 2014 (from 2013 data) and the 2018 study (from 2017 data). Updating the survey data regularly years provides the opportunity to evaluate growth in the composting industry.

The questions in the 2022 survey (2021 data) mirrored the 2014 and 2018 questions with only minor changes. Questions were also added based on the US Composting Council’s Economic Impact Survey that was released in 2021. These surveys were sent to all permitted yard waste, solid waste, and source-separated organics (SSO) compost facilities in the state. The survey collected the following information:

- Financial information
- Types and quantity of materials composted
- Markets for finished products

Study method

An electronic link to the survey was distributed to composters via email and data was collected from February 1, 2022 to June 16, 2022. The data gathered in the 2022 survey is representative of the 2021 composting year. The survey was distributed to 115 Minnesota permitted compost facilities, a decrease from 126 potential respondents from the 2018 survey. Some organizations own and operate multiple facilities, resulting in a total of 108 potential respondents. Of these, 25 responded resulting in a 23% response rate, an increase from the 20% response rate in 2018.

In 2022, seven (28%) of the respondents represented Source Separated Organic Materials (SSOM) facilities, sixteen (64%) represented yard waste only compost sites, and two (8%) were other sites.

Total respondents	25	
● SSOM facilities	7	28%
● Yard waste only	16	64%
● Other sites	2	8%

Results

Site ownership and operations

In 2022, of the businesses surveyed, 22 operated just one site each (88%), one respondent operated four sites (4%), one respondent operated six sites (4%), and one respondent operated 7 sites (4%). (Figure 1).

● Owned and operated 1 site	22 respondents	88%
● Owned and operated 4 sites	1 respondent	4%
● Owned and operated 6 sites	1 respondent	4%
● Owned and operated 7 sites	1 respondent	4%

Compost sites in Minnesota fall under three categories of ownership, the most common being Publicly owned & operated sites (68%), the second being Privately owned & operated sites (20%), and the least common being Other sites (12%) (Figure 2).

Total sites	25	
● Publicly owned & operated	17 sites	68%
● Privately owned & operated	5 sites	20%
● Other sites	3 sites	12%

Figure 1. Number of Compost sites operated per company

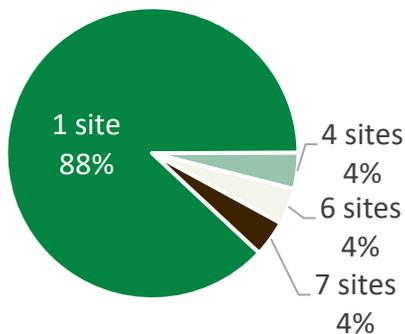
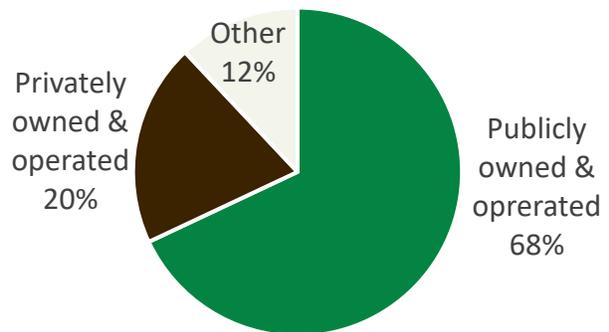


Figure 2. Type of facility operated



Volume of materials composted by site ownership

The total volume of materials being composted in Minnesota during 2021 was estimated at 1,716,960 cubic yards. Of these materials, 398,480 cubic yards (23.2%) were composted by the private sites, 661,460 cubic yards (38.5%) were composted by the public sites, and 657,000 cubic yards (38.3%) were manufactured by the other sites.

