



Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

About the Job Connector Toolkit

The [Job Connector Toolkit](#) features industry and occupationally specific information for each of Baltimore County's nine targeted industry clusters. The primary audiences for this Toolkit are American Job Center (AJC) and business services staff, jobseekers, and regional employers.

The goals of the [Job Connector Toolkit](#) are to:

- Provide area employers with current economic and labor market information to support their growth in Baltimore County;
- Equip American Job Center (AJC) staff to counsel job seekers about promising careers in the high-growth industries bringing thousands of jobs to the region;
- Provide jobseekers with information on the skills and credentials that are in the highest demand with Baltimore County's employers;
- Exemplify a data-driven approach to matching jobseekers with in-demand occupations in the Baltimore Region; and
- Provide a framework, resources, and tools to implement and sustain career pathway programs.

The [Job Connector Toolkit](#) is organized around nine targeted industry clusters. Recently, the Baltimore County Department of Economic and Workforce Development (DEWD) commissioned a labor market study, the *Jobs of the Future* report, that identified nine industry clusters that **are projected to drive more than 75% of Baltimore County's employment growth over the next decade.**

Baltimore County's Nine Targeted Industry Clusters

- Transportation, Distribution, and Logistics (TDL)
- Construction
- Manufacturing
- Education
- Healthcare
- Government – Federal, State, and Local
- Financial Services
- Professional and Business Services
- Information Technology

By prioritizing these industry clusters, the Baltimore County workforce system can more effectively match workforce supply with employer demand in these growth areas of the economy.



The Case for an Industry-Specific Approach

A central focus of the new Workforce Innovation and Opportunity Act (WIOA) is the establishment of industry-focused approaches in an effort to build a skilled workforce. Such approaches are proving to be one of the most effective ways to align service providers to meet the talent needs of employers. Through better alignment of education, training, and employment services, industry-specific strategies hold the promise of increasing the number of workers in Baltimore County and the region who gain the industry-recognized and academic credentials they need to work in the most in-demand occupations.

Industry-specific workforce initiatives target an occupation or a set of occupations within an industry based on demand and access to employment opportunities that provide family-sustaining wages. As a result, these initiatives become deeply engaged in and add value to the industry and employers they target.

On the jobseeker side, industry-specific workforce initiatives excel at leveraging employment opportunities for individuals with barriers to employment. Because an industry-specific approach is designed to meet employer needs, there are ample opportunities to target training and support services to overcome the hurdles that have kept disconnected jobseekers from finding employment in the past.

The Job Connector Toolkit is just one resource to support the Baltimore County workforce system's efforts to focus programs and initiatives that can meet employers' talent needs by directly linking job training with job creation.

Using the Job Connector Toolkit

The Job Connector Toolkit features a 4-page economic and occupational overview for each of Baltimore County's nine targeted industries.

Page 1: Industry Overview – Key economic and labor market data on the local, regional, and state level.

Page 2: Occupational Overview – An overview of career clusters within each industry and in-demand occupation summaries.

Page 3: Spotlight Jobs – Featured middle-skilled occupations with projected high growth.

Page 4: In-Demand Occupations – A detailed list of employment and wage data for leading entry- and middle-skilled occupations in the industry.

The Toolkit also features supplemental information and resources as appendices. The data will be researched and updated annually.

Using The Job Connector Toolkit

WORKFORCE PROFESSIONALS & SYSTEM PARTNERS

The Job Connector Toolkit provides an overview of the economic impact that Baltimore County's targeted industries have on the region, along with "at-a-glance" reference sheets highlighting key occupational data for each. Counselors and other workforce professionals working with students, job-seekers and transitioning workers can use these resources to:

- Educate themselves on labor market information to guide customers in making informed decisions about their employment and training goals.
- Develop more comprehensive employment plans for individuals, using the data in tandem with career aptitude and assessment tools.
- Provide job seekers with components of the Toolkit that are most helpful in their research activities.
- Maximize the effectiveness and return on investment of federal and local funding resources.

Education and training professionals can use the data to:

- Create training options for traditional and non-traditional learners that yield the education, credentials, and workplace skills they will need to be competitive as entrants to targeted career pathways.
- Identify the skills and industry-recognized credentials in highest demand among local employers within the targeted industries to customize currently available training curricula to meet those needs.

JOB SEEKERS & TRANSITIONING WORKERS

While job seekers need new skills and certifications to keep up with the ever-changing demands of today's employers, it is equally important for them to understand the correlation between local economic trends and access to opportunities that fit their individual career goals. Individuals at any phase of their careers can use the Toolkit to:

- Identify how transferrable knowledge, skills, and credentials can translate into one or several in-demand occupations within Baltimore County's targeted industries.
- Research further into the skills, credentials, and experience required for high-demand occupations.
- Compare wage data and employment numbers to better understand earnings potential and advancement options over the course of a career.

EMPLOYERS, BUSINESS & INDUSTRY











Identifying and closing skill gaps in the workforce means businesses can be more productive and competitive. Business and industry leaders are encouraged to:

- Share insights on changes in occupational demand, educational requirements, industry-recognized credentials, wages, and the economic trends impacting their workforce.
- Provide feedback on the workplace readiness and professional skills required of your workforce.
- Use the data to understand the economic impact of Baltimore County's business communities when considering starting, expanding, or maintaining a business in Baltimore County.
- Participate as stakeholders in the local workforce system to continue developing a highly-skilled talent pipeline to keep up with anticipated job growth in each of the targeted industries.



Job Connector Toolkit

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Transportation, Distribution & Logistics



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INDUSTRY PROFILE

Transportation, Distribution & Logistics

Baltimore County's strategic East Coast location makes it a critical hub for the Transportation, Distribution & Logistics (TDL) industry, which is central to the region's economy. With strong locational assets, including access to one of the nation's leading ports, miles of rail and major highways, the TDL industry is well situated for continued robustness and growth.

Regional Impacts

235,811
Jobs

\$10 Billion
Associated Worker
Income

Over 14,000
Employers



Statewide Impacts

461,148
Jobs

\$20 Billion
Associated Worker
Income

Over 33,000
Employers

Baltimore County, MD

Baltimore County is home to the 3rd highest number of TDL employers in Maryland.

Northern Central

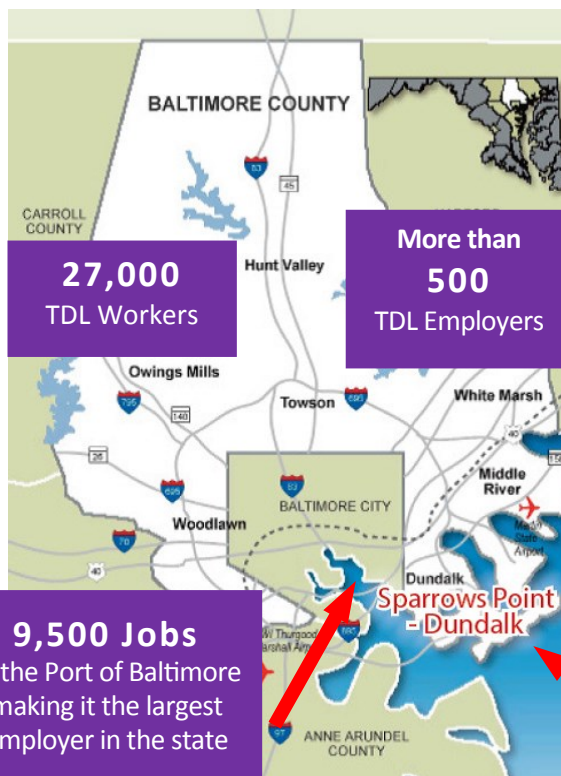
The Hunt Valley I-83 Corridor features a diversified business community with major corporate headquarters and global distribution operations.

- Coty (Formerly Proctor & Gamble)
- Element Fleet Management
- Stanley Black & Decker

Western

The Western Corridor features Industrial and Logistics/Distribution Hubs with direct interstate access.

- Bakery Express Warehouse
- Cowan Systems
- UPS Supply Chain Solutions
- Woodlawn Motor Coach



Eastern

Businesses on the County's East side access the locational assets of Sparrows Point-Dundalk for their TDL operations.

- Alexander's Mobility
- Amazon Fulfillment Center
- General Motors
- Evergreen Shipping Agency
- Pasha Automotive
- Access World
- Sparrows Point Shipyard
- Under Armour
- FedEx Ground

TRADEPOINT ATLANTIC:

The redevelopment of Sparrows Point into a world class multi-modal logistics hub is projected to add

17,000 Jobs
in Baltimore County

Data Source: Maryland's Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



OCCUPATIONAL PROFILE

Transportation, Distribution & Logistics

Baltimore County's TDL industry has grown significantly in the past decade, thanks to the presence of several corporate headquarters with global operations as well as the attraction and growth of new businesses. Employment projections over the next decade indicate a bright outlook regionally, spurred by strong job growth at Sparrows Point and the Port of Baltimore. Hiring will be driven in part by employee turnover and retirement of experienced workers, and the anticipated addition of 17,000 new jobs over the next decade.

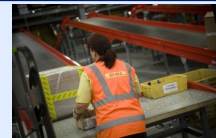
The TDL industry is comprised of businesses providing services related to:



Transportation Operations & Logistics Planning
(Air, Rail, Water, Road)



Material Moving / Operating Vehicles
(Trucking, Bus & Passenger Transportation)



Facility & Mobile Equipment Maintenance
(Warehousing, Storage & Distribution Operations)

TDL Related Support Service Occupations include:

Maintenance & Repair

Production & Assembly

Logistics

Sales & Service

Administrative & Clerical

TDL CAREER CLUSTERS

This section provides examples of the entry- and middle-skilled TDL and related occupations in highest demand among Baltimore County employers, based on 2016 employment data, wages, and projected job growth. The data are categorized by "Transportation, Distribution & Logistics Career Clusters"—groups of TDL occupations in the same field of work that require similar skills—which can be used to help focus education plans towards obtaining the necessary knowledge, competencies, and training for success in one of many TDL career options.

TDL Occupations At-A-Glance

- Clusters with the most significant demand: **Transportation Operations / Facility & Mobile Equipment Maintenance**
- Related occupations in other TDL Career Clusters: **Logistics Planning & Management / Sales & Service**
- Non-TDL Support Service Occupations (SSO's) in demand: **Production / Maintenance / Sales / Office & Administrative Support**

Transportation Operations & Logistics Planning, Material Moving / Operating Vehicles

Material Moving / Operating Vehicles:

- ◆ Career options in this cluster can start with occupations including:

Entry-level: Light Truck Delivery Services Drivers

Motor Vehicle Operators

Laborers and Freight, Stock & Material Movers

Mid-Skilled: Industrial Truck and Tractor Operators

Bus Drivers

Crane and Tower Operators

- ◆ Wages increase with years of experience or transition into higher paying supervisory, or driving positions including: **Heavy Truck and Tractor Drivers.**

Logistics Planning

- ◆ Workers with some experience in materials moving occupations have the potential to progress into higher paying logistics planning and management positions such as **Dispatchers, Transportation, Storage and Distribution Managers** and other supervisory roles.

Facility & Mobile Equipment Maintenance

- ◆ Entry-level positions leading to careers in this cluster often start with **Support Service Occupations related to Installation, Maintenance and Repair.**
- ◆ High-demand occupations in this cluster include:

Mid-Skilled/Experienced:

Bus and Truck Mechanics

Diesel Engine Specialists

Mobile Heavy Equipment Mechanics

- ◆ **General Maintenance and Repair Workers** and **Industrial Machinery Mechanics** can progress into more highly-skilled mechanic positions through occupationally specific training coupled with on-the-job experience.
- ◆ Higher wages are earned as workers become proficient and attain **nationally and industry recognized certifications and credentials.**

Support Service Occupations

Support Service Occupations (SSO's) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. Within TDL, the key SSO's are related to **Sales and Service, Production, Office and Administrative Support** and **Management**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.



