7-County Twin Cities Metro Area Minnesota – Manufacturing Overview

According to DEED’s Quarterly Census of Employment and Wages (QCEW) data, the 7-county Twin Cities metro area was home to 4,090 manufacturing establishments providing 174,402 jobs through the third quarter of 2019. That was just over half (53.2%) of total manufacturing employment in the state. Manufacturing accounted for 9.7% of total employment in the region, making it the second largest industry behind health care and social assistance (275,202 jobs), and just ahead of retail trade (167,804 jobs).

These manufacturers provided over $3.4 billion in total payroll through the third quarter of 2019, again making it the second largest industry behind only health care and social assistance. Average annual wages in manufacturing were $78,624 in 2019, which was nearly 25% higher than the total of all industries.

<table>
<thead>
<tr>
<th>NAICS Code</th>
<th>NAICS Industry Title</th>
<th>Number of Firms, Q3 2019</th>
<th>Number of Jobs, Q3 2019</th>
<th>Quarterly Payroll, Q3 2019</th>
<th>Avg. Annual Wages, Q3 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Total, All Industries</td>
<td>85,507</td>
<td>1,777,813</td>
<td>$28,125,473,326</td>
<td>$63,232</td>
</tr>
<tr>
<td>31</td>
<td>Manufacturing</td>
<td>4,090</td>
<td>174,402</td>
<td>$3,429,501,101</td>
<td>$78,624</td>
</tr>
<tr>
<td>323</td>
<td>Printing &amp; Related Support Activities</td>
<td>407</td>
<td>13,229</td>
<td>$216,114,970</td>
<td>$65,312</td>
</tr>
<tr>
<td>311</td>
<td>Food Manufacturing</td>
<td>272</td>
<td>10,976</td>
<td>$152,532,979</td>
<td>$55,536</td>
</tr>
<tr>
<td>326</td>
<td>Plastics &amp; Rubber Products Manufacturing</td>
<td>187</td>
<td>10,140</td>
<td>$151,136,708</td>
<td>$59,592</td>
</tr>
<tr>
<td>314</td>
<td>Textile Product Mills</td>
<td>56</td>
<td>738</td>
<td>$6,964,010</td>
<td>$37,700</td>
</tr>
<tr>
<td>315</td>
<td>Apparel Manufacturing</td>
<td>39</td>
<td>345</td>
<td>$3,305,278</td>
<td>$38,272</td>
</tr>
<tr>
<td>313</td>
<td>Textile Mills</td>
<td>6</td>
<td>195</td>
<td>$2,121,427</td>
<td>$43,472</td>
</tr>
<tr>
<td>316</td>
<td>Leather &amp; Allied Product Manufacturing</td>
<td>8</td>
<td>183</td>
<td>$2,527,340</td>
<td>$55,224</td>
</tr>
</tbody>
</table>

Source: DEED Quarterly Census of Employment & Wages (QCEW) program
Computer and Electronic Product Manufacturing was easily the largest sector in the Twin Cities, with 36,364 jobs, followed by Fabricated Metal Product Manufacturing, which had 25,427 jobs through the third quarter of 2019. Combined, those two sectors accounted for over one-third (35.4%) of the region’s manufacturing employment.

The region also had large numbers of jobs in Miscellaneous Manufacturing (20,853 jobs), which includes medical devices and equipment; Machinery Manufacturing (16,760 jobs), Printing and Related Support Activities (13,229 jobs), and Food Manufacturing (10,976 jobs). Those four sectors combined for another 35.4% of total manufacturing employment in the region.

The Twin Cities also has notable employment in the Plastics and Rubber Product Manufacturing (10,140 jobs), Chemical Manufacturing (8,781 jobs), Wood Product Manufacturing (5,117 jobs), Electrical Equipment and Appliance Manufacturing (4,993 jobs), Furniture and Related Product Manufacturing (4,149 jobs), Paper Manufacturing (4,129 jobs) and Primary Metal Manufacturing (3,316 jobs) sectors.

Average annual wages in manufacturing ($78,624) were about 25% higher than the total of all industries ($63,232), led by extremely high average weekly wages in Computer and Electronic Product Manufacturing ($119,340), Petroleum and Coal Products Manufacturing ($118,300), Chemical Manufacturing ($93,496), Machinery Manufacturing ($76,128), Nonmetallic Mineral Manufacturing ($73,632), Electrical Equipment and Appliance Manufacturing ($70,564), and Miscellaneous Manufacturing ($67,912).

**Industry Trends**

Between 2000 and 2010, the manufacturing industry experienced employment declines in the Twin Cities. Manufacturers cut huge numbers of jobs during the 2001 recession, then mostly held steady from 2003 to 2007. The region’s manufacturers then suffered even more significant job losses during the recession from 2008 to 2010, dropping to a low of 158,247 jobs through the third quarter of 2010. However, manufacturers in the region have regained almost 16,200 jobs from 2010 to 2019, a 10.2% increase (see Figure 1).

