



Minnesota Job Outlook to 2022

Total jobs in Minnesota are projected to increase by 205,000 between 2012 and 2022, reaching over 3.1 million jobs by 2022, according to recently released 2012-2022 Minnesota employment projections.¹ The projected growth is seven times as large as job growth over the previous 10 years (2002-2012) when the state added just 29,000 jobs as the state's economy struggled through the most severe recession since the Great Depression. Recovery from the steep job losses suffered during the Great Recession has been slow with the pre-recession peak in 2007 expected to be passed in 2014. Projected jobs include wage and salary employment as well as self-employment with all jobs measured on an annual average basis. Wage and salary jobs reached the pre-recession peak in September 2013, but self-employment, which declined significantly more than wage and salary employment during the recession, has been much slower to rebound.

Job growth has averaged 1.4 percent since 2011 and will continue around this pace for the next several years before waning during the second half of the decade. Baby-boom retirements will slow labor force growth later in the decade, hampering job growth. The moderate job growth combined with slower labor force growth will push Minnesota's unemployment down well below 4 percent within the next few years.

Job growth over the next decade will average 0.7 percent a year or about half the rate experienced during the last couple of years. Job growth between 2012 and 2017 will be similar to recent years but will fall off significantly from 2017-2022 as labor shortages limit job expansion. After adding roughly 46,000 jobs each year between 1992 and 2002, then adding fewer than 3,000 jobs annually between 2002 and 2012, the state is projected to add an average of 20,500 jobs annually over the next decade with most of the growth occurring during the next five years.

Minnesota's long-term industry and occupational employment projections (10-year timeframe) rely heavily on national industry and occupational employment projections produced by the U.S. Department of Labor's Bureau of Labor Statistics (BLS).² Minnesota, along with most other states, customizes national projections to reflect state specific industrial, occupational, and demographic traits. Historical employment trends for 290 industries in Minnesota are compared to corresponding national industry employment trends using statistical models (time-series and regression models). The models are used with BLS's projections of 2022 national industry employment to produce industry projections for Minnesota.

The key macroeconomic assumptions driving the 2012-2022 national industry projections are:

1. GDP (Gross Domestic Product) growth will average 2.6 percent annually during the 10-year period, up from the 1.6 percent annual average experienced during the previous decade, but slower than the 3.4 percent growth achieved between 1992 and 2002.
2. Productivity growth will increase slightly over the next 10 years, averaging 2.0 percent between 2012 and 2022 compared to the 1.9 percent average experienced between 2002 and 2012. The 2.0 percent annual productivity gain will be down from the 2.3 percent achieved between 1992 and 2002.
3. U.S. labor force growth will inch down over the next 10 years averaging 0.5 percent a year compared to the 0.7 percent annual average of the previous 10 years. Labor force growth between 1992 and 2002 averaged 1.2 percent annually.

¹Detailed 2012 – 2022 occupational and industry employment projections for Minnesota can be found at <https://apps.deed.state.mn.us/lmi/projections>.

²The BLS's main projection website is www.bls.gov/emp/home.htm.

4. Unemployment will average 5.4 percent in 2022, a huge improvement over the 8.1 percent averaged in 2012 and the same as in 2002.

Projected industry employment is converted into occupational employment projections based on industry staffing patterns (distribution of industry employment across occupations). Staffing patterns for Minnesota industries are developed from estimates of occupational employment collected by the Minnesota Salary Survey, a product



of the Occupational Employment Statistics (OES) program.³ Shifts in staffing patterns between 2012 and 2022 across industries are also projected as part of the BLS national projections. These shifts in staffing patterns are used in Minnesota's projections. For example, accountants and auditors jobs (SOC 13-2011) accounted for 45.1 percent of the accounting industry's (NAICS 5412) workforce in 2012. By 2022 that percentage is expected to be 48.1 percent.

The main goal of employment projections is to provide details on projected job growth and employment prospects for 809 occupations in Minnesota. Projections of future job growth at the national, state, and substate level are widely used in career guidance, in planning education and training programs, and in workforce development efforts in the private and public sectors.