SPOTLIGHT JOBS

Transportation, Distribution & Logistics

Time is money in the Transportation, Distribution & Logistics Industry, so it's important to have a trained workforce that can keep things moving with speed, accuracy and efficiency. With the anticipated attraction and expansion of major TDL employers in Baltimore County and throughout the region, it is critical to develop a skilled talent pipeline to meet employer demand.

Here are a few middle-skilled occupations with projected high growth that...

KEEP THINGS MOVING!

HIGH-DEMAND MIDDLE-SKILLED OCCUPATIONS

Transportation Operations & Logistics Planning,
Material Moving / Operating Vehicles

Education & Skills:

Upon Entry: HS Diploma or Equivalent / Associates / Post-Secondary Certificate

Advancement: Industry-recognized credentials from vocational training, apprenticeship, moderate- or long-term OJT and work experience

Material Moving / Operating Vehicles

Light Truck or Delivery Service Drivers (53-3033)
2016 Est. Emp.: 3,980 Mean Wage: \$17.74

Bus Drivers, School or Special Client (53-3022)
2016 Est. Emp.: 1,210 Mean Wage: \$14.43

Industrial Truck and Tractor Operators (53-7051)
2016 Est. Emp.: 640 Mean Wage: \$18.48

Crane and Tower Operators (53-7021)
2016 Est. Emp.: 150 Mean Wage: \$27.49

Logistics Planning

Shipping, Receiving and Traffic Clerks (43-5071)
2016 Est. Emp.: 1,550 Mean Wage: \$15.22

Dispatchers, Except Police, Fire, and Ambulance (43-5032)
2016 Est. Emp.: 700 Mean Wage: \$17.13

Production, Planning, and Expediting Clerks (43-5061)
2016 Est. Emp.: 610 Mean Wage: \$23.99

First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators (53-1031)
2016 Est. Emp.: 430 Mean Wage: \$31.43

Facility & Mobile Equipment Maintenance

Education & Skills:

Upon Entry: HS Diploma or Equivalent / Associates / Post-Secondary Certificate

Advancement: Industry-recognized credentials from vocational training, apprenticeship, short- or moderate-term OJT and work experience

Maintenance & Repair Workers, General (49-9071)
2016 Est. Emp.: 3,300 / Mean Wage: \$19.04

Industrial Machinery Mechanics (49-9021)
2016 Est. Emp.: 700 / Mean Wage: \$24.42

Installation, Maintenance & Repair Workers, All Other (49-9099)
2016 Est. Emp.: 520 / Mean Wage: \$20.28

Automotive Service Technicians and Mechanics (49-3023)
2016 Est. Emp.: 2,120 Mean Wage: \$23.29

Mobile Heavy Equipment Mechanics, Except Engines (49-3042)
2016 Est. Emp.: 650 Mean Wage: \$23.52

Bus & Truck Mechanics & Diesel Engine Specialists (49-3031)
2016 Est. Emp.: 480 / Mean Wage: \$25.23

Support Service Occupations

Support Service Occupations (SSO's) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. Key SSO's to the TDL industry include **Office, Administrative & Clerical Support** positions. Office and administrative support occupations account for **11% of employment**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

Customer Service Representatives (43-4051)
2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Billing and Posting Clerks (43-3021)
2016 Est. Emp.: 1,500 Mean Wage: \$19.18

Bookkeeping, Accounting, and Auditing Clerks (43-3031)
2016 Est. Emp.: 3,870 Mean Wage: \$21.32

Office and Administrative Support Workers, All Other (43-9199)
2016 Est. Emp.: 520 Mean Wage: \$19.23



IN-DEMAND OCCUPATIONS

Transportation, Distribution & Logistics

This table represents Baltimore County 2016 employment and wage data for the leading entry- and middle-skilled occupations in the TDL Career Clusters. The educational requirements for these specific occupations range from less than a high school diploma to a post-secondary non-degree award with an industry recognized credential.

Transportation Operations & Logistics Planning, Material Moving/Operating Vehicles

Less than HS

Helpers – Production Workers (51-9198) *
(SSO – Production)
2016 Est. Emp.: 420 / Mean Wage: \$14.93

Motor Vehicle Operators, All Other (53-3099)
2016 Est. Emp.: 380 / Mean Wage: \$19.55

HS Diploma or Equivalent

Laborers and Freight, Stock & Material Movers, Hand (53-7062) *
2016 Est. Emp.: 6,120 / Mean Wage: \$13.15

Light Truck or Delivery Services Drivers (53-3033)
2016 Est. Emp.: 3,980 / Mean Wage: \$17.74

First-Line Supervisors of Production & Operating Workers (51-1011)
(SSO – Production)
2016 Est. Emp.: 1,040 / Mean Wage: \$30.24

Packaging and Filling Machine Operators & Tenders (51-9111) *
(SSO – Production)
2016 Est. Emp.: 780 / Mean Wage: \$14.17

Dispatchers, Except Police, Fire & Ambulance (43-5032)
(TDL – Logistics Planning and Management Services Career Cluster)
2016 Est. Emp.: 700 / Mean Wage: \$17.13

Driver/Sales Worker (53-3031)
2016 Est. Emp.: 620 / Mean Wage: \$18.51

Industrial Truck & Tractor Operators (53-7051)
2016 Est. Emp.: 640 / Mean Wage: \$18.48

First-Line Supervisors of Helpers, Laborers & Material Movers (53-1021)
2016 Est. Emp.: 590 / Mean Wage: \$22.99

First-Line Supervisors of Transportation & Material Moving Machine & Vehicle Operators (53-1031)
2016 Est. Emp.: 430 / Mean Wage: \$31.43

Post-Secondary Non-Degree Award (Industry Recognized Credential <24 mos.)

Heavy and Tractor-Trailer Truck Drivers (53-3032)
2016 Est. Emp.: 3,800 / Mean Wage: \$21.37

Bus Drivers, School or Special Client (53-3022) *
2016 Est. Emp.: 1,210 / Mean Wage: \$14.43

Crane and Tower Operators (53-7021)
2016 Est. Emp.: 150 / Mean Wage: \$27.49

Facility & Mobile Equipment Maintenance

Post-Secondary Non-Degree Award (Industry Recognized Credential <24 mos.)

Maintenance and Repair Workers, General (49-9071)
(SSO – Installation, Maintenance and Repair)
2016 Est. Emp.: 3,330 / Mean Wage: \$19.04

Automotive Service Technicians & Mechanics (49-3023)
2016 Est. Emp.: 2,120 / Mean Wage: \$23.29

Industrial Machinery Mechanics (49-9041)
(SSO – Installation, Maintenance and Repair)
2016 Est. Emp.: 700 / Mean Wage: \$24.42

Mobile Heavy Equipment Mechanics, Except Engines (49-3042)
2016 Est. Emp.: 650 / Mean Wage: \$23.52

Installation, Maintenance & Repair Workers, All Other (49-9099)
(SSO – Installation, Maintenance and Repair)
2016 Est. Emp.: 520 / Mean Wage: \$20.38

Automotive Body & Related Repairers (49-3021)
2016 Est. Emp.: 516 / Mean Wage: \$27.44

Electrical & Electronics Installers & Repairers, Commercial & Industrial Equipment (49-2094)
(SSO – Installation, Maintenance and Repair)
2016 Est. Emp.: 160 / Mean Wage: \$30.34

Maintenance Workers, Machinery (49-9043)
(SSO – Installation, Maintenance and Repair)
2016 Est. Emp.: 90 / Mean Wage: \$21.29

Aircraft Mechanics and Service Technicians (49-3011)
2016 Est. Emp.: 100 / Mean Wage: \$21.90

TDL Related Support Service Occupations (Entry-Level)

HS Diploma or Equivalent

Customer Service Representatives (43-4051)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Office Clerks, General (43-9061) *
(SSO – Office & Administrative Support)
2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

Bookkeeping, Accounting & Auditing Clerks (43-3031)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Shipping, Receiving & Traffic Clerks (43-5071) *
(SSO – Office & Administrative Support)
2016 Est. Emp.: 1,550 / Mean Wage: \$15.22

Billing and Posting Clerks (43-3021)
(TDL – Sales & Service Career Cluster)
2016 Est. Emp.: 1,500 / Mean Wage: \$19.18

Bill & Account Collectors (43-3011)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 1,010 / Mean Wage: \$19.57

Order Clerks (43-4151)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 880 / Mean Wage: \$17.93

Production, Planning & Expediting Clerks (43-5061)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 610 / Mean Wage: \$23.99

Office & Administrative Support Workers, All Other (43-9199)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 520 / Mean Wage: \$19.23

Property, Real Estate & Community Association Managers (11-9141)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 450 / Mean Wage: \$23.63

Information & Records Clerks, All Other (43-4199)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 380 / Mean Wage: \$21.90

Weighers, Measurers, Checkers & Samplers, Recordkeeping (43-5111)
(SSO – Office & Administrative Support)
2016 Est. Emp.: 170 / Mean Wage: \$16.76

*Transportation, Distribution & Logistics Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). High-demand occupations with wages slightly below the locally determined minimum mean wage are denoted with an asterisk (*).*





Job Connector Toolkit

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Construction



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May 2018

The construction industry is one of Baltimore County's leading industries – accounting for six percent of the County's overall employment. Although the industry was hit by the Great Recession, it is projected to continue to grow through 2024.

Regional Impacts

74,764
Jobs

\$4.6 Billion
Associated Worker
Income

Over 7,000
Employers



Statewide Impacts

160,868
Jobs

\$10 Billion
Associated Worker
Income

Over 16,000
Employers

Baltimore County, MD

Baltimore County accounts for 14% of Maryland's construction jobs – with current and future large-scale construction projects popping up all over the County.

The projected development of **Towson Row** – a 1.2 million square foot mixed use development situated at downtown Towson's southern gateway – is projected to:

- Create over **3,000** Construction jobs;
- Generate nearly **\$185 million** in labor income; and
- Create nearly **\$500 million** in business sales.

23,134
CONSTRUCTION
Workers

More than
2,000
CONSTRUCTION
Employers

Greenleigh at Crossroads – a 200-acre mixed use development of shops, offices, apartments, and homes on Route 43 in White Marsh – creating an estimated **2,000** Construction jobs.



Generates
\$1.4 Billion
Worker Income

The redevelopment of **Tradeport Atlantic** into a world class multi-modal logistics hub is projected to create over **21,000** Construction Jobs in Baltimore County

Data Source: Maryland's Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



While impacted by the recession, Baltimore County's Construction industry is on the rebound. Employment projections over the next decade indicate a bright outlook regionally, spurred by strong job growth resulting from major construction and development projects throughout the County and Greater Baltimore region. From planning and design, to demolition, reconstruction, and continual assessment and maintenance of the structural integrity and safety of the region's infrastructural assets, there is always demand in this industry for a steady talent pipeline of highly-skilled, licensed workers.

The Construction industry relies heavily upon occupations related to:



Design & Pre-Construction



Construction/Transportation & Material Moving



Maintenance/Operations, Installation & Repair

Construction Related Support Service Occupations include:

Office & Administrative Support

Experienced Laborers in Skilled Trades

Customer Service & Clerical

CONSTRUCTION CAREER CLUSTERS

This section provides examples of the entry- and middle-skilled Construction and related occupations in highest demand among Baltimore County employers, based on 2016 employment data, wages, and projected job growth. The data are categorized by "Construction Career Clusters" – groups of Construction occupations in the same field of work that require similar skills – which can be used to help focus education plans towards obtaining the necessary knowledge, competencies, and training for success in one of many Construction career options.