![Figure 1. Twin Cities Metro Area Employment Trends, 2000-2019](source: DEED Quarterly Census of Employment and Wages)
Due to recent gains, Twin Cities manufacturers have 14,761 more jobs now than in 2009, the start of the recession. Manufacturing employment was down about 8% from 2006 to 2016, while the total of all industries surpassed its pre-recession peak in 2014 and is now up over 160,565 jobs since 2009, a 9.9% increase in jobs.

The biggest job declines from 2009 to 2019 occurred in Printing and Related Support Activities, which sliced 2,211 jobs and Paper Manufacturing decreased by 960 jobs, an 18.9% decrease. In sum, 15 of the 21 manufacturing sectors had more jobs in 2019 than in 2009, including ten that added more than 15 percent of their employment with the largest job gains occurring in Fabricated Metal Product Manufacturing, which added 3,499 jobs. The Twin Cities also saw big gains in Miscellaneous Manufacturing, Plastics and Rubber Product Manufacturing, and Chemical Manufacturing.

Eleven of the 21 sectors added jobs in the past year, and 13 of the 21 sectors were up since the third quarter of 2014, showing a widespread and relatively strong recovery from the Great Recession (see Table 2).

<table>
<thead>
<tr>
<th>NAICS Industry Title</th>
<th>Number of Jobs, Q3 2019</th>
<th>1-Year Trend, Q3 2018-Q3 2019</th>
<th>Percent Change</th>
<th>5-Year Trend, Q3 2014-Q3 2019</th>
<th>Percent Change</th>
<th>10-Year Trend, Q3 2009-Q3 2019</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, All Industries</td>
<td>1,777,813</td>
<td>+11,717</td>
<td>+0.7%</td>
<td>+129,779</td>
<td>+7.8%</td>
<td>+247,620</td>
<td>+16.2%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>174,402</td>
<td>+1,389</td>
<td>+0.8%</td>
<td>+7,779</td>
<td>+4.7%</td>
<td>+14,761</td>
<td>+9.2%</td>
</tr>
<tr>
<td>Computer and Electronic Prod. Mfg.</td>
<td>36,364</td>
<td>+28</td>
<td>+0.1%</td>
<td>+938</td>
<td>+2.6%</td>
<td>+905</td>
<td>+2.6%</td>
</tr>
<tr>
<td>Fabricated Metal Prod. Mfg.</td>
<td>25,427</td>
<td>+226</td>
<td>+0.9%</td>
<td>+1,174</td>
<td>+4.8%</td>
<td>+3,499</td>
<td>+16.0%</td>
</tr>
<tr>
<td>Miscellaneous Manufacturing</td>
<td>20,853</td>
<td>+1,685</td>
<td>+8.8%</td>
<td>+3,531</td>
<td>+20.4%</td>
<td>+3,422</td>
<td>+19.6%</td>
</tr>
<tr>
<td>Machinery Manufacturing</td>
<td>16,760</td>
<td>-552</td>
<td>-3.2%</td>
<td>-399</td>
<td>-2.3%</td>
<td>+1,450</td>
<td>+9.5%</td>
</tr>
<tr>
<td>Printing and Related Support Activities</td>
<td>13,229</td>
<td>-234</td>
<td>-1.7%</td>
<td>-1,737</td>
<td>-11.6%</td>
<td>-2,211</td>
<td>-14.3%</td>
</tr>
<tr>
<td>Food Manufacturing</td>
<td>10,976</td>
<td>-90</td>
<td>-0.8%</td>
<td>-479</td>
<td>-4.2%</td>
<td>+883</td>
<td>+8.7%</td>
</tr>
<tr>
<td>Plastics and Rubber Prod. Mfg.</td>
<td>10,140</td>
<td>-177</td>
<td>-1.7%</td>
<td>+1,189</td>
<td>+13.3%</td>
<td>+2,236</td>
<td>+28.3%</td>
</tr>
<tr>
<td>Chemical Manufacturing</td>
<td>8,781</td>
<td>+72</td>
<td>+0.8%</td>
<td>+1,804</td>
<td>+25.9%</td>
<td>+1,247</td>
<td>+16.6%</td>
</tr>
<tr>
<td>Wood Product Manufacturing</td>
<td>5,117</td>
<td>+157</td>
<td>+3.2%</td>
<td>+1,032</td>
<td>+25.3%</td>
<td>+996</td>
<td>+24.2%</td>
</tr>
<tr>
<td>Electrical Equipment, Appliance Mfg.</td>
<td>4,993</td>
<td>+560</td>
<td>+12.6%</td>
<td>+315</td>
<td>+6.7%</td>
<td>+1,003</td>
<td>+25.1%</td>
</tr>
<tr>
<td>Furniture and Related Product Mfg.</td>
<td>4,149</td>
<td>-28</td>
<td>-0.7%</td>
<td>-126</td>
<td>-2.9%</td>
<td>+459</td>
<td>+12.4%</td>
</tr>
<tr>
<td>Paper Manufacturing</td>
<td>4,129</td>
<td>-34</td>
<td>-0.8%</td>
<td>-589</td>
<td>-12.5%</td>
<td>-960</td>
<td>-18.9%</td>
</tr>
<tr>
<td>Primary Metal Manufacturing</td>
<td>3,316</td>
<td>+21</td>
<td>+0.6%</td>
<td>-195</td>
<td>-5.6%</td>
<td>+424</td>
<td>+14.7%</td>
</tr>
<tr>
<td>Beverage and Tobacco Mfg.</td>
<td>2,550</td>
<td>+175</td>
<td>+7.4%</td>
<td>+874</td>
<td>+52.1%</td>
<td>+1,079</td>
<td>+73.4%</td>
</tr>
<tr>
<td>Nonmetallic Mineral Product Mfg.</td>
<td>2,517</td>
<td>+123</td>
<td>+5.1%</td>
<td>+395</td>
<td>+18.6%</td>
<td>+349</td>
<td>+16.1%</td>
</tr>
<tr>
<td>Petroleum and Coal Products Mfg.</td>
<td>1,967</td>
<td>-68</td>
<td>-3.3%</td>
<td>-376</td>
<td>-16.0%</td>
<td>-81</td>
<td>-4.0%</td>
</tr>
<tr>
<td>Transportation Equipment Mfg.</td>
<td>1,667</td>
<td>+53</td>
<td>+3.3%</td>
<td>+261</td>
<td>+18.6%</td>
<td>-143</td>
<td>-7.9%</td>
</tr>
<tr>
<td>Textile Product Mills</td>
<td>738</td>
<td>-510</td>
<td>-40.9%</td>
<td>+140</td>
<td>+23.4%</td>
<td>+141</td>
<td>+23.6%</td>
</tr>
<tr>
<td>Apparel Manufacturing</td>
<td>345</td>
<td>+1</td>
<td>+0.3%</td>
<td>+42</td>
<td>+13.9%</td>
<td>+89</td>
<td>+34.8%</td>
</tr>
<tr>
<td>Textile Mills</td>
<td>195</td>
<td>-10</td>
<td>-4.9%</td>
<td>+10</td>
<td>+5.4%</td>
<td>-7</td>
<td>-3.5%</td>
</tr>
<tr>
<td>Leather and Allied Product Mfg.</td>
<td>183</td>
<td>-10</td>
<td>-5.2%</td>
<td>-24</td>
<td>-11.6%</td>
<td>-18</td>
<td>-9.0%</td>
</tr>
</tbody>
</table>