Changes in demand for goods and services, productivity advances, technological innovations, and shifts in business practices all combine to alter the mix of occupations that employers will be looking to fill over the next 10 years. Another important factor in what occupations will be in demand over the next decade is the retirement wave of the baby boomers. Job openings arising from retirements are always higher than job openings created by employment growth.

The expected expansion of health care services over the next 10 years is a prime example of how changes in the demand for goods and services fuel demand for particular occupations. As the baby boomers enter their senior years, demand for health care services will increase steadily. Increasing health care service expenditures will in turn boost the demand for workers in health care-related jobs like registered nurses, pharmacists, dental assistants, personal care aides, and home health aides both nationally and in Minnesota.

On the other hand almost half of the occupations included in the office and administrative support occupational group are expected to shrink. Automation of duties will continue to increase productivity thereby reducing demand for employees in these occupations. The declining occupations include: stock clerks and order fillers, data entry keyers, reservation and transportation ticket agents, and switchboard operators.

A majority of occupations in Minnesota will experience employment growth over the next 10 years. Eighteen occupations are expected to see no change in the number of workers. The other 159 occupations (roughly 20 percent of all occupations) are projected to decline.

The 159 shrinking occupations combined together accounted for roughly 408,000 jobs or 14 percent of total jobs in 2012. The number of jobs in these occupations is projected to tail off to 384,000 by 2022, an aggregated 6 percent drop. Declining occupations are concentrated in the office and administrative support, production, and management occupational groups. Almost all of the job loss in the managerial group is expected to be farmers, ranchers, and other agricultural managers. Minnesota farmers (46,500 in 2012), are projected to slip to 44,300 by 2022, and are included in the managerial occupation group. Other occupations expected to see their numbers shrink the most over the next 10 years are stock clerks and order fillers, postal service mail carriers, data entry keyers, cashiers, and executive secretaries and administrative assistants.

Minnesota's total employment is projected to climb 7.0 percent over the 2012-2022 period compared to the 10.8 percent projected for U.S. employment over the same time period. Minnesota's employment growth trailed the U.S. pace during the previous 10 years, 1.0 percent for

³Information on the Minnesota Salary Survey is available at <http://mn.gov/deed/data/data-tools/oes.jsp>

Table 1

Minnesota Employment Outlook by Major Occupational Group				
Major Occupational Group	2012 Estimated Employment	2022 Projected Employment	2012 - 2022 Percent Change	2012 - 2022 Numeric Change
	2,915,400	3,120,400	7.0	205,000
Service	609,041	680,396	11.7	71,355
Professional and related	614,894	668,410	8.7	53,516
Management, business, and financial	376,925	398,372	5.7	21,447
Construction and extraction	101,738	119,999	17.9	18,261
Sales and related	289,184	301,800	4.4	12,616
Office and administrative support	419,024	428,236	2.2	9,212
Transportation and material moving	170,769	178,050	4.3	7,281
Installation, maintenance, and repair	96,776	103,230	6.7	6,454
Production	220,698	225,578	2.2	4,880
Farming, fishing, and forestry	16,352	16,329	-0.1	-23

the state compared to 2.2 percent nationwide.

The two largest major occupational groups in Minnesota — professional and related occupations and service occupations — will add the most jobs from 2012 to 2022 (see Table 1). These two major occupational groups, which tend to have occupations at the opposite ends of the educational attainment and earnings range, are projected to account for 61 percent of all employment growth over the next 10 years.

The fastest growing occupational group will be construction and extraction jobs. This group, fueled by a recovering construction industry, is anticipated to expand by over 17.9 percent or more than twice as fast as the overall rate of job growth. The six-year home building collapse pushed construction employment down by nearly 30 percent from its record high in 2005. The gradual home-building rebound will increase construction employment over the next 10 years but not to the housing bubble level in 2005.