Construction Occupations At-A-Glance

- Career Clusters with the most significant middle-skilled demand: **Maintenance/Operations, Installation & Repair**
- Related occupations in other Construction Career Clusters: **Transportation & Material Moving; Skilled Trades**

Pre-Construction & Construction

Design & Pre-Construction:

- ◆ Design and engineering careers in this cluster require extensive educational credentials (Bachelors, Masters, Professional Degree) and years of experience in the field to gain recognition for demonstrated expertise. Some occupations include:

Architects | Civil Engineers | Interior Designers | Commercial & Industrial Designers | Cost Estimators

- ◆ Entry into many technical occupations in this cluster requires a minimum of a HS diploma/equivalent or some college, no degree. Career advancement requires post-secondary certifications and work experience through vocational training, industry recognized apprenticeship and short-, moderate-, or long-term on-the-job training (OJT). Occupations include:

Industrial Engineering Technicians | Electrical & Electronics Engineering Technicians | Civil Engineering Technicians | Survey & Mapping Technicians

Construction:

- ◆ Construction occupations require highly-skilled entry-level workers with occupationally specific certifications, credentials and licensure. Apprenticeships in the skilled trades create many pathways for new entrants to earn competitive wages while gaining hands-on skills under experienced masters of the trade. As there will always be demand for skilled laborers with proven work experience, there are many opportunities for advancement with significant earnings increases upon successful completion of vocational training. Occupations include:

Construction Laborers | Electricians | Plumbers, Pipefitters, Steamfitters | Construction & Building Inspectors | Sheet Metal Workers

Transportation & Material Moving:

- ◆ Careers in this cluster are consistent with the minimum education and certification requirements as listed above. Occupations include:

Entry-level: Light Truck Delivery Services Drivers; Conveyer Operators & Tenders | Middle-Skilled: Industrial Truck and Tractor Operators; Crane and Tower Operators

Wages increase with years of experience or transition into higher paying supervisory or driving positions such as Heavy Truck and Tractor Drivers.

Maintenance/Operations, Installation & Repair

Workers advance in these occupations and earn higher wages as they become proficient and attain nationally and industry recognized certifications and credentials. High-demand occupations in this cluster include:

General Maintenance and Repair Workers | Heating, Air Conditioning & Refrigeration Mechanics & Installers | Telecommunications Line Installers & Repairers

With the anticipated redevelopment projects throughout the Greater Baltimore Region, there is significant demand to grow the skilled labor workforce. Construction employers require on-demand access to experienced laborers to meet the demand of current contracts, while attracting the next generation of skilled talent into a wide range of Construction careers.

Here are a few middle-skilled occupations with projected high growth that...

STRENGTHEN BALTIMORE COUNTY'S FOUNDATION!

HIGH-DEMAND MIDDLE- AND HIGH-SKILLED OCCUPATIONS

Pre-Construction & Construction	Education & Skills:	
	Upon Entry: HS Diploma or Equivalent / Associates / Post-Secondary Certificate	
	Advancement: Industry-recognized credentials from vocational training, apprenticeship, moderate-or long-term OJT and work experience	
	<p>Design & Pre-Construction</p> <p>Electrical & Electronic Engineering Technicians (17-3023) 2016 Est. Emp.: 630 / Mean Wage: \$31.22</p> <p>Civil Engineering Technicians (17-3022) 2016 Est. Emp.: 360 / Mean Wage: \$23.30</p> <p>Mechanical Drafters (17-3013) 2016 Est. Emp.: 250 / Mean Wage: \$28.42</p> <p>Electrical & Electronics Drafters (17-3012) 2016 Est. Emp.: 80 / Mean Wage: \$26.28</p>	<p>Transportation & Material Moving</p> <p>Heavy and Tractor-Trailer Truck Drivers (53-3032) 2016 Est. Emp.: 3,890 / Mean Wage: \$21.37</p> <p>Industrial Truck & Tractor Operators (53-7051) 2016 Est. Emp.: 640 / Mean Wage: \$18.48</p> <p>First-Line Supervisors of Helpers, Laborers & Material Movers (53-1021) 2016 Est. Emp.: 590 / Mean Wage: \$22.99</p> <p>Crane & Tower Operators (53-7021) 2016 Est. Emp.: 150 / Mean Wage: \$27.49</p>
Construction		
<p>Construction Laborers (47-2061) 2016 Est. Emp.: 3,200 / Mean Wage: \$16.34</p> <p>Electricians (47-2111) 2016 Est. Emp.: 2,530 / Mean Wage: \$25.01</p> <p>First-Line Supervisors of Construction Trades & Extraction Workers (47-1011) 2016 Est. Emp.: 2,480 / Mean Wage: \$32.12</p> <p>Carpenters (47-2031) 2016 Est. Emp.: 2,250 / Mean Wage: \$23.70</p>	<p>Plumbers, Pipefitters, and Steamfitters (47-2152) 2016 Est. Emp.: 1,860 / Mean Wage: \$27.16</p> <p>Operating Engineers and Other Construction Equipment Operators (47-2073) 2016 Est. Emp.: 980 / Mean Wage: \$25.96</p> <p>Cement Masons and Concrete Finishers (47-2051) 2016 Est. Emp.: 580 / Mean Wage: \$22.69</p> <p>Construction and Building Inspectors (47-4011) 2016 Est. Emp.: 440 / Mean Wage: \$26.05</p>	

Maintenance/Operations, Installation & Repair	
Education & Skills:	
Upon Entry: HS Diploma or Equivalent / Associates / Post-Secondary Certificate	
Advancement: Industry-recognized credentials from vocational training, apprenticeship, short- or moderate-term OJT and work experience	
<p>Maintenance & Repair Workers, General (49-9043) 2016 Est. Emp.: 3,300 / Mean Wage: \$19.04</p> <p>First-Line Supervisors of Mechanics, Installers & Repairers (49-1011) 2016 Est. Emp.: 1,400 / Mean Wage: \$31.73</p> <p>Industrial Machinery Mechanics (49-9021) 2016 Est. Emp.: 700 / Mean Wage: \$24.42</p> <p>Telecommunications Line Installers & Repairers (49-9052) 2016 Est. Emp.: 610 / Mean Wage: \$27.80</p>	<p>Heating, Air Conditioning & Refrigeration Mechanics (49-9021) 2016 Est. Emp.: 530 / Mean Wage: \$28.46</p> <p>Installation, Maintenance & Repair Workers, All Other (49-9099) 2016 Est. Emp.: 520 / Mean Wage: \$20.28</p> <p>Bus & Truck Mechanics & Diesel Engine Specialists (49-3031) 2016 Est. Emp.: 480 / Mean Wage: \$25.23</p> <p>Electrical & Electronics Repairers, Commercial & Industrial Equipment (49-2094) 2016 Est. Emp.: 160 / Mean Wage: \$30.34</p>

Support Service Occupations – Entry Level

Support Service Occupations (SSOs) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. The Construction industry shares many of the same key SSO's found in the Transportation, Distribution & Logistics (TDL) industry such as: **Office, Administrative & Clerical Support, and Property Management.** Office and administrative support occupations account for **11% of employment**, creating entry points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

Office and Administrative Support Workers, All Other (43-9199)
2016 Est. Emp.: 520 Mean Wage: \$19.23

Property, Real Estate, & Community Association Managers (11-9141)
2016 Est. Emp.: 450 / Mean Wage: \$23.63



Occupations in the Construction Career Clusters have varying requirements for minimum education/skill levels. Career progression may require short-, moderate- or long-term on-the-job training (OJT) and industry recognized apprenticeship credentials.

Design & Pre-Construction

- Electrical & Electronics Engineering Technicians (17-3023)**
2016 Est. Emp.: 630 / Mean Wage: \$31.22
- Civil Engineering Technicians (17-3022)**
2016 Est. Emp.: 360 / Mean Wage: \$23.30
- Mechanical Drafters (17-3013)**
2016 Est. Emp.: 250 / Mean Wage: \$28.42
- Architectural & Civil Drafters (17-3011)**
2016 Est. Emp.: 230 / Mean Wage: \$30.31
- Surveyors (17-1022)**
2016 Est. Emp.: 160 / Mean Wage: \$29.09
- Surveying & Mapping Technicians (17-3031)**
2016 Est. Emp.: 110 / Mean Wage: \$23.36
- Electrical & Electronics Drafters (17-3012)**
2016 Est. Emp.: 80 / Mean Wage: \$26.28
- Environmental Engineering Technicians (17-3025)**
2016 Est. Emp.: 80 / Mean Wage: \$27.27
- Landscape Architects (17-1012)**
2016 Est. Emp.: 70 / Mean Wage: \$40.30
- Commercial and Industrial Designers (27-1021)**
2016 Est. Emp.: 40 / Mean Wage: \$29.64
- Engineering Technicians, Except Drafters, All Other (17-3029)**
2016 Est. Emp.: 30 / Mean Wage: \$39.81
- Industrial Engineering Technicians (17-3026)**
2016 Est. Emp.: No BCO data / Mean Wage: \$28.40
- Mechanical Engineering Technicians (17-3027)**
2016 Est. Emp.: No BCO data / Mean Wage: \$27.45

Transportation & Material Moving

- Light Truck or Delivery Services Drivers (53-3033)**
2016 Est. Emp.: 3,980 / Mean Wage: \$17.74
- Heavy & Tractor-Trailer Truck Drivers (53-3032)**
2016 Est. Emp.: 3,890 / Mean Wage: \$21.37
- Cleaners of Vehicles & Equipment (53-7061)***
2016 Est. Emp.: 850 / Mean Wage: \$12.26
- Industrial Truck & Tractor Operators (53-7051)**
2016 Est. Emp.: 640 / Mean Wage: \$18.48
- First-Line Supervisors of Helpers, Laborers, & Material Movers (53-1021)**
2016 Est. Emp.: 590 / Mean Wage: \$22.99
- First-Line Supervisors of Transportation & Material Moving Machine & Vehicle Operators (53-1031)**
2016 Est. Emp.: 430 / Mean Wage: \$31.43
- Crane & Tower Operators (53-7021)**
2016 Est. Emp.: 150 / Mean Wage: \$27.49
- Hoist & Winch Operators (53-7041)**
2016 Est. Emp.: 30 / Mean Wage: \$29.61
- Conveyor Operators & Tenders (53-7011)**
2016 Est. Emp.: 10 / Mean Wage: \$17.97
- Excavating & Loading Machine & Dragline Operators (53-7032)**
2016 Est. Emp.: No BCO data / Mean Wage: \$25.90
- Refuse & Recyclable Material Collectors (53-7081)***
2016 Est. Emp.: 10 / Mean Wage: \$13.92

Construction

- Construction Laborers (47-2061)**
2016 Est. Emp.: 3,200 / Mean Wage: \$16.34
- Electricians (47-2111)**
2016 Est. Emp.: 2,530 / Mean Wage: \$25.01
- First-Line Supervisors of Construction Trades & Extraction Workers (47-1011)**
2016 Est. Emp.: 2,480 / Mean Wage: \$32.12
- Carpenters (47-2031)**
2016 Est. Emp.: 2,250 / Mean Wage: \$23.70
- Plumbers, Pipefitters & Steamfitters (47-2152)**
2016 Est. Emp.: 1,860 / Mean Wage: \$27.16
- Construction Managers (11-9021)**
2016 Est. Emp.: 1,000 / Mean Wage: \$50.31
- Operating Engineers & Other Construction Equipment Operators (47-2073)**
2016 Est. Emp.: 980 / Mean Wage: \$25.96
- Cement Masons & Concrete Finishers (47-2051)**
2016 Est. Emp.: 580 / Mean Wage: \$22.69
- Construction & Building Inspectors (47-4011)**
2016 Est. Emp.: 440 / Mean Wage: \$26.05
- Painters, Construction & Maintenance (47-2141)**
2016 Est. Emp.: 310 / Mean Wage: \$20.77
- Helpers - Carpenters (47-3012)***
2016 Est. Emp.: 290 / Mean Wage: \$12.54
- Roofers (47-2181)***
2016 Est. Emp.: 270 / Mean Wage: \$14.33
- Sheet Metal Workers (47-2211)**
2016 Est. Emp.: 190 / Mean Wage: \$21.75
- Glaziers (47-2121)**
2016 Est. Emp.: 130 / Mean Wage: \$21.81
- Pipelayers (47-2151)**
2016 Est. Emp.: 120 / Mean Wage: \$19.46
- Structural Metal Fabricators & Fitters (51-2041)**
2016 Est. Emp.: 80 / Mean Wage: \$17.44
- Floor Layers, Except Carpet, Wood, & Hard Tiles (47-2042)**
2016 Est. Emp.: 60 / Mean Wage: \$19.01

While locally specific data is unavailable for some occupations related to Construction and Maintenance/Operations, Installation & Repair, they are critical to the industry and there is significant employer demand for them throughout the region.