Source: DEED Quarterly Census of Employment & Wages (QCEW) program
New graduates and other jobseekers will be important in filling the workforce pipeline in the manufacturing industry, which relies on a relatively old workforce. In 2018, one-fourth (25.3%) of workers in the industry were 55 years or older, up from just 12.9% of the workforce back in 2003. In contrast, less than 7.5% of workers in the industry were under 25 years of age, down from almost 8.3% in 2003. Likewise, the percent of workers from 25 to 44 years of age dropped from 52.8% of the total in 2003 to just 43.4% in 2018 (see Figure 3).

Further demographic data from DEED’s Quarterly Employment Demographics program shows that the manufacturing industry is relatively non-diverse, with males accounting for 70% of workers (see Figure 4), and about 80% reporting white as their race (see Figure 5). However, the racial diversity of the workforce has changed over time, with the number of manufacturing workers identifying as white alone declining by 18% from 2003 to 2018, compared to a 36.2% increase in the number of jobholders of other race groups. Likewise, the number of Hispanic or Latino workers in manufacturing jumped by 36% from 2003 to 2018. In the face of tight labor markets, manufacturers may need to tap into new labor pools in order to attract the talent they need to grow and replace existing workers in the future.
Industry Demand
The recent growth in manufacturing employment has led to an increased number of job vacancies across the Twin Cities metro area. The 5,065 job vacancies reported by manufacturing employers in the second quarter of 2019 was the fourth highest number ever recorded in the 2nd Quarter, only 1,800 less than the peak in 2017. Likewise, the 5,985 job vacancies posted in the fourth quarter of 2018 was the highest number reported in a fourth quarter, about 600 more than the fourth quarter of 2018, and nearly four times higher than the lowest number reported in 2009 (see Figure 2).

The median wage offer for these vacancies increased to $22.07 per hour in the second quarter of 2019, up about $3.50 compared to the same survey in the second quarter of 2018 and up nearly $11.50 from the second quarter of 2001. Nearly three-fourths of the manufacturing vacancies required at least 1 year of experience, and 55% required postsecondary education. Manufacturing employers continue to place a high premium on related work experience, especially in comparison to other industries. Manufacturing vacancies were almost twice as likely to require one or more years of work experience as postsecondary education. Just 2% of the openings were part-time, as compared to 31% of vacancies across all industries (see Table 3).