All major occupational groups except farming, fishing, and forestry are expected to add jobs between 2012 and 2022. Even production occupations

which are concentrated in Minnesota's manufacturing sector are expected to increase although manufacturing employment is expected to decline slightly. Minnesota's manufacturing employment is projected to decline by 1.3 percent compared to a projected 4.6 percent drop for U.S. manufacturing between 2012 and 2022. Production jobs nationwide are projected to expand 0.8 percent over the time period while in Minnesota the increase is projected to be 2.2 percent. Most of the 5,000 job increase in production occupations will occur in the employment services industry (NAICS 5613) as Minnesota manufacturing companies increasingly turn to temporary staffing agencies to meet their staffing demands.

Almost half of office and administrative support occupations are expected to see employment numbers shrink over the next 10 years, but other occupations within the group which are employed across many industries will increase in numbers as the economy grows. The expanding office and administrative support occupations will add 19,200 positions over the next 10 years, but that job growth will be offset by the loss of 10,000 positions in the shrinking occupations.

Only three occupational groups will experience job growth above overall job growth over the next 10 years — construction and extraction, service, and professional and related. Management, business and financial jobs along with installation, maintenance and repair jobs will expand slightly slower than average job growth. Sales and related occupations will expand 4.4 percent with just over half of the projected increase occurring in retail salesperson positions. Farming, fishing, and forestry jobs will essentially be the same in 2022 as they are today.

Job growth is predicted to be concentrated in the 305 occupations projected to grow faster than overall employment. These fast growing occupations are anticipated to account for roughly 80 percent of new jobs. The rest of employment expansion will occur in the other 327 occupations expected to add workers during the next 10 years but at a slower pace than the 7 percent projected average. Roughly 24,100 positions are expected to be lost across 159 shrinking occupations. The declining occupations accounted for 14 percent of all employment in 2012 and are expected to account for 12.3 percent of all jobs by 2022.

Table 2

Fastest Growing Occupations		
	2012 - 2022 Percent Change	2012 - 2022 Numeric Change
Personal Care Aides	44.7	22,595
Physician Assistants	34.5	571
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	33.3	270
Helpers—Carpenters	32.9	169
Brickmasons and Blockmasons	31.9	437
Interpreters and Translators	31.4	468
Diagnostic Medical Sonographers	31.1	430
Cement Masons and Concrete Finishers	30.7	900
Plasterers and Stucco Masons	30.1	239
Meeting, Convention, and Event Planners	29.8	582
Home Health Aides	29.3	10,131
Medical Equipment Repairers	26.8	351
Statisticians	26.2	182
Nurse Practitioners	26.1	721
Actuaries	25.6	208
Biochemists and Biophysicists	25.2	142
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	25.2	400
Substance Abuse and Behavioral Disorder Counselors	25.0	489
Crane and Tower Operators	24.7	222
Paving, Surfacing, and Tamping Equipment Operators	24.4	315
Physical Therapist Assistants	24.4	265
Medical Secretaries	24.3	1,914
Skincare Specialists	23.9	272
Magnetic Resonance Imaging Technologists	23.9	199
Veterinary Technologists and Technicians	23.8	412
Medical and Clinical Laboratory Technicians	23.4	767
Cardiovascular Technologists and Technicians	23.2	213
Carpenters	22.9	4,491
Physical Therapists	22.7	779
Phlebotomists	22.5	551
Refuse and Recyclable Material Collectors	22.3	599
Market Research Analysts and Marketing Specialists	22.1	2,511
Anesthesiologists	21.6	285
Ophthalmic Medical Technicians	21.3	144
Surgeons	21.2	209
Credit Counselors	21.0	215
Health Technologists and Technicians, All Other	20.8	314
Radiologic Technologists	20.7	796
Operations Research Analysts	20.2	325
Glaziers	20.0	110
Structural Iron and Steel Workers	19.9	110
Medical Equipment Preparers	19.8	337
Information Security Analysts	19.7	261
Septic Tank Servicers and Sewer Pipe Cleaners	19.7	106
Medical Assistants	19.7	1,693
Telecommunications Line Installers and Repairers	19.7	325
Logisticians	19.6	498
Occupational Therapy Assistants	19.6	114
Plumbers, Pipefitters, and Steamfitters	19.1	1,520
Mental Health Counselors	19.1	430

The top 50 occupations, in terms of the number of workers employed, accounted for approximately 50 percent of all employment in Minnesota in 2012. The largest occupations range from retail salespersons (85,800 jobs) to software developers — applications (12,900). Employment growth in these large occupations will account for 57 percent of the new jobs. Four of the largest occupations, however, are expected to see their workforce numbers shrink — farmers, ranchers, and other agricultural managers, stock clerks and order fillers, cashiers, and executive secretaries and executive administrative assistants.