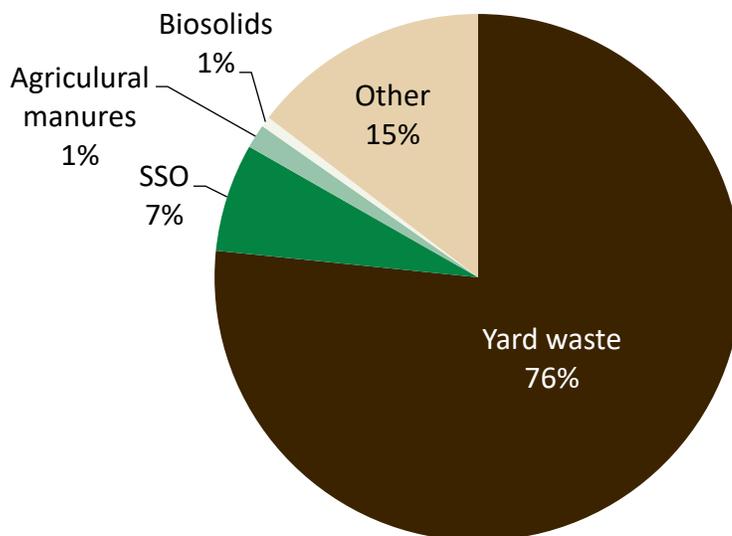
Materials composted by site ownership type	1,716,960 yds³	
• Total volume by the private sites	398,480 yds ³	23.2%
• Total volume by the public sites	661,460 yds ³	38.5%
• Total volume by the other sites	657,000 yds ³	38.3%

Feedstock

Yard Waste (including leaves, grass, garden, tree, and shrub waste) comprised the majority of composted material (76%), 'Other' materials (reported to be wood chips and dirt/sod) were the second most commonly reported feedstock (15%), Source-separated organics (SSO) were the third most common (7%), Biosolids and Agricultural manures were the least common (1% each) (Figure 3).

Total materials composted	1,716,960 yds³	
• Yard Waste composted	1,315,420 yds ³	76%
• Other materials composted	251,100 yds ³	15%
• Source-separated organics (SO)	114,120 yds ³	7%
• Biosolids	11,000 yds ³	1%
• Agricultural manures	25,280 yds ³	1%

Figure 3. Incoming Feedstocks (%)



Volume of products manufactured by site ownership

The total volume of recycled products manufactured at Minnesota compost sites during 2021 was estimated at 610,130 cubic yards; of which 263,260 cubic yards was manufactured by the private sites, 232,900 cubic yards was manufactured by the public sites, and 113,970 cubic yards was manufactured by the other sites.

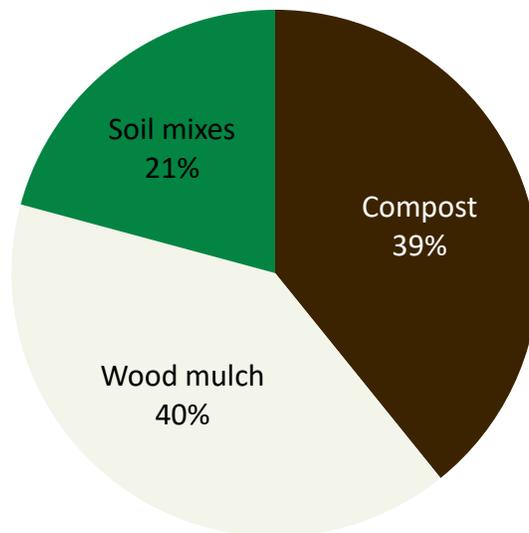
Total volume of manufactured products	610,130 yds³	
● Total by the Private sites	263,260 yds ³	43.1%
● Total by the Public sites	232,900 yds ³	38.2%
● Total by the Other sites	113,970 yds ³	18.7%

Products manufactured

The breakdown of products manufactured by the compost industry were Wood mulch (40%), Compost (39%), and Soil mixes (21%). No products manufactured were reported as 'Other' (Figure 4).