(See gray shaded boxes below)

- Carpet Installers (47-2041)**
Mean Wage: \$46.20
- Structural Iron & Steel Workers (47-2221)**
Mean Wage: \$25.74
- Insulation Workers, Mechanical (47-2132)**
(BCO - highest employment in the region)
Mean Wage: \$22.26
- Brickmasons & Blockmasons (47-2021)**
Mean Wage: \$21.36
- Drywall & Ceiling Tile Installers (47-2081)**
Mean Wage: \$20.89
- Hazardous Materials Removal Workers (47-4041)**
Mean Wage: \$17.79

Maintenance/Operations, Installation & Repair

- Maintenance & Repair Workers, General (49-9071)**
2016 Est. Emp.: 3,330 / Mean Wage: \$19.04
- Landscaping & Groundskeeping Workers (37-3011)***
2016 Est. Emp.: 2,320 / Mean Wage: \$13.61
- First Line Supervisors of Mechanics, Installers & Repairers (49-1011)**
2016 Est. Emp.: 1,400 / Mean Wage: \$31.73
- Industrial Machinery Mechanics (49-9041)**
2016 Est. Emp.: 700 / Mean Wage: \$24.42
- Telecommunications Line Installers & Repairers (49-9052)**
2016 Est. Emp.: 610 / Mean Wage: \$27.80
- Heating, Air Conditioning & Refrigeration Mechanics & Installers (49-9021)**
2016 Est. Emp.: 530 / Mean Wage: \$28.46
- Installation, Maintenance & Repair Workers, All Other (49-9099)**
2016 Est. Emp.: 520 / Mean Wage: \$20.28
- First-Line Supervisors of Landscaping, Lawn Service & Groundskeeping Workers (37-1012)**
2016 Est. Emp.: 510 / Mean Wage: \$21.44
- Bus & Truck Mechanics & Diesel Engine Specialists (49-3031)**
2016 Est. Emp.: 480 / Mean Wage: \$25.23
- Security & Fire Alarm Systems Installers (49-2098)**
2016 Est. Emp.: 330 / Mean Wage: \$24.88
- Locksmiths & Safe Repairers (49-9094)**
2016 Est. Emp.: 200 / Mean Wage: \$21.42
- Pest Control Workers (37-2021)**
2016 Est. Emp.: 200 / Mean Wage: \$23.00
- Electrical & Electronics Installers & Repairers, Commercial & Industrial Equipment (49-2094)**
2016 Est. Emp.: 160 / Mean Wage: \$30.34
- Maintenance Workers, Machinery (49-9043)**
2016 Est. Emp.: 90 / Mean Wage: \$21.29
- Outdoor Power Equipment & Other Small Engine Mechanics (49-3053)**
2016 Est. Emp.: 80 / Mean Wage: \$18.98
- Stationary Engineers & Boiler Operators (51-8021)**
2016 Est. Emp.: 70 / Mean Wage: \$30.09
- Telecommunications Equipment Installers & Repairers, Except Line Installers (49-2022)**
2016 Est. Emp.: 29 / Mean Wage: \$16.46
- Grounds Maintenance Workers, All Other (37-3019)**
2016 Est. Emp.: No BCO data / Mean Wage: \$32.23
- Millwrights (49-9044)**
2016 Est. Emp.: No BCO data / Mean Wage: \$29.20
- Control & Valve Installers & Repairers, Except Mechanical Door (49-9012)**
2016 Est. Emp.: No BCO data / Mean Wage: \$27.90
- Pesticide Handlers, Sprayers, & Applicators, Vegetation (37-3012)**
2016 Est. Emp.: No BCO data / Mean Wage: \$18.24

- Boilermakers (47-2011)**
- Elevator Installers & Repairers (47-4021)**
- Highway Maintenance Workers (47-4051)**
- Septic Tank Servicers & Sewer Pipe Cleaners (47-4071)**
- Refractory Materials Repairers, Except Brickmasons (49-9045)**
- Electrical Power-Line Installers & Repairers (49-9051)**

Construction Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). High-demand occupations with wages slightly below the locally determined minimum mean wage are denoted with an asterisk (*).





BALTIMORE COUNTY MADE



Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Manufacturing



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

A diversity of manufacturers call Baltimore County home and have helped sustain the industry throughout economic uncertainty for decades. Technological innovations and direct proximity to a world class multi-modal logistics hub are projected to significantly spur the steady recovery and growth of this critical industry in Baltimore County and throughout the region.

Regional Impacts

53,381
Jobs

\$4 Billion
Associated Worker
Income

Over 1,700
Employers



Statewide Impacts

103,592
Jobs

\$7.6 Billion
Associated Worker
Income

Over 3,800
Employers

Baltimore County, MD

Baltimore County accounts for 14% of Maryland's manufacturing jobs – with employers benefitting from a strategic location, integrated supply chain with distribution networks, and a skilled and agile workforce.

500+ Employees

Baltimore County is home to **36%** of the Baltimore Region's top 25 manufacturers as ranked by Baltimore area employers.

- McCormick & Co., Inc.
- BD Life Sciences Diagnostic Systems
- Stanley Black & Decker, Inc.
- Textron Systems
- Middle River Aircraft Systems
- Coty (Formerly Proctor & Gamble)
- Marquip Ward United
- Saft Batteries
- Zentech



100 – 499 Employees

Mid-sized manufacturers are vital to the industry's local supply chain, fabricating quality components, parts and packaging required for larger scale production jobs.

- Danfoss Automatic Controls
- Gamse Lithographing Co.
- Green Bay Packaging, Inc.
- General Motors
- US Filter – Pall Corporation

< 100 Employees

Baltimore County has technical assistance resources and local incubators that help establish and grow small business ventures.

- Bakery Express Warehouse
- Control Cable, Inc.
- MS Willett, Inc.
- Mann-Pak, Inc.
- Maryland Metals Processing
- Vac-Pac
- Ruxton Chocolates

Data Source: Maryland's Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



Baltimore County has a robust Manufacturing industry, providing the resources necessary to support more than 500 small, mid-sized and large employers. The diversity of manufacturers who call the County home helps sustain the industry during economic fluctuations. Technological innovations allow manufacturers to achieve high levels of precision and productivity, creating both significant shifts in the skills required of today's manufacturing workforce and opportunities for growth and advancement to meet future demand in this rapidly evolving industry.

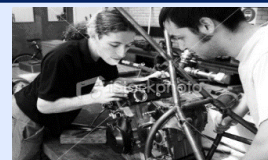
The Manufacturing industry relies heavily upon occupations related to:



Production Process Development



Production & Quality Assurance



Maintenance, Installation & Repair

Manufacturing Related Support Service Occupations include:

Office, Administrative & Clerical Support

Sales & Customer Service

Material Moving, Warehousing & Distribution

MANUFACTURING CAREER CLUSTERS

This section provides examples of the entry- and middle-skilled Manufacturing and related occupations in highest demand among Baltimore County employers, based on 2016 employment data, wages, and projected job growth. The data are categorized by "Manufacturing Career Clusters" – groups of Manufacturing occupations in the same field of work that require similar skills – which can be used to help focus education plans towards obtaining the necessary knowledge, competencies, and training for success in one of many Manufacturing career options.

Manufacturing Occupations At-A-Glance

- Cluster with the most significant demand: **Production**
- Related occupations across Industry Career Clusters: **TDL - Material Moving, Warehousing & Distribution Trades**

Production, Process Development & Quality Assurance

- ◆ Employment in the Manufacturing Cluster is highly concentrated in Production occupations, which accounts for **41% of employment**.
- ◆ Occupational demand in the cluster is highly concentrated in entry-skilled, lower wage occupations, which account for **68% of employment**.
- ◆ Transportation and material moving occupations such as Laborers & Freight, Stock, and Material Movers, Hand account for **9% of employment**.

Entry-Skilled	Mid-Skilled	High-Skilled
Packaging and Filling Machine Operators & Tenders Inspectors, Testers, Sorters, Samplers & Weighers	Machinists Welders, Cutters, Solderers & Brazers First Line Supervisors of Production & Operating Workers	Purchasing Agents Mechanical & Industrial Engineers Production, Planning & Expediting Clerks

Maintenance, Installation & Repair

- ◆ Entry-level positions leading to careers in this cluster often start with occupations such as **General Maintenance and Repair Workers**.
- ◆ High-demand occupations in this cluster include: **Industrial Machinery Mechanics** and **Heating, Air Conditioning & Refrigeration Mechanics**.
- ◆ Maintenance workers can progress into more highly-skilled management positions such as **First Line Supervisors of Mechanics, Installers & Repairers** through occupationally specific credentials coupled with on-the-job experience.

Support Service Occupations

Support Service Occupations (SSOs) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. The Manufacturing industry shares many of the same key SSO's found in the Transportation, Distribution & Logistics industry such as: **Office, Administrative & Clerical Support; Sales & Customer Service**. Office and Administrative Support occupations account for **11% of employment**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

With more than 500 manufacturing companies and nearly 15,000 workers in Baltimore County, it is critical to develop a skilled talent pipeline with the advanced technological skills that are in greatest demand. Here are a few middle-skilled occupations with projected high growth that...

KEEP THAT PRODUCTION LINE ROLLING!