The largest number of manufacturing vacancies were production occupations, including metal and plastic workers, textile and furnishing workers, food processing workers, assemblers and fabricators, printing workers, supervisors of production workers, and other production occupations. The median wage offer for these positions was $16.39, but ranged between $12 and $29 per hour. Manufacturers in the Twin Cities were also looking to hire sales and office, transportation and material moving, engineering, management, and installation, maintenance, and repair workers (see Table 4).
Industry Occupational Employment

DEED’s Occupational Employment Statistics (OES) program provides detailed employment and wage data for a wide range of occupations involved in manufacturing. In sum, there were an estimated 114,080 people working in production occupations in the Twin Cities, accounting for about 6% of total employment in the region. Median hourly wages for production occupations were $19.06 in 2019, but ranged from $12 at the low end to $44 at the high end.

As noted above, in addition to production occupations, manufacturers also require the services of workers in several other occupational groups, such as office and administrative support, transportation and material moving, architecture and engineering, management, and installation, maintenance and repair. Not surprisingly, wages were higher for the higher level positions (see Table 5).

Table 4. Twin Cities Production Occupations Job Vacancy Survey, 2nd Quarter 2019

<table>
<thead>
<tr>
<th>SOC Occupational Title</th>
<th>Number of Vacancies</th>
<th>Median Wage Offer</th>
<th>Percent Part-time</th>
<th>Percent Requiring Postsecondary Education</th>
<th>Percent Requiring 1+ Years Work Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, All Occupations</td>
<td>86,044</td>
<td>$15.88</td>
<td>31%</td>
<td>34%</td>
<td>51%</td>
</tr>
<tr>
<td>Production Occupations</td>
<td>2,876</td>
<td>$16.39</td>
<td>6%</td>
<td>23%</td>
<td>52%</td>
</tr>
<tr>
<td>Supervisors of Production Workers</td>
<td>167</td>
<td>$29.07</td>
<td>0%</td>
<td>42%</td>
<td>94%</td>
</tr>
<tr>
<td>Assemblers &amp; Fabricators</td>
<td>456</td>
<td>$14.97</td>
<td>6%</td>
<td>7%</td>
<td>49%</td>
</tr>
<tr>
<td>Food Processing Workers</td>
<td>400</td>
<td>$12.27</td>
<td>10%</td>
<td>0%</td>
<td>17%</td>
</tr>
<tr>
<td>Metal Workers &amp; Plastic Workers</td>
<td>807</td>
<td>$18.34</td>
<td>0%</td>
<td>50%</td>
<td>67%</td>
</tr>
<tr>
<td>Printing Workers</td>
<td>350</td>
<td>$14.95</td>
<td>2%</td>
<td>22%</td>
<td>45%</td>
</tr>
<tr>
<td>Textile, Apparel, &amp; Furnishings Workers</td>
<td>144</td>
<td>$12.98</td>
<td>38%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td>Woodworkers</td>
<td>26</td>
<td>$16.58</td>
<td>20%</td>
<td>65%</td>
<td>70%</td>
</tr>
<tr>
<td>Plant &amp; System Operators</td>
<td>18</td>
<td>$25.18</td>
<td>6%</td>
<td>52%</td>
<td>78%</td>
</tr>
<tr>
<td>Other Production Occupations</td>
<td>510</td>
<td>$16.99</td>
<td>9%</td>
<td>12%</td>
<td>60%</td>
</tr>
<tr>
<td>Office &amp; Administrative Support</td>
<td>5,711</td>
<td>$15.22</td>
<td>41%</td>
<td>3%</td>
<td>34%</td>
</tr>
<tr>
<td>Transportation &amp; Material Moving</td>
<td>1,881</td>
<td>$30.24</td>
<td>0%</td>
<td>93%</td>
<td>92%</td>
</tr>
<tr>
<td>Architecture &amp; Engineering</td>
<td>3,612</td>
<td>$42.84</td>
<td>2%</td>
<td>88%</td>
<td>98%</td>
</tr>
<tr>
<td>Management</td>
<td>3,145</td>
<td>$17.81</td>
<td>8%</td>
<td>20%</td>
<td>56%</td>
</tr>
<tr>
<td>Installation, Maintenance, &amp; Repair</td>
<td>11,108</td>
<td>$13.58</td>
<td>32%</td>
<td>12%</td>
<td>50%</td>
</tr>
<tr>
<td>Sales &amp; Related</td>
<td>2,876</td>
<td>$16.39</td>
<td>6%</td>
<td>23%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Source: DEED Job Vacancy Survey