Total products manufactured	610,140 yds³	
● Wood mulch	244,100 yds ³	40%
● Compost	239,140 yds ³	39%
● Soil mixes	126,900 yds ³	21%

Figure 4. Products manufactured



Site financial information

Tipping fees

Of the 25 survey respondents, ten sites charged a tipping fee for incoming feedstocks and fifteen did not. Seven sites charged for finished products and eighteen did not (Figure 5, Figure 6). Of the sites that charged a tipping fee, 50% were private sites, 40% were public sites, and 10% were other sites. Tipping fees reported ranged from \$8 on the low end for yard waste and brush to \$70 per ton. Of those who reported tipping fees, they not surprisingly ranged by material type and whether the material was from a contract or not.

Of those who did not charge a tipping fee, 87% were private sites, 0 were public sites, and 13% were other sites. This is a surprising result as some local governments offer free drop-off sites for residents to bring yard waste and/or source-separated organics. It would be assumed that private sites would more commonly charge tipping fees as part of their business model. It is known that some private compost sites offer free drop-off of certain items seasonally (e.g. leaves and pumpkins).

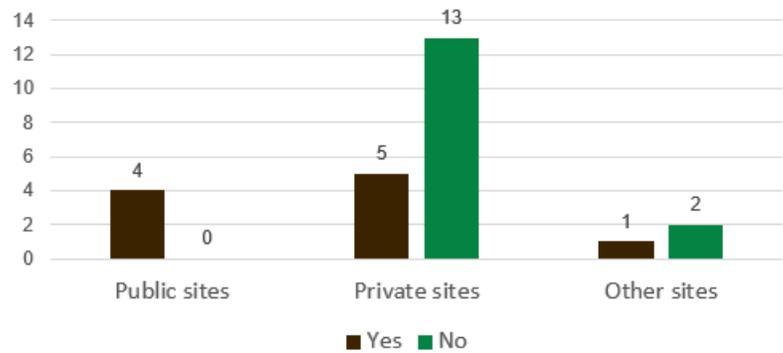
Charged a tipping fee 10 sites

- Public site 40%
- Private site 50%
- Other sites 10%

NO tipping fee charged 15 sites

- Public site 0%
- Private site 87%
- Other sites 13%

Figure 5. Sites charging tipping fees (#)



Finished compost

Of the sites charging for finished products, 57% were private sites, 29% were public sites, and 14% were other sites. Of those who did not charge for finished products, 6% were private sites, 83% were public sites, and 11% were other sites. Private compost sites are known to donate finished compost to community gardens, non-profits or for special projects.

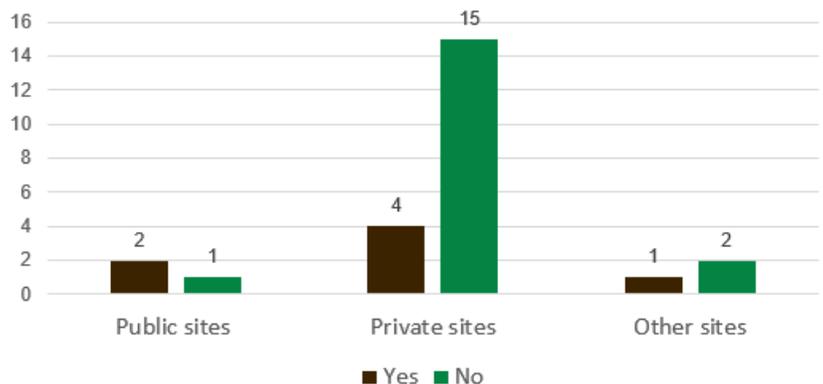
Charge for finished products 7 sites

- Public site 29%
- Private site 57%
- Other sites 14%

No charge for finished products 18 sites

- Public site 83%
- Private site 6%
- Other sites 11%

Figure 6. Sites charging for finished compost (#)