HIGH-DEMAND MIDDLE-SKILLED OCCUPATIONS

Production Process Development, Production & Quality Assurance

Education & Skills:

Upon Entry: Less than HS / HS Diploma or Equivalent / Post-Secondary Certificate / Some College, No Degree / Associates
Advancement: Industry-recognized credentials from vocational training, apprenticeship, moderate-or long-term OJT and work experience / Bachelors

Production Process Development

Electrical & Electronic Engineering Technicians (17-3023)
 2016 Est. Emp.: 630 / Mean Wage: \$31.22

Mechanical Drafters (17-3013)
 2016 Est. Emp.: 250 / Mean Wage: \$28.42

Electrical & Electronics Drafters (17-3012)
 2016 Est. Emp.: 80 / Mean Wage: \$26.28

Quality Assurance

Production, Planning & Expediting Clerks (43-5061)
 2016 Est. Emp.: 610 / Mean Wage: \$23.99

Weighers, Measurers, Checkers & Samplers, Recordkeeping (43-5111)
 2016 Est. Emp.: 170 / Mean Wage: \$16.76

Inspectors, Testers, Sorters, Samplers & Weighers (51-9061)
 2016 Est. Emp.: No BCO Data / Mean Wage: \$21.68

Production

First-Line Supervisors of Production & Operating Workers (51-1011)
 2016 Est. Emp.: 1,040 / Mean Wage: \$30.24

Machinists (51-4041)
 2016 Est. Emp.: 690 / Mean Wage: \$23.74

Welders, Cutters, Solderers & Brazers (51-4121)
 2016 Est. Emp.: 390 / Mean Wage: \$20.85

Electrical & Electronic Equipment Assemblers (51-2022)
 2016 Est. Emp.: 320 / Mean Wage: \$18.37

Printing Press Operators (51-5112)
 2016 Est. Emp.: 270 / Mean Wage: \$20.01

Mixing & Blending Machine Setters, Operators & Tenders (51-9023)
 2016 Est. Emp.: 230 / Mean Wage: \$17.50

Dental Laboratory Technicians, All Other (51-9081)
 2016 Est. Emp.: 170 / Mean Wage: \$20.39

Computer-Controlled Machine Tool Operators, Metal & Plastic (51-4011)
 2016 Est. Emp.: 150 / Mean Wage: \$22.26

Maintenance, Installation & Repair

Education & Skills:

Upon Entry: HS Diploma or Equivalent / Associates / Post-Secondary Certificate
Advancement: Industry-recognized credentials from vocational training, apprenticeship, short- or moderate-term OJT and work experience

Maintenance & Repair Workers, General (49-9043)
 2016 Est. Emp.: 3,300 / Mean Wage: \$19.04

First-Line Supervisors of Mechanics, Installers & Repairers (49-1011)
 2016 Est. Emp.: 1,400 / Mean Wage: \$31.73

Industrial Machinery Mechanics (49-9021)
 2016 Est. Emp.: 700 / Mean Wage: \$24.42

Telecommunications Line Installers & Repairers (49-9052)
 2016 Est. Emp.: 610 / Mean Wage: \$27.80

Heating, Air Conditioning & Refrigeration Mechanics (49-9021)
 2016 Est. Emp.: 530 / Mean Wage: \$28.46

Installation, Maintenance & Repair Workers, All Other (49-9099)
 2016 Est. Emp.: 520 / Mean Wage: \$20.28

Electrical & Electronics Repairers, Commercial & Industrial Equipment (49-2094)
 2016 Est. Emp.: 160 / Mean Wage: \$30.34

Maintenance Workers, Machinery (49-9043)
 2016 Est. Emp.: 90 / Mean Wage: \$21.29

Support Service Occupations

Support Service Occupations (SSOs) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. The Manufacturing industry shares many of the same key SSO's found in the Transportation, Distribution and Logistics (TDL) industry such as: **Office, Administrative & Clerical Support**. Office and Administrative Support occupations account for **11% of employment**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

Office and Administrative Support Workers, All Other (43-9199)
 2016 Est. Emp.: 520 / Mean Wage: \$19.23

Customer Service Representatives (43-4051)
 2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Billing and Posting Clerks (43-3021)
 2016 Est. Emp.: 1,500 / Mean Wage: \$19.18

Shipping, Receiving and Traffic Clerks (43-5071)
 2016 Est. Emp.: 1,550 / Mean Wage: \$15.22

(See the TDL Occupational Profile for a complete list of related Support Service Occupations)



Occupations within the Manufacturing Career Clusters have a wide range of minimum educational requirements:

Maintenance, Installation & Repair

Most Maintenance, Installation & Repair occupations require a HS diploma/equivalent and post-secondary certificate, or industry-recognized credentials through short- or moderate-term OJT/apprenticeships.

Maintenance & Repair Workers, General (49-9071)
2016 Est. Emp.: 3,330 / Mean Wage: \$19.04

First Line Supervisors of Mechanics, Installers & Repairers (49-1011)
2016 Est. Emp.: 1,400 / Mean Wage: \$31.73

Industrial Machinery Mechanics (49-9041)
2016 Est. Emp.: 700 / Mean Wage: \$24.42

Telecommunications Line Installers & Repairers (49-9052)
2016 Est. Emp.: 610 / Mean Wage: \$27.80

Heating, Air Conditioning & Refrigeration Mechanics & Installers (49-9021)
2016 Est. Emp.: 530 / Mean Wage: \$28.46

Installation, Maintenance & Repair Workers, All Other (49-9099)
2016 Est. Emp.: 520 / Mean Wage: \$20.28

Computer, Automated Teller & Office Machine Repairers (49-2011)
2016 Est. Emp.: 430 / Mean Wage: \$19.36

Security & Fire Alarm Systems Installers (49-2098)
2016 Est. Emp.: 330 / Mean Wage: \$24.88

Locksmiths & Safe Repairers (49-9094)
2016 Est. Emp.: 200 / Mean Wage: \$21.42

Electrical & Electronics Installers & Repairers, Commercial & Industrial Equipment (49-2094)
2016 Est. Emp.: 160 / Mean Wage: \$30.34

Aircraft Mechanics & Service Technicians (49-3011)
2016 Est. Emp.: 100 / Mean Wage: \$30.35

Maintenance Workers, Machinery (49-9043)
2016 Est. Emp.: 90 / Mean Wage: \$21.29

Outdoor Power Equipment & Other Small Engine Mechanics (49-3053)
2016 Est. Emp.: 80 / Mean Wage: \$18.98

Quality Assurance

Advanced occupations within the Quality Assurance and Process Development clusters may require an Associates, Bachelor's or Master's Degree.

Industrial Production Managers (11-3051)
2016 Est. Emp.: 240 / Mean Wage: \$57.26

Production, Planning, and Expediting Clerks (43-5061)
2016 Est. Emp.: 610 / Mean Wage: \$23.99

Weighers, Measurers, Checkers, and Samplers, Recordkeeping (43-5111)
2016 Est. Emp.: 170 / Mean Wage: \$16.76

Inspectors, Testers, Sorters, Samplers & Weighers (51-9061)
2016 Est. Emp.: No BCO Data / Mean Wage: \$21.68

Support Service Occupations:

(See the TDL In-Demand Occupations for more)

Shipping, Receiving and Traffic Clerks (43-5071) *
2016 Est. Emp.: 1,550 / Mean Wage: \$15.22

Billing and Posting Clerks (43-3021)
2016 Est. Emp.: 1,500 / Mean Wage: \$19.18

Production

Most mid-skilled Production and Production Process Development occupations require workers have a High School Diploma/Equivalent, advancing to receive a Post-Secondary Certificate or subsequent industry-recognized credentials.

First-Line Supervisors of Production & Operating Workers (51-1011)
2016 Est. Emp.: 1,040 / Mean Wage: \$30.24

Packaging/Filling Machine Operators & Tenders (51-9111)*
2016 Est. Emp.: 780 / Mean Wage: \$14.17

Machinists (51-4041)
2016 Est. Emp.: 690 / Mean Wage: \$23.74

Production Workers, All Other (51-9199)
2016 Est. Emp.: 490 / Mean Wage: \$16.48

Bakers (51-3011) *
2016 Est. Emp.: 480 / Mean Wage: \$14.57

Helpers – Production Workers (51-9198) *
2016 Est. Emp.: 420 / Mean Wage: \$14.93

Welders, Cutters, Solderers & Brazers (51-4121)
2016 Est. Emp.: 390 / Mean Wage: \$20.85

Team Assemblers (51-2092) *
2016 Est. Emp.: 370 / Mean Wage: \$13.80

Electrical & Electronic Equipment Assemblers (51-2022)
2016 Est. Emp.: 320 / Mean Wage: \$18.37

Butchers & Meat Cutters (51-3021)
2016 Est. Emp.: 320 / Mean Wage: \$19.41

Print Binding & Finishing Workers (51-5113) *
2016 Est. Emp.: 290 / Mean Wage: \$15.45

Printing Press Operators (51-5112)
2016 Est. Emp.: 270 / Mean Wage: \$20.01

Assemblers & Fabricators, All Other (51-2099) *
2016 Est. Emp.: 250 / Mean Wage: \$15.73

Mixing & Blending Machine Setters, Operators & Tenders (51-9023)
2016 Est. Emp.: 230 / Mean Wage: \$17.50

Dental Laboratory Technicians (51-9081)
2016 Est. Emp.: 170 / Mean Wage: \$20.39

Painters, Transportation Equipment (51-9122)
2016 Est. Emp.: 160 / Mean Wage: \$26.95

Computer-Controlled Machine Tool Operators, Metal & Plastic (51-4011)
2016 Est. Emp.: 150 / Mean Wage: \$22.26

Computer Numerically Controlled Machine Tool Programmers, Metal & Plastic (51-4012)
2016 Est. Emp.: No BCO Data / Mean Wage: \$20.59

Metal Workers & Plastic Workers, All Other (51-4199)
2016 Est. Emp.: 150 / Mean Wage: \$20.29

Separating, Filtering, Clarifying, Precipitating, & Still Machine Setters, Operators & Tenders (51-9012)
2016 Est. Emp.: 110 / Mean Wage: \$19.16

Structural Metal Fabricators and Fitters (51-2041)
2016 Est. Emp.: 80 / Mean Wage: \$17.44

Cutting, Punching & Press Machine Setters, Operators & Tenders, Metal and Plastic (51-4031)
2016 Est. Emp.: 80 / Mean Wage: \$20.58

Paper Goods Machine Setters, Operators & Tenders (51-9196)
2016 Est. Emp.: 80 / Mean Wage: \$17.50

Extruding & Drawing Machine Setters, Operators & Tenders, Metal & Plastic (51-4021)
2016 Est. Emp.: 70 / Mean Wage: \$16.39

Stationary Engineers and Boiler Operators (51-8021)
2016 Est. Emp.: 70 / Mean Wage: \$30.09

Crushing, Grinding & Polishing Machine Setters, Operators & Tenders (51-9021) *
2016 Est. Emp.: 70 / Mean Wage: \$15.45

Electromechanical Equipment Assemblers (51-2023)
2016 Est. Emp.: 60 / Mean Wage: \$19.11

Multiple Machine Tool Setters, Operators & Tenders, Metal & Plastic (51-4081) *
2016 Est. Emp.: 60 / Mean Wage: \$15.79

Tool and Die Makers (51-4111)
2016 Est. Emp.: 40 / Mean Wage: \$22.74

Molding, Coremaking & Casting Machine Setters, Operators & Tenders, Metal & Plastic (51-4072)
2016 Est. Emp.: 30 / Mean Wage: \$16.76

Woodworking Machine Setters, Operators & Tenders, Except Sawing (51-7042)
2016 Est. Emp.: 30 / Mean Wage: \$17.11

Grinding and Polishing Workers, Hand (51-9022)
2016 Est. Emp.: 30 / Mean Wage: \$18.84

Production Process Development

Purchasing Agents, Except Wholesale, Retail & Farm Products (17-3019)
2016 Est. Emp.: 910 / Mean Wage: \$32.33

Mechanical Engineers (17-2141)
2016 Est. Emp.: 680 / Mean Wage: \$37.98

Electrical Engineers (17-2071)
2016 Est. Emp.: 660 / Mean Wage: \$43.70

Electrical & Electronic Engineering Technicians (17-3023)
2016 Est. Emp.: 630 / Mean Wage: \$31.22

Engineering Technicians, Except Drafters, All Other (17-3029)
2016 Est. Emp.: 30 / Mean Wage: \$39.81

Industrial Engineers (17-2112)
2016 Est. Emp.: 250 / Mean Wage: \$44.49

Mechanical Drafters (17-3013)
2016 Est. Emp.: 250 / Mean Wage: \$28.42

Electronics Engineers, Except Computer (17-2072)
2016 Est. Emp.: 80 / Mean Wage: \$41.06

Electrical & Electronics Drafters (17-3012)
2016 Est. Emp.: 80 / Mean Wage: \$26.28

*Manufacturing Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). High-demand occupations with wages slightly below the locally determined minimum mean wage are denoted with an asterisk (*).*





Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Education



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

The education industry—comprising both public and private education—is a core economic driver in Baltimore County and is expected to experience growth in the County through 2024.