Table 5. Twin Cities Occupational Employment & Wage Statistics, 2019

<table>
<thead>
<tr>
<th>SOC Occupational Title</th>
<th>Estimated Regional Employment</th>
<th>Regional Median Hourly Wage</th>
<th>Estimated Statewide Employment</th>
<th>Statewide Median Hourly Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, All Occupations</td>
<td>1,793,870</td>
<td>$22.78</td>
<td>2,867,700</td>
<td>$20.95</td>
</tr>
<tr>
<td>Production Occupations</td>
<td>114,080</td>
<td>$19.06</td>
<td>214,230</td>
<td>$18.68</td>
</tr>
<tr>
<td>Office &amp; Administrative Support</td>
<td>258,840</td>
<td>$20.18</td>
<td>405,970</td>
<td>$19.10</td>
</tr>
<tr>
<td>Transportation &amp; Material Moving</td>
<td>105,080</td>
<td>$18.69</td>
<td>177,580</td>
<td>$18.48</td>
</tr>
<tr>
<td>Architecture &amp; Engineering</td>
<td>41,330</td>
<td>$39.03</td>
<td>56,070</td>
<td>$37.53</td>
</tr>
<tr>
<td>Management</td>
<td>122,530</td>
<td>$56.09</td>
<td>171,250</td>
<td>$51.26</td>
</tr>
<tr>
<td>Installation, Maintenance, &amp; Repair</td>
<td>53,480</td>
<td>$24.30</td>
<td>100,030</td>
<td>$23.13</td>
</tr>
<tr>
<td>Sales &amp; Related</td>
<td>173,930</td>
<td>$16.28</td>
<td>277,070</td>
<td>$14.97</td>
</tr>
<tr>
<td>Business &amp; Financial Operations</td>
<td>130,070</td>
<td>$34.34</td>
<td>164,510</td>
<td>$33.03</td>
</tr>
<tr>
<td>Computer &amp; Mathematical</td>
<td>80,660</td>
<td>$42.40</td>
<td>96,020</td>
<td>$40.96</td>
</tr>
</tbody>
</table>

Source: DEED Occupational Employment Statistics (OES) program
Team assemblers, first-line supervisors, machinists, and more are the most common jobs found at manufacturing firms in Minnesota, according to DEED’s Occupational Staffing Matrix data. Median hourly wages for these manufacturing positions ranged from a low of about $14 for production helpers and packers and packagers to a high of about $30 per hour for first-line supervisors and tool and die makers. Almost all of the production-related manufacturing occupations can be gained with a high school diploma and learned through on-the-job training, though some also benefit from vocational training or associate degrees (see Table 6).

Table 6. Twin Cities Top 30 Production-related Manufacturing Occupations, 2019 Wage Data

<table>
<thead>
<tr>
<th>SOC Code</th>
<th>SOC Occupational Title</th>
<th>Estimated Regional Employment</th>
<th>Median Hourly Wage</th>
<th>Minnesota Educational Requirements for Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>512092</td>
<td>Team Assemblers</td>
<td>18,270</td>
<td>$16.07</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>511011</td>
<td>First-Line Supervisors of Production &amp; Operating Workers</td>
<td>5,950</td>
<td>$32.26</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>512099</td>
<td>Assemblers &amp; Fabricators, All Other</td>
<td>18,270</td>
<td>$16.07</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>514041</td>
<td>Machinists</td>
<td>7,580</td>
<td>$26.26</td>
<td>Vocational training</td>
</tr>
<tr>
<td>513023</td>
<td>Slaughterers &amp; Meat Packers</td>
<td>240</td>
<td>$13.50</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>519111</td>
<td>Packaging &amp; Filling Machine Operators &amp; Tenders</td>
<td>5,140</td>
<td>$16.34</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>514121</td>
<td>Welders, Cutters, Solderers, &amp; Brazers</td>
<td>3,350</td>
<td>$22.77</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>519061</td>
<td>Inspectors, Testers, Sorters, Samplers, &amp; Weighers</td>
<td>5,890</td>
<td>$21.06</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>537062</td>
<td>Laborers &amp; Freight, Stock, &amp; Material Movers, Hand</td>
<td>29,050</td>
<td>$16.86</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>514031</td>
<td>Cutting, Punching, &amp; Press Machine Setters, Metal/Plastic</td>
<td>3,280</td>
<td>$22.42</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>515112</td>
<td>Printing Press Operators</td>
<td>4,310</td>
<td>$22.35</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>499041</td>
<td>Industrial Machinery Mechanics</td>
<td>3,510</td>
<td>$28.29</td>
<td>Vocational training</td>
</tr>
<tr>
<td>512022</td>
<td>Electrical &amp; Electronic Equipment Assemblers</td>
<td>6,950</td>
<td>$17.85</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>519198</td>
<td>Helpers--Production Workers</td>
<td>4,870</td>
<td>$14.34</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>514011</td>
<td>Computer-Controlled Machine Tool Operators, Metal/Plastic</td>
<td>1,890</td>
<td>$23.65</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>537051</td>
<td>Industrial Truck &amp; Tractor Operators</td>
<td>3,260</td>
<td>$19.91</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>519199</td>
<td>Production Workers, All Other</td>
<td>2,450</td>
<td>$16.86</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>499071</td>
<td>Maintenance &amp; Repair Workers, General</td>
<td>13,250</td>
<td>$22.21</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>537064</td>
<td>Packers &amp; Packagers, Hand</td>
<td>6,690</td>
<td>$13.45</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>513099</td>
<td>All other food processing workers</td>
<td>250</td>
<td>$12.93</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>514072</td>
<td>Molding, Coremaking &amp; Casting Machine Setters &amp; Operators</td>
<td>2,210</td>
<td>$17.72</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>533032</td>
<td>Truck Drivers, Heavy &amp; Tractor-Trailer</td>
<td>15,830</td>
<td>$25.17</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>512023</td>
<td>Electromechanical Equipment Assemblers</td>
<td>6,950</td>
<td>$17.85</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>519121</td>
<td>Coating, Painting, &amp; Spraying Machine Setters &amp; Operators</td>
<td>1,490</td>
<td>$20.41</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>513092</td>
<td>Food Batchmakers</td>
<td>2,740</td>
<td>$16.30</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>519196</td>
<td>Paper Goods Machine Setters, Operators, &amp; Tenders</td>
<td>1,030</td>
<td>$18.84</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>515113</td>
<td>Print Binding &amp; Finishing Workers</td>
<td>1,610</td>
<td>$17.88</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>517011</td>
<td>Cabinetmakers &amp; Bench Carpenters</td>
<td>1,690</td>
<td>$20.82</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>519032</td>
<td>Cutting &amp; Slicing Machine Setters, Operators, &amp; Tenders</td>
<td>840</td>
<td>$19.31</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>514111</td>
<td>Tool &amp; Die Makers</td>
<td>1,210</td>
<td>$28.98</td>
<td>Vocational training</td>
</tr>
</tbody>
</table>