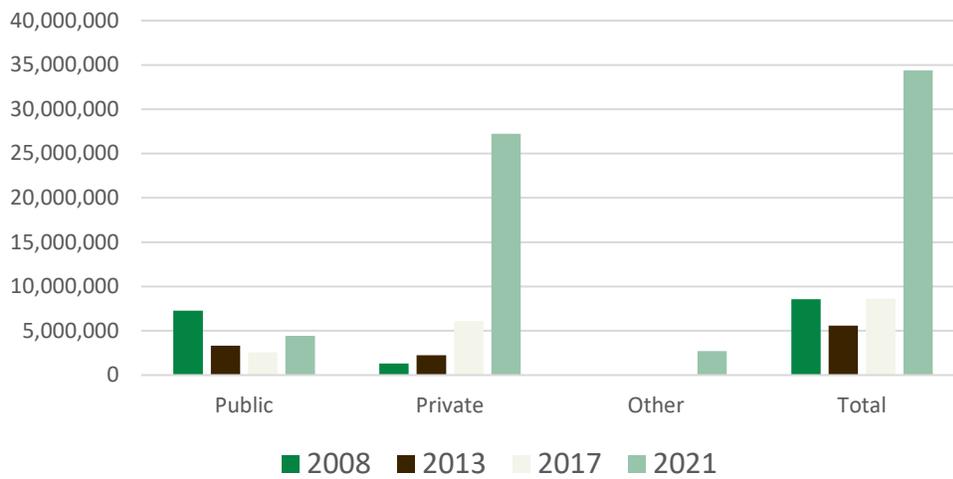
Total revenue generated

In the 2014 study, respondents were asked about their total gross revenue for both 2008 and 2013. In 2013 the total gross revenue decreased from 2008 levels, but increase in both the 2018 and 2022 studies, with a significant increase in revenue at private sites reported in the 2022 study (Table 1, Figure 7).

Table 1: Total gross revenues

Year	2008	2013	2017	2021
Public sites	\$7.3 million	\$3.3 million	\$2.6 million	\$4.4 million
Private sites	\$1.3 million	\$2.3 million	\$6.1 million	\$27.2 million
Other sites	n/a	n/a	n/a	\$27 million
Total gross revenue	\$8.6 million	\$5.6 million	\$8.6 million	\$34.4 million

Figure 7. Gross revenue by year (\$)



Note that totals of overall gross revenue by year and the revenue by source (below) by year do not align. Some compost facilities only reported gross revenue, some only reported revenue by product type and some reported both.

Sources of revenue

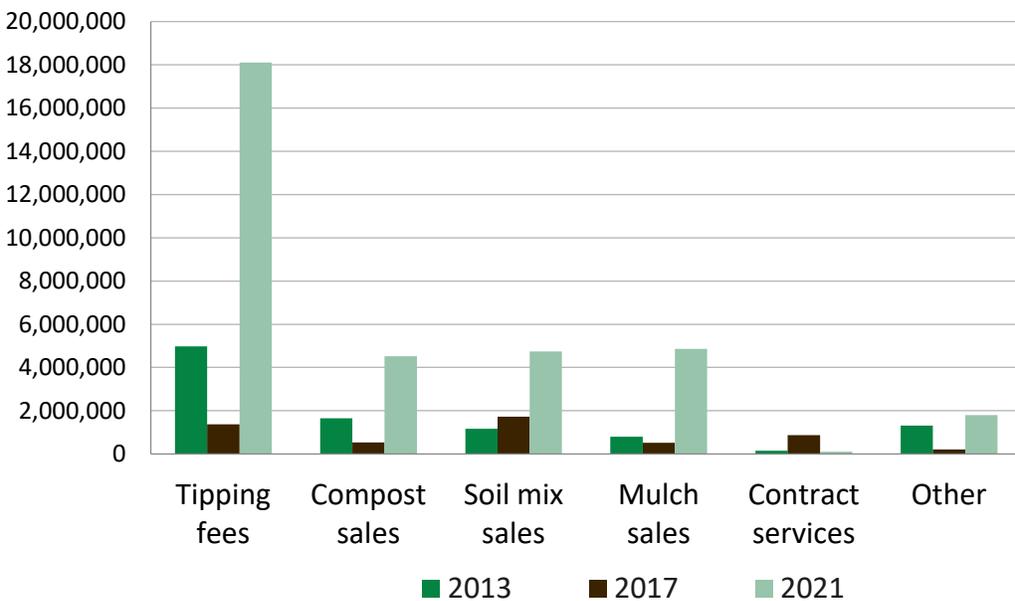
Respondents were also asked about the source of their revenue by product type. Table 2 and Figure 8 detail the source of revenue by tipping fees, product sales and other services. Total revenues increased 5.6% from 2017 levels.