Regional Impacts

43,083
Jobs

\$2.6 Billion
Associated Worker
Income

Over 1,100
Employers



Statewide Impacts

64,419
Jobs

\$3.5 Billion
Associated Worker
Income

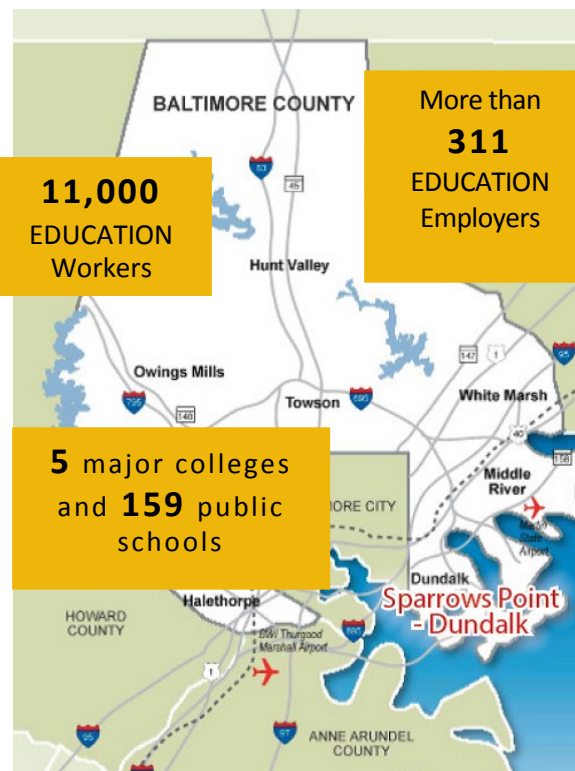
Over 2,800
Employers

Baltimore County, MD

With over 11,000 public and private education workers in Baltimore County, the County makes up 17% of the State's employment in the industry.

Baltimore County is home to five major colleges that are some of the County's top employers.

- **University of Maryland, Baltimore County (UMBC)**
⇒ 3,600 employees
- **Towson University**
⇒ 3,400 employees
- **Community College of Baltimore County (CCBC)**
⇒ 2,230 employees
- **Stevenson University**
⇒ 1,000 employees
- **Goucher College**
⇒ 700 employees



Data Source: Maryland's Quarterly Census of Employment and Wages (2016)

Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



The Education Cluster is both a major industry in Baltimore County and a critical part of its workforce development system. It has dual importance, both as a source of employment growth for the County and as the key supplier of a skilled and educated workforce for the Baltimore Metropolitan Region. The Education Industry is vibrant and growing, far outpacing overall employment growth in Baltimore County, and is expected to experience strong growth through 2024.

The Education industry relies heavily upon occupations related to:



Teaching & Training



Administration & Administrative Support



Professional Support Services

Education Support Service Occupations include:

Office & Administrative Support

General Management

Operations

EDUCATION CAREER CLUSTERS

This section provides examples of the entry-, middle-, and highly-skilled Education and related occupations in highest demand among learning institutions in Baltimore County. The data are categorized by “Education Career Clusters” – groups of occupations in the same field of work that require similar skills – which can be used to help focus education plans towards obtaining the necessary knowledge, competencies, and training for success in one of many Education career options.

Education Occupations At-A-Glance

- Employment in the Education career cluster is **greatly concentrated in highly-skilled occupations**. The single largest occupational grouping in the cluster is **Teaching & Training**, which accounts for **44% of all employment**.
- The Education career cluster experienced job growth across all skill levels. Occupational demand favors **highly-skilled occupations**, projected to **grow by 14%** through 2024. Employment in **entry-skilled occupations** is projected to **grow by 9%** through 2024.

Education

- ◆ Occupations in the Education clusters require extensive educational credentials (Bachelors, Masters, Post-Baccalaureate Teaching or Professional Certification) and expertise. Advancement and earnings increases come with years of work-related experience and tenure. Top occupations are led by high-skilled Postsecondary Teachers, followed distantly by Education Administrators, and Educational Counselors. Some occupations include:

Teaching & Training

Elementary School Teachers, Except Special Education

Secondary School Teachers, Except Special & Career/Technical Education

Middle School Teachers, Except Special & Career/Technical Education

Preschool Teachers, Except Special Education

Administration & Administrative Support

Education Administrators, Elementary and Secondary School

Education Administrators, All Other

Training & Development Managers

Professional Support Services

Educational, Guidance, School, and Vocational Counselors

Instructional Coordinators

Librarians

Support Service Occupations: Administrative, General Management & Operations

Office and Administrative Support occupations account for 17% of employment in this cluster, with a mix of entry- and middle-skilled occupations. There is some demand for workers with a range of skills for General Management and Operations occupations:

Entry - Middle-Skilled

Secretaries and Administrative Assistants, Except Legal, Medical, & Executive
Office Clerks, General
Executive Secretaries & Executive Administrative Assistants
Office & Administrative Support Workers, All Other

Middle - High-Skilled

Business Operations Specialists, All Other
Computer User Support Specialists
Food Service Managers
Maintenance & Repair Workers, General

This cluster encompasses occupations across all of Baltimore County’s priority industries; the profile highlights primarily a few of the key entry- and middle-skilled support service occupations. For a complete list of any of the in-demand occupations within these clusters, reference the Toolkit’s Industry & Occupational Profile specific to the industry or occupation of interest.

Baltimore County's Education industry is both a major employer and core supplier of a highly educated workforce for the region's employers. Through an expansive network of public and private schools, training vendors, the community college system, colleges, universities, labor organizations and apprenticeship programs, Baltimore County is well positioned to expand upon existing educational programs to meet the needs of business and industry.

Here are a few middle- and high-skilled occupations that...

PRODUCE A HIGHLY-SKILLED WORKFORCE!

HIGH-DEMAND MIDDLE- & HIGH-SKILLED OCCUPATIONS

Teaching & Training

Education & Skills:

Upon Entry: Bachelors / Masters / Post-Baccalaureate Teaching or Professional Certificates

Advancement: Higher Education credentials, recognized expertise, years of work-related experience, tenure

Teacher Assistants (25-9041)
2016 Est. Emp.: 2,250 / Mean Wage: \$13.50

Preschool Teachers, Except Special Education (25-2011)
2016 Est. Emp.: 1,250 / Mean Wage: \$17.18

Kindergarten Teachers, Except Special Education (25-2012)
2016 Est. Emp.: 370 / Mean Wage: \$27.88

Coaches and Scouts (25-2022)
2016 Est. Emp.: 350 / Mean Wage: \$22.01

Self-Enrichment Education Teachers (25-3021)
2016 Est. Emp.: 340 / Mean Wage: \$15.40

Education, Training, & Library Workers, All Other (25-9099)
2016 Est. Emp.: 290 / Mean Wage: \$20.78

Administration & Administrative/Professional Support Services

Education & Skills:

Upon Entry: Bachelors / Masters / Post-Baccalaureate Teaching or Professional Certificates

Advancement: Higher Education credentials, recognized expertise, years of work-related experience, tenure

Administration & Administrative Support

Education Administrators, Elementary & Secondary School (11-9032)
2016 Est. Emp.: 620 / Mean Wage: \$53.64

Education Administrators, All Other (11-9039)
2016 Est. Emp.: 430 / Mean Wage: \$44.18

Training & Development Managers (11-3131)
2016 Est. Emp.: 100 / Mean Wage: \$54.74

Professional Support Services

Educational, Guidance, School, and Vocational Counselors (21-1012)
2016 Est. Emp.: 680 / Mean Wage: \$26.91

Instructional Coordinators (25-9031)
2016 Est. Emp.: 290 / Mean Wage: \$37.09

Library Technicians (25-4031)
2016 Est. Emp.: 160 / Mean Wage: \$15.14

Support Service Occupations (SSO's) – Administrative, General Management & Operations

The Education industry relies on key SSO's related to: **Office, Administrative & Clerical Support; General Management; and, Operations.** Office and administrative support occupations account for **17% of employment in this cluster**, creating entry-points to many Education career opportunities within public and private learning institutions, depending upon one's interests, skills and abilities.

Administrative & Clerical

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)
2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061)
2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

Bookkeeping, Accounting & Auditing Clerks (43-3031)
2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

First-Line Supervisors of Office & Administrative Support Workers (43-1011)
2016 Est. Emp.: 5,350 / Mean Wage: \$29.50

Executive Secretaries & Executive Administrative Assistants (43-6011)
2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Office & Administrative Support Workers, All Other (43-9199)
2016 Est. Emp.: 520 / Mean Wage: \$19.23

General Management & Operations

Business Operations Specialists, All Other (15-1199)
2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

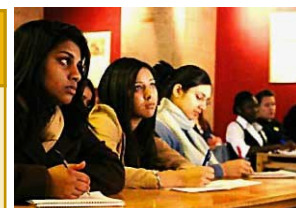
Computer User Support Specialists (15-1151)
2016 Est. Emp.: 1,090 / Mean Wage: \$25.23

Maintenance & Repair Workers, General (35-9099)
2016 Est. Emp.: 3,330 / Mean Wage: \$19.04

Managers, All Other (13-9199)
2016 Est. Emp.: 1,300 / Mean Wage: \$54.47

Computer Network Support Specialists (15-1152)
2016 Est. Emp.: 1,020 / Mean Wage: \$36.67

Installation, Maintenance & Repair Workers, All Other (49-9099)
2016 Est. Emp.: 520 / Mean Wage: \$20.28



Administration & Professional Support Occupations in the Education Career Clusters have extensive educational requirements including Post-Baccalaureate and Doctoral degree credentials. The minimum educational requirements for Teaching & Training occupations include an Associates, Bachelors or Masters degree, and some Post-Bachelors/Masters Teaching Certificates. This list highlights some of the entry- and middle-skilled Support Service Occupations prevalent in an educational setting. Career progression requires work experience, advanced professional/ technical skills or credentials.