Source: DEED Occupational Employment Statistics (OES) program, Minnesota Educational Requirements for Occupations

In addition to the production-related occupations, manufacturers also rely heavily on sales and office workers including manufacturing sales representatives, customer service representatives, and production, planning, shipping, and traffic clerks; transportation and material moving workers such as truck drivers and packers and packagers; engineering occupations like industrial, mechanical, and electrical engineers; management positions such as industrial production and general managers; and business and financial operations occupations like accountants and auditors. Many of these occupations require higher education, but also offer higher wages (see Table 7).
Table 7. Twin Cities Top 20 Office-related Manufacturing Occupations, 2019 Wage Data

<table>
<thead>
<tr>
<th>SOC Code</th>
<th>SOC Occupational Title</th>
<th>Estimated Regional Employment</th>
<th>Median Hourly Wage</th>
<th>Minnesota Educational Requirements for Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>414012</td>
<td>Sales Representatives, Manufacturing, exc. Technical Products</td>
<td>22,620</td>
<td>$32.92</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>434051</td>
<td>Customer Service Representatives</td>
<td>42,490</td>
<td>$19.37</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>172112</td>
<td>Industrial Engineers</td>
<td>7,200</td>
<td>$43.97</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>111021</td>
<td>General &amp; Operations Managers</td>
<td>31,030</td>
<td>$50.99</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>435071</td>
<td>Shipping, Receiving, &amp; Traffic Clerks</td>
<td>10,360</td>
<td>$17.94</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>113051</td>
<td>Industrial Production Managers</td>
<td>3,230</td>
<td>$52.80</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>172141</td>
<td>Mechanical Engineers</td>
<td>6,220</td>
<td>$42.24</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>433031</td>
<td>Bookkeeping, Accounting, &amp; Auditing Clerks</td>
<td>18,930</td>
<td>$22.65</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>173026</td>
<td>Industrial Engineering Technicians</td>
<td>2,400</td>
<td>$25.76</td>
<td>Associate degree</td>
</tr>
<tr>
<td>131023</td>
<td>Purchasing Agents, exc. Wholesale, Retail &amp; Farm Products</td>
<td>#N/A</td>
<td>#N/A</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>439061</td>
<td>Office Clerks, General</td>
<td>32,840</td>
<td>$18.53</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>414011</td>
<td>Sales Representatives, Manufacturing, Technical Products</td>
<td>4,560</td>
<td>$37.92</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>435061</td>
<td>Production, Planning, &amp; Expediting Clerks</td>
<td>3,630</td>
<td>$24.88</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>132011</td>
<td>Accountants &amp; Auditors</td>
<td>17,240</td>
<td>$33.47</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>435081</td>
<td>Stock Clerks &amp; Order Fillers</td>
<td>21,480</td>
<td>$14.40</td>
<td>High School or equiv.</td>
</tr>
<tr>
<td>119041</td>
<td>Engineering Managers</td>
<td>3,290</td>
<td>$70.34</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>172071</td>
<td>Electrical Engineers</td>
<td>2,940</td>
<td>$47.63</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>151133</td>
<td>Software Developers, Systems Software</td>
<td>4,940</td>
<td>$55.69</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>151132</td>
<td>Software Developers, Applications</td>
<td>17,590</td>
<td>$47.32</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>173023</td>
<td>Electrical &amp; Electronic Engineering Technicians</td>
<td>1,140</td>
<td>$31.31</td>
<td>Associate degree</td>
</tr>
</tbody>
</table>