Tipping fees made up more than 50% of total revenue for composting facilities in 2021. Product sales of compost, soil mix, and mulch make up another 40% of revenue and other contracted services like screening and grinding and Other items (delivery fees and sales of other products) made up less than 10% of revenues.

Table 2. Source of revenue by year

Year	2008	2013	2017	2021
Tipping fees	n/a	\$5 million (50%)	\$1.4 million (26%)	\$18.1 million (53%)
Compost sales	n/a	\$1.6 million (16%)	\$533,000 (10%)	\$4.5 million (13%)
Soil mix sales	n/a	\$1.2 million (12%)	\$1.7 million (33%)	\$4.7 million (14%)
Mulch sales	n/a	\$793,000 (8%)	\$522,000 (10%)	\$4.9 million (14%)
Contract services	n/a	152,000 (2%)	\$878,000 (17%)	\$111,000 (1%)
Other	n/a	\$1.3 million (13%)	\$208,000 (4%)	\$1.8 million (5%)
Total	\$30 million	\$10.1 million	\$5.2 million	\$34.1 million

Figure 8. Source of Revenue (\$)

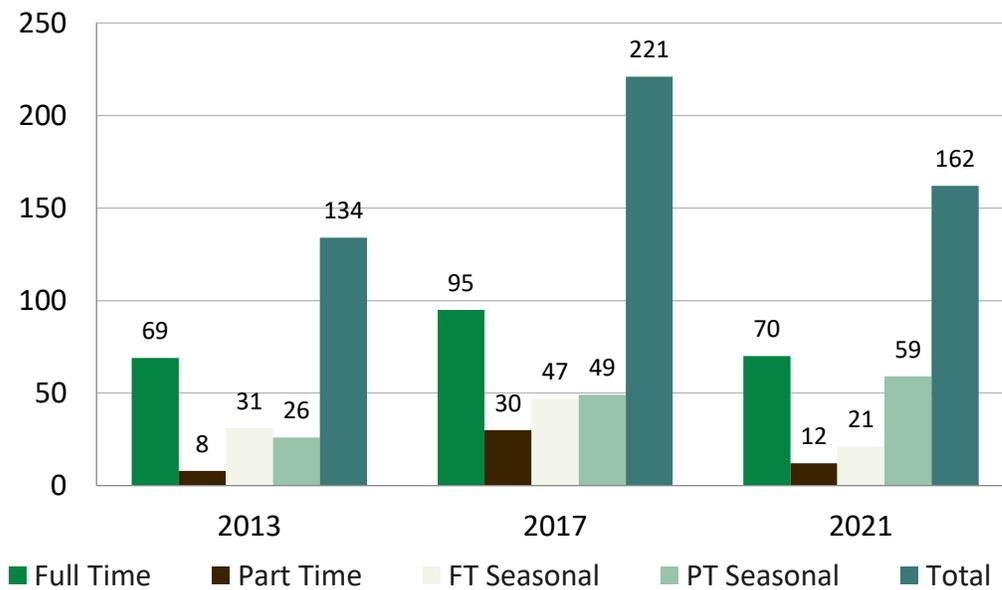


**Source of revenue by product or service type for 2008 was not asked of survey respondents.*

Employment at composting facilities

Similarly to revenue, respondents were asked about the number of employees, both year round and seasonal, to evaluate the number of jobs created by the composting industry in Minnesota. Despite a significant increase in the number of organics recycling programs in Minnesota between 2018 and 2022, the total jobs reported decreased (Figure 9). This could be due to increased efficiencies by compost site operators.