Teaching & Training

Elementary School Teachers, Except Special Education (25-2021)
2016 Est. Emp.: 3,430 / Mean Wage: \$27.49

Secondary School Teachers, Except Special & Career/Technical Education (25-2031)
2016 Est. Emp.: 2,320 / Mean Wage: \$28.95

Teacher Assistants (25-9041) *
2016 Est. Emp.: 2,250 / Mean Wage: \$13.50

Middle School Teachers, Except Special & Career/Technical Education (25-2022)
2016 Est. Emp.: 1,620 / Mean Wage: \$29.35

Preschool Teachers, Except Special Education (25-2011)
2016 Est. Emp.: 1,250 / Mean Wage: \$17.18

Special Education Teachers, Secondary School (25-2054)
2016 Est. Emp.: 500 / Mean Wage: \$30.39

Special Education Teachers, Kindergarten & Elementary School (25-2021)
2016 Est. Emp.: 440 / Mean Wage: \$28.25

Kindergarten Teachers, Except Special Education (25-2012)
2016 Est. Emp.: 370 / Mean Wage: \$27.88

Coaches and Scouts (25-2022)
2016 Est. Emp.: 350 / Mean Wage: \$22.01

Self-Enrichment Education Teachers (25-3021) *
2016 Est. Emp.: 340 / Mean Wage: \$15.40

Education, Training, & Library Workers, All Other (25-9099)
2016 Est. Emp.: 290 / Mean Wage: \$20.78

Computer Science Teachers, Postsecondary (25-1021)
2016 Est. Emp.: 200 / Mean Wage: \$40.91

Teachers & Instructors, All Other, Except Substitute Teachers (25-3097)
2016 Est. Emp.: 170 / Mean Wage: \$23.12

Special Education Teachers, All Other (25-2059)
2016 Est. Emp.: 100 / Mean Wage: \$34.14

Adult Basic and Secondary Education and Literacy Teachers and Instructors (25-3011)
2016 Est. Emp.: 50 / Mean Wage: \$27.55

Administration & Administrative Support

Education Administrators, Elementary & Secondary School (11-9032)

2016 Est. Emp.: 620 / Mean Wage: \$53.64

Education Administrators, All Other (11-9039)
2016 Est. Emp.: 430 / Mean Wage: \$44.18

Education Administrators, Postsecondary (11-9033)
2016 Est. Emp.: 290 / Mean Wage: \$58.66

Training & Development Managers (11-3131)
2016 Est. Emp.: 100 / Mean Wage: \$54.74

Professional Support Services

Educational, Guidance, School, and Vocational Counselors (21-1012)

2016 Est. Emp.: 680 / Mean Wage: \$26.91

Instructional Coordinators (25-9031)
2016 Est. Emp.: 290 / Mean Wage: \$37.09

Librarians (25-4021)
2016 Est. Emp.: 240 / Mean Wage: \$27.52

Library Technicians (25-4031) *
2016 Est. Emp.: 160 / Mean Wage: \$15.14

Support Service Occupations: Office & Administrative Support

Locally specific data is difficult to estimate for employment numbers for occupations related to Education. This cluster encompasses occupations across all of Baltimore County's priority industries; this profile highlights the key entry- and middle-skilled Support Service Occupations in highest demand among Baltimore County employers.

Administrative & Clerical

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)
2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061) *
2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

First-Line Supervisors of Office & Administrative Support Workers (43-1011)
2016 Est. Emp.: 5,350 / Mean Wage: \$29.50

Bookkeeping, Accounting & Auditing Clerks (43-3031)
2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Executive Secretaries & Executive Administrative Assistants (43-6011)
2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Office & Administrative Support Workers, All Other (43-9199)
2016 Est. Emp.: 520 / Mean Wage: \$19.23

Support Service Occupations: General Management & Operations

Management

Management Analysts (13-1111)
2016 Est. Emp.: 4,610 / Mean Wage: \$31.21

Business Operations Specialists, All Other (43-3021)
2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Managers, All Other (13-9199)
2016 Est. Emp.: 1,300 / Mean Wage: \$54.47

Operations

Dining Room & Cafeteria Attendants & Bartender Helpers (35-9011) *
2016 Est. Emp.: 1,780 / Mean Wage: \$10.19

Childcare Workers (39-9011) *
2016 Est. Emp.: 1,430 / Mean Wage: \$11.19

Bus Drivers, School or Special Client (53-3022) *
2016 Est. Emp.: 1,210 / Mean Wage: \$14.43

Computer User Support Specialists (15-1151)
2016 Est. Emp.: 1,090 / Mean Wage: \$25.53

Computer Network Support Specialists (15-1152)
2016 Est. Emp.: 1,020 / Mean Wage: \$36.37

Cooks, Institution & Cafeteria (35-2012) *
2016 Est. Emp.: 410 / Mean Wage: \$15.58

Food Service Managers (43-4199)
2016 Est. Emp.: 390 / Mean Wage: \$33.05

Food Preparation & Serving Related Workers, All Other (35-9099) *
2016 Est. Emp.: 320 / Mean Wage: \$12.46

Operations (Maintenance)

Janitors & Cleaners, Except Maids & Housekeeping Cleaners (37-2011) *
2016 Est. Emp.: 5,280 / Mean Wage: \$13.14

Maintenance & Repair Workers, General (35-9099)
2016 Est. Emp.: 3,330 / Mean Wage: \$19.04

Landscaping & Groundskeeping Workers (35-9099) *
2016 Est. Emp.: 2,320 / Mean Wage: \$13.71

First-Line Supervisors of Housekeeping & Janitorial Workers (37-1011)
2016 Est. Emp.: 650 / Mean Wage: \$17.85

Installation, Maintenance & Repair Workers, All Other (49-9099)
2016 Est. Emp.: 520 / Mean Wage: \$20.28

First-Line Supervisors of Lawn Service & Groundskeeping Workers (37-1012)
2016 Est. Emp.: 320 / Mean Wage: \$21.44

*Education Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). Hourly mean wages for some occupations are estimated from annual salary data—DLLR Occupational Wage Estimates. High-demand occupations with wages below the locally determined minimum mean wage are denoted with an asterisk (*).*





Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Healthcare



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

The healthcare industry is a core economic driver in Baltimore County—with major medical institutions as well as a large share of the region’s healthcare workforce.

Regional Impacts

201,268
Jobs

\$10 Billion
Associated Worker
Income

Over 7,800
Employers



Statewide Impacts

346,379
Jobs

\$17 Billion
Associated Worker
Income

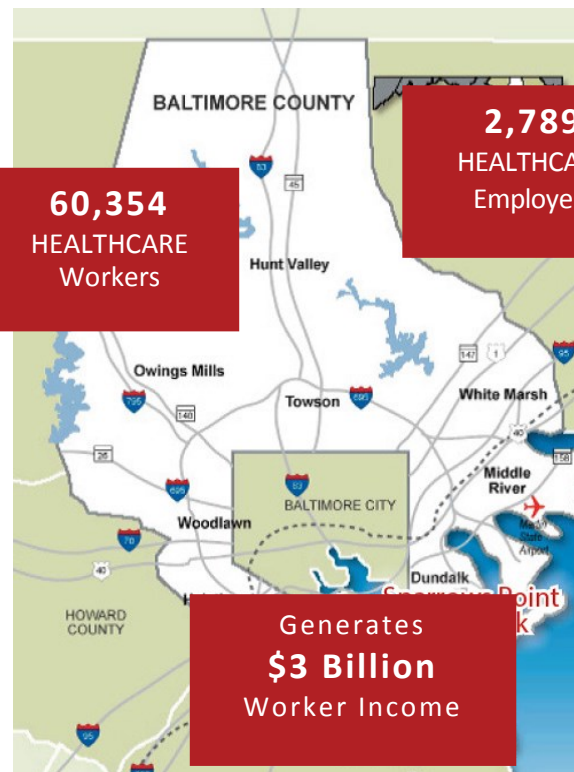
Over 16,500
Employers

Baltimore County, MD

With over 60,000 healthcare workers in Baltimore County, the County makes up 18% of the state’s employment in the industry.

Baltimore County is home to many major medical institutions that each contribute a large share to the County’s employment base. Some of these institutions include:

- Greater Baltimore Medical Center (GBMC)
⇒ 3,900 employees
- MedStar Franklin Square Hospital
⇒ 2,800 employees
- University of Maryland St. Joseph Medical Center
⇒ 2,230 employees
- Sheppard Pratt Health Systems
⇒ 1,910 employees
- LifeBridge Health/Northwest Hospital Center
⇒ 1,600 employees



Data Source: Maryland’s Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



The Healthcare industry sector is a core economic driver in Baltimore County. The County is home to major medical institutions as well as a large share of the region’s healthcare workforce. Growth in the Healthcare Cluster significantly outpaced overall employment growth in the County in 2001-15 and is expected to experience strong growth through 2024.

The Healthcare industry relies heavily upon occupations related to:



Therapeutic Services



Diagnostic Services



Support Services & Health Informatics

Healthcare Support Service Occupations include:

Administrative & Clerical

Community, Social & Personal Care Services

Operations

HEALTHCARE CAREER CLUSTERS

This section provides examples of the entry-, middle-, and highly-skilled Healthcare and related occupations in highest demand among healthcare facilities in Baltimore County. The data are categorized by “Healthcare Career Clusters” – groups of occupations in the same field of work that require similar skills – which can be used to help focus educational plans towards obtaining the necessary knowledge, competencies, and training for success in one of many Healthcare career options.

Healthcare Occupations At-A-Glance

- The Healthcare industry experienced significant employment gains across three main sectors between 2001-15: Ambulatory Health Care Services/Outpatient Treatment (47%); Nursing and Residential Care Facilities (45%); and, Hospitals (20%).
- Baltimore County is specialized in Ambulatory Health Care Services and Nursing and Residential Care Facilities; it has a slightly below average concentration of employment in Hospitals, given the large size of the Hospital Sector in neighboring Baltimore City.

Healthcare

- ◆ The majority of jobs in the Healthcare cluster are : Healthcare practitioners and technical occupations (33 % of jobs); and Healthcare support occupations (20%).
- ◆ Outside of these two groupings, employment is spread across a wide variety of occupations ranging from entry-skilled office and administrative support occupations to higher-skilled community and social service occupations.
- ◆ Employment in the Healthcare industry is highly concentrated in middle-skilled occupations (38%); While employment increased across all skills levels, the Healthcare Cluster’s employment of entry-skilled workers increased the most rapidly between 2001 and 2015 and those job opportunities are projected to continue to grow rapidly through 2024. Some occupations include:

Therapeutic & Diagnostic Services:

Entry - Middle-Skilled

Nursing Assistants
Medical Assistants
Pharmacy Technicians
Emergency Medical Technicians & Paramedics
Medical & Clinical Laboratory Technicians

Middle - High-Skilled

Registered Nurses
Dental Assistants
Surgical Technologists
Radiologic Technologists & Technicians
Diagnostic Medical Sonographers

Healthcare Support Services & Health Informatics:

Entry - Middle-Skilled

Social & Human Service Assistants
Healthcare Support Workers, All Other
Phlebotomists
Medical Equipment Preparers

Middle - High-Skilled

Medical & Health Service Managers
Community Health Workers
Medical Secretaries
Medical Records & Health Information Technicians

Support Service Occupations: Administrative, Clerical & Operations

Administrative and clerical support occupations are foundational to this industry, with a mix of middle- and entry-skilled occupations. While there is growing demand for many entry-skilled occupations, some of these jobs offer very low-wages. Healthcare employers also need workers with a range of skills for operational and management occupations:

Entry - Middle-Skilled

Secretaries and Administrative Assistants, Except Legal, Medical, & Executive
Office Clerks, General
Bookkeeping, Accounting & Auditing Clerks
Office & Administrative Support Workers, All Other

Middle - High-Skilled

Business Operations Specialists, All Other
Computer User Support Specialists
Food Service Managers
Maintenance & Repair Workers, General

This cluster encompasses occupations across all of Baltimore County’s priority industries. For a complete list of any of the in-demand occupations within these clusters, reference the Profile specific to the industry or occupation of interest.

Baltimore County's workforce and training systems are well aligned with the occupational needs of the region's Healthcare industry. The County boasts a significant concentration of resident workers in healthcare, as our education and training system generates a large number of graduates who advance into careers such as healthcare practitioners and in technical and healthcare support occupations. Here are a few middle-skilled occupations that...

KEEP THE COUNTY HEALTHY AND STRONG!