Source: DEED Occupational Employment Statistics (OES) program, Minnesota Educational Requirements for Occupations

Industry Outlook

According to DEED’s 2016 to 2026 Employment Outlook data, the Twin Cities manufacturing industry is projected to lose another 9,500 jobs over the next decade, a 5.5% decline. That is in contrast to overall growth of 6.8% in the total of all industries in the Twin Cities, but is in line with the state of Minnesota as a whole, which is projected to lose about 5,400 manufacturing jobs from 2016 to 2026, a 1.7% decline.

Though it is home to about 53% of total manufacturing employment in the state, the employment projections would mean that the Twin Cities would account for about 70% of the state’s manufacturing losses over the next decade.

Sixteen of the 20 sectors are expected to see job declines in the next decade, with the most severe losses projected in Printing and Related Support Activities, Fabricated Metal Product Manufacturing, and Machinery Manufacturing. Those three industries are expected to account for over half (58.5%) of the region’s total job decline.

Likewise, the region is expected to see big job declines in Paper Manufacturing and Computer and Electronic Product Manufacturing, as well as huge percentage losses in Textile Product Mills, Leather and Allied Product Manufacturing, and Apparel Manufacturing. In contrast, the only sector that is projected to have significant job growth is Electrical Equipment, Appliance, and Component Manufacturing and Miscellaneous Manufacturing (see Table 8).
Occupational Outlook

The projected job losses in the manufacturing industry are expected to carry over into production occupations as well, leading to a projected 5.0% decline from 2016 to 2026 in the Twin Cities. However, the region is still expected to have significant demand for production workers over the next ten years due to a large number of labor force exit openings – jobs that become available because the existing worker retires out of the labor force. There may be as many as 125,871 total openings for production occupations in the region, including occupation transfer openings, or jobs that open up due to a worker changing careers.

However, 26 of the 78 production occupations are expected to see new job growth from 2016 to 2026, led by Helpers – Production Workers, Bakers, Butchers, and Meat Cutters, Dental Laboratory Technicians, Ophthalmic Laboratory Technicians, Food Processing Workers, All Others, Computer Numerical Controlled Machine Tool Programmer, and Medical Appliance Technicians, which are all projected to grow more than 5 percent.

In contrast, the biggest declines are projected for Team Assemblers, Electrical Equipment Assemblers, Assemblers and Fabricators, All Other, Inspectors, Testers, Sorters, Samplers, and Weighers, Cutting, Punching, and Press Machine Setters, Printing Press Operators, Print Binding and Finishing Workers, and Paper Goods Machine Setters, which are all expected to lose more than 200 jobs in the next 10 years.

Regardless of growth or decline, every occupation is expected to at least have some total openings from 2016 to 2026 due to labor force exits and occupations transfers. The largest number of total openings are projected for Team Assemblers, Production Helpers, Machinists, Packaging and Filling Machine
Operators, and Assemblers and Fabricators, which are all expected to have at least 6,000 total openings in the region (see Table 9).