Figure 9. Employee breakdown (#)

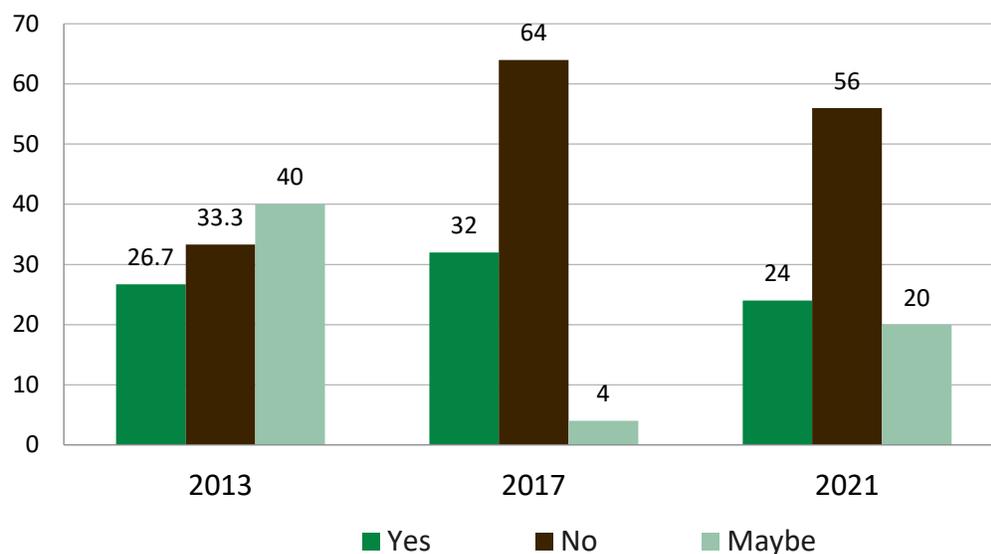


**Number of employees for 2008 was not asked of survey respondents.*

Capital investments

The study also examined plans for capital investments at compost sites. Capital investments include site improvements and new equipment for the next year. Of those surveyed in 2013, 27% indicated capital investment plans for 2014, 33% had no plans, and 40% may make investments the following year. Then in 2017, 32% noted investment plans for 2018, 64% had no plans, and 4% may make investments the following year. In the 2021 survey, 24% indicated capital investments for 2022, 56% did not plan to make any capital investments, and 20% stated they may make capital investments in 2022 (Figure 10).

Figure 10: Site planning capitol investments by year (%)



Capital investments by facility ownership

In the 2021 survey a total of 6 facilities have capital investment plans in the next year and three sites are considering capital improvements but have not committed. Table 3 shows the breakdown by site ownership and estimated amount of investment.