The top 50 fastest-growing occupations among occupations with employment of more than 500 workers in 2012 combined for just over 7 percent of the 2012 employment base but are anticipated to account for just under 30 percent of jobs created over the next 10 years. These fast-growing occupations are projected to grow by 19 percent or higher or at rates nearly three times or higher than overall job growth.

As presented above, projected employment growth can be viewed from two perspectives: percent change and numerical change. Some occupations, which start with a large number of workers in 2012, are projected to grow slower than overall employment growth but will add large number of workers by 2022. Other occupations, which have relatively small numbers of worker in 2012, are projected to grow rapidly over the next 10 years but will add relatively few new jobs. The distinction between occupations with fast employment growth and occupations expected to add the most jobs is apparent when the 50 fastest-growing occupations (see Table 2) are compared to the 50 occupations expected to add the most jobs (see Table 3).

Only seven occupations — carpenters, home health aides, market research analysts, medical assistants, medical



secretaries, personal care aides, and plumbers, pipefitters, and steamfitters — make both lists. Fast-growing occupations tend to be either health care or construction occupations. Occupations adding the most jobs tend to be occupations that are employed across most industries, have a relative large base of workers in 2012, and are projected to experience average employment growth over the next 10 years.

Job opportunities tend to be better in occupations that are growing, but new openings created by employment growth are only part of the future job opportunity picture. The chance of scoring a job in a particular occupation also depends on how many workers are leaving the occupation and on how many job seekers are looking to enter that occupation.

There were an estimated 85,800 workers employed in the Minnesota's largest occupation, retail salespersons in 2012. By 2022 the state is expected have nearly 92,500 retail salespersons. The 6,700 new retail salesperson jobs expected over the next 10 years will represent 7 percent of all retail salesperson jobs in 2022, the other 83 percent of retail salesperson jobs already exist.

Many of the 85,800 individuals working as retail salespersons in 2012,

however, will not be working as retail salespersons in 2022. Workers will switch occupations, retire, or leave the labor force for other reasons thereby creating job openings. An estimated 29,300 net replacement openings for retail salespersons will develop during the next 10 years as current retail salesperson leave the occupation. For most occupations the number of job openings arising from the need to replace workers, net replacement openings, is projected to be higher than job openings from employment growth.

Even occupations that are expected to decline in numbers over the next 10 years will have replacement openings. Fewer postal service mail carriers are projected to be employed in Minnesota in 2022 than in 2012 (6,000 vs. 4,400), but many of the men and women working as postal service mail carriers in 2022 will have been hired over the last 10 years, filling mail carriers jobs that opened as workers moved to other occupations or retired. More than 2,000 net replacement mail carriers job openings will need to be filled over the next 10 years.

Because of the importance of replacement needs, estimates of net replacement openings for each occupation over the next 10 years are included in the 2012-