Table 9. Top 25 Twin Cities Production Occupation Projections, 2016-2026

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Total, All Occupations</td>
<td>1,878,351</td>
<td>2,066,300</td>
<td>+6.8%</td>
<td>+127,949</td>
<td>+881,956</td>
</tr>
<tr>
<td>510000</td>
<td>Production Occupations</td>
<td>119,335</td>
<td>113,345</td>
<td>-5.0%</td>
<td>-5,990</td>
<td>+49,591</td>
</tr>
<tr>
<td>512092</td>
<td>Team Assemblers</td>
<td>13,372</td>
<td>11,444</td>
<td>-14.4%</td>
<td>-1,928</td>
<td>+5,299</td>
</tr>
<tr>
<td>519198</td>
<td>Helpers—Production Workers</td>
<td>6,241</td>
<td>7,300</td>
<td>+17.0%</td>
<td>+1,059</td>
<td>+3,630</td>
</tr>
<tr>
<td>514041</td>
<td>Machinists</td>
<td>7,588</td>
<td>7,641</td>
<td>+0.7%</td>
<td>+53</td>
<td>+2,645</td>
</tr>
<tr>
<td>512099</td>
<td>Assemblers &amp; Fabricators, All Other</td>
<td>4,998</td>
<td>4,167</td>
<td>-16.6%</td>
<td>-831</td>
<td>+1,957</td>
</tr>
<tr>
<td>511011</td>
<td>First-Line Supervisors of Production Workers</td>
<td>6,130</td>
<td>6,109</td>
<td>-0.3%</td>
<td>-21</td>
<td>+1,951</td>
</tr>
<tr>
<td>519111</td>
<td>Packaging &amp; Filling Machine Operators</td>
<td>5,548</td>
<td>5,491</td>
<td>-1.0%</td>
<td>-57</td>
<td>+2,609</td>
</tr>
<tr>
<td>512022</td>
<td>Electrical &amp; Electronic Equipment Assemblers</td>
<td>6,838</td>
<td>5,663</td>
<td>-17.2%</td>
<td>-1,175</td>
<td>+3,168</td>
</tr>
<tr>
<td>519061</td>
<td>Inspectors, Testers, Sorters &amp; Weighers</td>
<td>5,290</td>
<td>4,575</td>
<td>-13.5%</td>
<td>-715</td>
<td>+2,050</td>
</tr>
<tr>
<td>519199</td>
<td>Production Workers, All Other</td>
<td>3,090</td>
<td>3,145</td>
<td>+1.8%</td>
<td>+55</td>
<td>+1,225</td>
</tr>
<tr>
<td>514031</td>
<td>Cutting, Punching, &amp; Press Machine Setters</td>
<td>4,456</td>
<td>4,041</td>
<td>-9.3%</td>
<td>-415</td>
<td>+1,537</td>
</tr>
<tr>
<td>515112</td>
<td>Printing Press Operators</td>
<td>4,281</td>
<td>3,992</td>
<td>-6.8%</td>
<td>-289</td>
<td>+1,610</td>
</tr>
<tr>
<td>514011</td>
<td>Computer-Controlled Machine Tool Operators</td>
<td>2,715</td>
<td>2,631</td>
<td>-3.1%</td>
<td>-84</td>
<td>+738</td>
</tr>
<tr>
<td>514121</td>
<td>Welders, Cutters, Solderers, &amp; Brazers</td>
<td>3,383</td>
<td>3,342</td>
<td>-1.2%</td>
<td>-41</td>
<td>+895</td>
</tr>
<tr>
<td>513011</td>
<td>Bakers</td>
<td>2,218</td>
<td>2,396</td>
<td>+8.0%</td>
<td>+178</td>
<td>+1,481</td>
</tr>
<tr>
<td>516011</td>
<td>Laundry &amp; Dry-Cleaning Workers</td>
<td>1,777</td>
<td>1,800</td>
<td>+1.3%</td>
<td>+23</td>
<td>+1,198</td>
</tr>
<tr>
<td>513099</td>
<td>Food Processing Workers, All Other</td>
<td>651</td>
<td>717</td>
<td>+10.1%</td>
<td>+66</td>
<td>+294</td>
</tr>
<tr>
<td>514072</td>
<td>Molding, Coremaking &amp; Casting Machine</td>
<td>1,432</td>
<td>1,263</td>
<td>-11.8%</td>
<td>-169</td>
<td>+493</td>
</tr>
<tr>
<td>518031</td>
<td>Water/Wastewater Treatment Plant Oper.</td>
<td>924</td>
<td>923</td>
<td>-0.1%</td>
<td>-1</td>
<td>+263</td>
</tr>
<tr>
<td>515113</td>
<td>Print Binding &amp; Finishing Workers</td>
<td>2,626</td>
<td>2,410</td>
<td>-8.2%</td>
<td>-216</td>
<td>+1,910</td>
</tr>
<tr>
<td>516031</td>
<td>Sewing Machine Operators</td>
<td>1,228</td>
<td>1,141</td>
<td>-7.1%</td>
<td>-87</td>
<td>+673</td>
</tr>
<tr>
<td>519121</td>
<td>Coating, Painting, &amp; Spraying Machine Setters</td>
<td>1,352</td>
<td>1,334</td>
<td>-1.3%</td>
<td>-18</td>
<td>+383</td>
</tr>
<tr>
<td>513021</td>
<td>Butchers &amp; Meat Cutters</td>
<td>1,351</td>
<td>1,463</td>
<td>+8.3%</td>
<td>+112</td>
<td>+632</td>
</tr>
<tr>
<td>513092</td>
<td>Food Batchmakers</td>
<td>2,211</td>
<td>2,286</td>
<td>+3.4%</td>
<td>+75</td>
<td>+1,235</td>
</tr>
<tr>
<td>517011</td>
<td>Cabinetmakers &amp; Bench Carpenters</td>
<td>1,241</td>
<td>1,257</td>
<td>+1.3%</td>
<td>+16</td>
<td>+583</td>
</tr>
<tr>
<td>512041</td>
<td>Structural Metal Fabricators &amp; Fitters</td>
<td>499</td>
<td>398</td>
<td>-20.2%</td>
<td>-101</td>
<td>+155</td>
</tr>
</tbody>
</table>

* Labor Force exit Openings are the projected number of workers leaving an occupation and exiting the labor market entirely (most labor force exits are related to workers retiring)

Source: DEED Employment Outlook

For more information about Manufacturing in the Twin Cities, contact:

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http://www.mn.gov/deed/data/regional-lmi/metro-lmi.jsp

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