Table 3. Capital investment by facility ownership

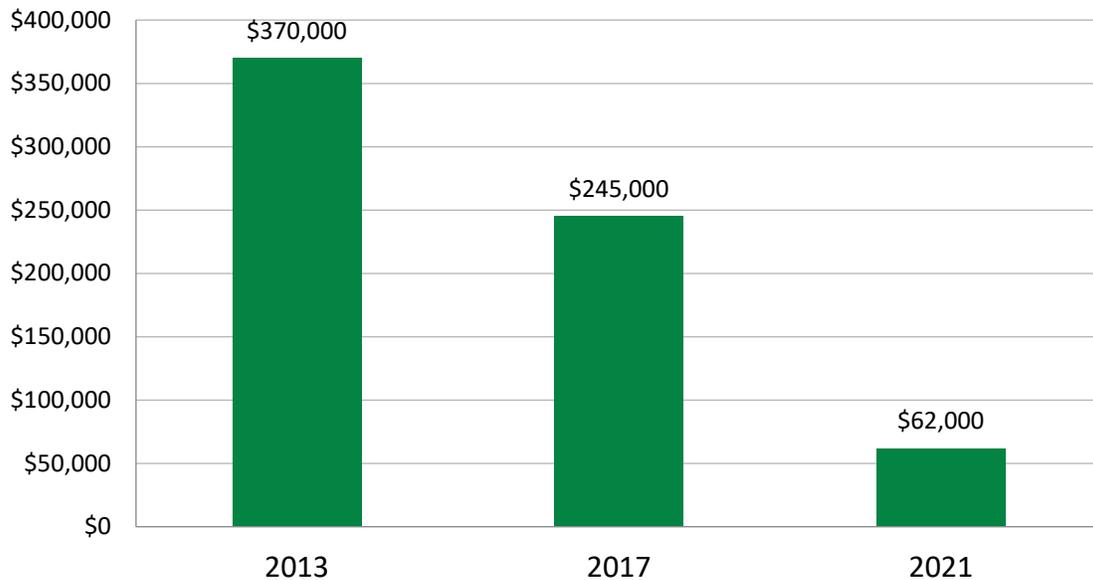
Facility ownership	Sites committed to capital investment	Value of investments reported	Sites considering capital investment	Value of investments reported
Publicly owned & operated	4	\$20,000 - \$120,000	2	\$20,000 - \$30,000
Privately owned & operated	1	\$100,000 - \$120,000	1	\$40,000 - \$50,000
Other sites	1	>\$115,000	0	n/a

When evaluating capital investments over time, respondents in the 2014 study reported the largest value of upcoming planned investments (Figure 11).

Residential and commercial organics recycling programs really began to take off in 2013. In 2017 Hennepin County announced changes to its Solid Waste Ordinance 13 that would require all large generators of food scraps to implement diversion programs by 2020 and require all of its 44 cities to have residential organics curbside and/or drop-off programs by 2022. With new programs coming on board, it is justifiable that compost facilities, particularly those in the Twin Cities Metro Region, were spending more to prepare for increased materials arriving at their facilities.

Ramsey County has also been preparing to roll-out a durable compostable bag collection program for several years (roll-out will occur in 2023). In Greater Minnesota, the Glacial Ridge Composting facility opened in September 2022, increasing capacity and starting a new spur of organics programs in the surrounding 5-county region of Pope, Douglas, Ottertail, Grant and Stevens. Interest in starting or expanding organics programs is also growing in other Greater Minnesota cities, most notably, Northfield, Red Wing, Hutchinson, and Duluth.

Figure 11: Estimated Amount in Dollars for Investments (\$)



Conclusions

Overall, the compost industry is vibrant and growing in Minnesota. This is especially evident through:

- The large jump in gross revenues at composting facilities, particularly in the private sector
- The increase in the number of residential organics recycling program in the state
- The increase in grants from the State and others to conduct feasibility studies or evaluate and improve existing programs
- The increased interest in Anaerobic Digestion as a means to manage organic materials

That being said, there are still a couple of areas where growth has lessened, such as the public sector's revenue, even with the slight increase from 2017 to 2021, and increase in capital investment plans. These may be due to typical fluctuations in the industry but are worth keeping an eye on over the next few years. The major decrease in capital investments for the following years could be because of a decrease in the need of equipment and resources needed for the respondent as they have gotten a lot of what they feel they need. Regardless, the compost industry continues to provide jobs and economic opportunities for Minnesotans.

The Minnesota Composting Council continues its efforts to expand markets for the composting industry. By facilitating discussions and expanding our connections with staff at the Minnesota Department of Natural Resources, Department of Agriculture and Department of Transportation, the MNCC is developing a white paper to detail the differences in how State agencies classify compost as a material and how it's produced. Through these conversations and increased communication and respect, the MNCC hopes to standardize policies and procedures at the State level to further support companies properly manufacturing compost by increasing not only the use of compost but also it's value.

The MNCC board of directors sincerely thanks all compost facilities who participated in this evaluation. We look forward to continuing to update this study and hope more and more facilities will participate so we can show the full and true impact the industry has on waste diversion, job creation, and improved soil and environmental benefits by producing and using compost.