Table 3

Occupations Adding the Most Jobs

	2012 - 2022 Percent Change	2012 - 2022 Numeric Change
Personal Care Aides	44.7	22,595
Home Health Aides	29.3	10,131
Registered Nurses	16.9	9,477
Retail Salespersons	7.8	6,655
Combined Food Preparation and Serving Workers, Including Fast Food	9.7	5,465
Carpenters	22.9	4,491
Childcare Workers	13.0	4,006
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	8.2	3,777
Licensed Practical and Licensed Vocational Nurses	18.6	3,239
Customer Service Representatives	6.7	3,218
General and Operations Managers	7.7	2,836
Social and Human Service Assistants	15.6	2,825
Bookkeeping, Accounting, and Auditing Clerks	7.1	2,779
Nursing Assistants	9.1	2,742
Maids and Housekeeping Cleaners	10.0	2,742
Heavy and Tractor-Trailer Truck Drivers	7.1	2,543
Market Research Analysts and Marketing Specialists	22.1	2,511
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	10.2	2,463
Cooks, Restaurant	9.2	2,271
Computer Systems Analysts	17.0	2,227
Medical Secretaries	24.3	1,914
Construction Laborers	16.8	1,862
Accountants and Auditors	7.2	1,854
Electricians	16.0	1,740
Medical Assistants	19.7	1,693
Sales Representatives, Services, All Other	10.9	1,676
Management Analysts	13.1	1,534
First-Line Supervisors of Office and Administrative Support Workers	6.4	1,528
Plumbers, Pipefitters, and Steamfitters	19.1	1,520
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4.8	1,499
Assemblers and Fabricators, All Other	8.8	1,454
Operating Engineers and Other Construction Equipment Operators	16.9	1,408
Landscaping and Groundskeeping Workers	8.3	1,390
Software Developers, Applications	10.7	1,379
Laborers and Freight, Stock, and Material Movers, Hand	4.1	1,363
First-Line Supervisors of Construction Trades and Extraction Workers	17.7	1,286
Business Operations Specialists, All Other	4.9	1,277
Machinists	11.7	1,264
Teacher Assistants	3.8	1,259
Office Clerks, General	2.1	1,219
Computer User Support Specialists	11.0	1,198
Painters, Construction and Maintenance	18.0	1,194
Industrial Machinery Mechanics	18.0	1,152
Maintenance and Repair Workers, General	5.8	1,149
Receptionists and Information Clerks	5.4	1,135
First-Line Supervisors of Food Preparation and Serving Workers	7.6	1,101
Billing and Posting Clerks	11.3	1,096
Food Servers, Nonrestaurant	16.7	1,076
Medical and Health Services Managers	17.4	1,055
First-Line Supervisors of Retail Sales Workers	4.2	1,037

2022 employment projections for Minnesota. Net replacement openings, entrants minus separations, are based on nationwide census data which track the entrants and separations of an occupation by age cohorts. The net replacement opening estimates understate the total number of job openings in an occupation over the next 10 years but are the best available estimates of job openings available to new labor force entrants.

In addition to the 205,000 job openings projected to be created through employment growth over the next 10 years, roughly 674,000 net replacement openings are projected. Occupations with high number of net replacement openings tend to be occupations with large employment bases in 2012 and high turnover rates (see Table 4). Nearly 90 percent of the occupations are projected to have more net replacement openings than

openings from employment growth. Net replacement openings should be considered when exploring the future prospects of any occupation. The need to fill replacement openings will only increase over the next decade as the wave of baby boomers retiring swamps Minnesota's job market.

by Dave Senf
Labor Market Information Office
Minnesota Department of Employment
and Economic Development

Table 4

Most Net Replacement Openings		
	Net Replacement Openings 2012 - 2022	Job Openings from Employment Growth 2012 - 2022
Retail Salespersons	29,346	6,655
Cashiers	25,695	0
Waiters and Waitresses	23,393	515
Combined Food Preparation and Serving Workers, Including Fast Food	21,428	5,465
Customer Service Representatives	13,060	3,218
Office Clerks, General	12,208	1,219
Registered Nurses	10,848	9,477
Stock Clerks and Order Fillers	10,442	0
Laborers and Freight, Stock, and Material Movers, Hand	10,203	1,363
Childcare Workers	9,073	4,006
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	8,682	3,777
Accountants and Auditors	7,622	1,854
Teacher Assistants	7,539	1,259
Farmers, Ranchers, and Other Agricultural Managers	7,502	0
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	7,350	0
General and Operations Managers	6,896	2,836
Home Health Aides	6,566	10,131
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	6,118	1,499
Heavy and Tractor-Trailer Truck Drivers	5,747	2,543
Nursing Assistants	5,741	2,742