HIGH-DEMAND ENTRY- & MIDDLE-SKILLED OCCUPATIONS

Therapeutic & Diagnostic Services

Education & Skills:

Upon Entry: Some College, No Degree / Associates / Post-Secondary Certificate / Vocational Training / Professional Degree / Moderate-term OJT
 Advancement: Industry-recognized credentials from vocational training, apprenticeship, moderate-term OJT and work experience

Therapeutic Services

- Nursing Assistants (31-1014)**
2016 Est. Emp.: 7,280 / Mean Wage: \$14.36
- Registered Nurses (29-1141)**
2016 Est. Emp.: 6,980 / Mean Wage: \$35.01
- Licensed Practical & Licensed Vocational Nurses (29-2061)**
2016 Est. Emp.: 3,080 / Mean Wage: \$25.45
- Medical Assistants (31-9092)**
2016 Est. Emp.: 1,820 / Mean Wage: \$17.04
- Pharmacy Technicians (29-2052)**
2016 Est. Emp.: 1,240 / Mean Wage: \$14.45
- Dental Assistants (31-9091)**
2016 Est. Emp.: 1,060 / Mean Wage: \$19.57

Diagnostic Services

- Emergency Medical Technicians & Paramedics (29-2041)**
2016 Est. Emp.: 1,170 / Mean Wage: \$17.65
- Radiologic Technologists & Technicians (29-2034)**
2016 Est. Emp.: 690 / Mean Wage: \$30.58
- Veterinary Technologists & Technicians (29-2056)**
2016 Est. Emp.: 640 / Mean Wage: \$16.66
- Medical & Clinical Laboratory Technicians (29-2012)**
2016 Est. Emp.: 290 / Mean Wage: \$18.49
- Diagnostic Medical Sonographers (29-2032)**
2016 Est. Emp.: 250 / Mean Wage: \$33.11
- Magnetic Resonance Imaging Technologists (29-2035)**
2016 Est. Emp.: 130 / Mean Wage: \$36.22

Healthcare Support Services — Community, Social & Personal Care Occupations & Healthcare Informatics

Education & Skills:

Upon Entry: HS Diploma or equivalent / Some college, no degree / Associates / Post-Secondary Certificate / Vocational Training / Moderate-term OJT
 Advancement: Industry-recognized credentials from vocational training, apprenticeship, short- or moderate term OJT and work experience

Healthcare Support Services

- | | | |
|--|--|--|
| Social & Human Service Assistants (21-1093)
2016 Est. Emp.: 1,580 / Mean Wage: \$17.06 | Fitness Trainers & Aerobics Instructors (39-9031)
2016 Est. Emp.: 1,400 / Mean Wage: \$22.13 | Healthcare Support Workers, All Other (31-9099)
2016 Est. Emp.: 400 / Mean Wage: \$20.36 |
| Community Health Workers (21-1094)
2016 Est. Emp.: 240 / Mean Wage: \$20.32 | Medical Equipment Preparers (31-9093)
2016 Est. Emp.: 110 / Mean Wage: \$17.79 | Phlebotomists (31-9097)
2016 Est. Emp.: No BCO data / Mean Wage: \$17.78 |

Healthcare Informatics

- | | | |
|--|---|--|
| Receptionists & Information Clerks (43-4171) 2016 Est. Emp.: 3,980 / Mean Wage: \$13.88 | Medical Secretaries (43-6013) 2016 Est. Emp.: 2,052 / Mean Wage: \$18.70 | Medical Records & Health Information Technicians (29-2071) 2016 Est. Emp.: 440 / Mean Wage: \$20.25 |
|--|---|--|

Support Service Occupations — Administrative, Clerical & Operations

Support Service Occupations (SSO's) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. Key SSO's to the Healthcare industry include **Administrative & Clerical Support** and **Operations** positions. Office and administrative support occupations account for **11% of employment**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

Secretaries & Administrative Assistants, Except Legal, Medical & Executive (43-6014)

2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061)

2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

Bookkeeping, Accounting & Auditing Clerks (43-3031)

2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Computer User Support Specialists (15-1151)

2016 Est. Emp.: 1,090 / Mean Wage: \$25.23

First-Line Supervisors of Office & Administrative Support Workers (43-1011)

2016 Est. Emp.: 5,350 / Mean Wage: \$29.50

Executive Secretaries & Executive Administrative Assistants (43-6011)

2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Office & Administrative Support Workers, All Other (43-9199)

2016 Est. Emp.: 520 / Mean Wage: \$19.23

Maintenance & Repair Workers, General (35-9099)

2016 Est. Emp.: 3,330 / Mean Wage: \$19.04



The majority of jobs in the Healthcare career clusters are in healthcare practitioners and technical occupations and healthcare support occupations. Beyond these clusters, employment is spread across a wide variety of occupations ranging from entry-skilled office and administrative support occupations to higher-skilled community and social service occupations. Employment is highly concentrated in middle-skilled occupations, with increasing demand for skilled workers at an entry-level. Career progression requires work experience, post-secondary training, technical skills and credentials.

Therapeutic Services

Nursing Assistants (31-1014) *
2016 Est. Emp.: 7,280 / Mean Wage: \$14.36

Registered Nurses (29-1141)
2016 Est. Emp.: 6,980 / Mean Wage: \$35.01

Home Health Aides (31-1011) *
2016 Est. Emp.: 3,560 / Mean Wage: \$12.54

Licensed Practical & Licensed Vocational Nurses (29-2061)
2016 Est. Emp.: 3,080 / Mean Wage: \$25.45

Medical Assistants (31-9092)
2016 Est. Emp.: 1,820 / Mean Wage: \$17.04

Pharmacy Technicians (29-2052) *
2016 Est. Emp.: 1,240 / Mean Wage: \$14.45

Dental Assistants (31-9091)
2016 Est. Emp.: 1,060 / Mean Wage: \$19.57

Dental Hygienists (29-2021)
2016 Est. Emp.: 700 / Mean Wage: \$41.71

Occupational Therapists (29-1122)
2016 Est. Emp.: 570 / Mean Wage: \$39.44

Surgical Technologists (29-2055)
2016 Est. Emp.: 390 / Mean Wage: \$28.43

Physical Therapist Aides (31-2022) *
2016 Est. Emp.: 300 / Mean Wage: \$12.19

Physical Therapist Assistants (31-2021)
2016 Est. Emp.: 270 / Mean Wage: \$29.63

Physician Assistants (29-1071)
2016 Est. Emp.: 260 / Mean Wage: \$42.10

Massage Therapists (31-9011)
2016 Est. Emp.: 220 / Mean Wage: \$43.16

Respiratory Therapists (29-1126)
2016 Est. Emp.: 210 / Mean Wage: \$34.52

Occupational Health & Safety Specialists (29-9011)
2016 Est. Emp.: 170 / Mean Wage: \$36.14

Occupational Therapy Assistants (29-2011)
2016 Est. Emp.: 140 / Mean Wage: \$34.19

Dietitians and Nutritionists (29-1031)
2016 Est. Emp.: 130 / Mean Wage: \$28.88

Recreational Therapists (29-1125)
2016 Est. Emp.: 130 / Mean Wage: \$21.55

Ophthalmic Medical Technicians (29-2057)
2016 Est. Emp.: 120 / Mean Wage: \$22.27

Opticians, Dispensing (29-2081)
2016 Est. Emp.: 100 / Mean Wage: \$16.73

Athletic Trainers (29-9091)
2016 Est. Emp.: 50 / Mean Wage: \$20.27

Psychiatric Technicians (29-2053)
2016 Est. Emp.: 40 / Mean Wage: \$16.09

Occupational Health & Safety Technicians (29-9012)
2016 Est. Emp.: 20 / Mean Wage: \$25.27

Dietetic Technicians (29-2051)
2016 Est. Emp.: 10 / Mean Wage: \$20.24

Therapists, All Other (29-1129)
2016 Est. Emp.: No BCO data / Mean Wage: \$21.01

Diagnostic Services

Emergency Medical Technicians & Paramedics (29-2041)
2016 Est. Emp.: 1,170 / Mean Wage: \$17.65

Radiologic Technologists & Technicians (29-2034)
2016 Est. Emp.: 690 / Mean Wage: \$30.58

Veterinary Technologists & Technicians (29-2056)
2016 Est. Emp.: 640 / Mean Wage: \$16.66

Medical & Clinical Laboratory Technologists (29-2011)
2016 Est. Emp.: 350 / Mean Wage: \$31.93

Medical & Clinical Laboratory Technicians (29-2012)
2016 Est. Emp.: 290 / Mean Wage: \$18.49

Diagnostic Medical Sonographers (29-2032)
2016 Est. Emp.: 250 / Mean Wage: \$33.11

Health Technologists & Technicians, All Other (29-2099)
2016 Est. Emp.: 190 / Mean Wage: \$19.34

Magnetic Resonance Imaging Technologists (29-2035)
2016 Est. Emp.: 130 / Mean Wage: \$36.22

Cardiovascular Technologists & Technicians (29-2031)
2016 Est. Emp.: 120 / Mean Wage: \$32.30

Nuclear Medicine Technologists (29-2033)
2016 Est. Emp.: 60 / Mean Wage: \$39.21

Support Services, Community, Social Service & Personal Care Occupations

Personal Care Aides (39-9021) *
2016 Est. Emp.: 3,940 / Mean Wage: \$12.32

Social & Human Service Assistants (21-1093)
2016 Est. Emp.: 1,580 / Mean Wage: \$17.06

Fitness Trainers & Aerobics Instructors (39-9031)
2016 Est. Emp.: 1,400 / Mean Wage: \$22.13

Medical and Health Services Managers (11-9111)
2016 Est. Emp.: 1,050 / Mean Wage: \$52.05

Healthcare Support Workers, All Other (31-9099)
2016 Est. Emp.: 400 / Mean Wage: \$20.36

Community Health Workers (21-1094)
2016 Est. Emp.: 240 / Mean Wage: \$20.32

Medical Equipment Preparers (31-9093)
2016 Est. Emp.: 110 / Mean Wage: \$17.79

Orderlies (31-1015) *
2016 Est. Emp.: 80 / Mean Wage: \$13.68

Phlebotomists (31-9097)
2016 Est. Emp.: No BCO data / Mean Wage: \$17.78

Veterinary Assistants & Laboratory Animal Caretakers (31-9099)
*2016 Est. Emp.: No BCO data / Mean Wage: \$10.19

Health Informatics

Receptionists & Information Clerks (43-4171) *
2016 Est. Emp.: 3,980 / Mean Wage: \$13.88

Medical Secretaries (43-6013)
2016 Est. Emp.: 2,052 / Mean Wage: \$18.70

Medical Records & Health Information Technicians (29-2071)
2016 Est. Emp.: 440 / Mean Wage: \$20.25

Medical Transcriptionists (31-9094)
2016 Est. Emp.: No BCO data / Mean Wage: No data

Support Service Occupations: Administrative, Clerical & Operations

Locally specific data is difficult to estimate for employment numbers for occupations related to Healthcare. This cluster encompasses occupations across all of Baltimore County's priority industries; this profile highlights the key entry- and middle-skilled Support Service Occupations in highest demand among Baltimore County employers.

Administrative & Clerical

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)
2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061) *
2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

First-Line Supervisors of Office & Administrative Support Workers (43-1011)
2016 Est. Emp.: 5,350 / Mean Wage: \$29.50

Bookkeeping, Accounting & Auditing Clerks (43-3031)
2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Executive Secretaries & Executive Administrative Assistants (43-6011)
2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Office & Administrative Support Workers, All Other (43-9199)
2016 Est. Emp.: 520 / Mean Wage: \$19.23

Operations (General)

Dining Room & Cafeteria Attendants & Bartender Helpers (35-9011) *
2016 Est. Emp.: 1,780 / Mean Wage: \$10.19

Business Operations Specialists, All Other (13-1199)
2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Computer User Support Specialists (15-1151)
2016 Est. Emp.: 1,090 / Mean Wage: \$25.53

Computer Network Support Specialists (15-1152)
2016 Est. Emp.: 1,020 / Mean Wage: \$36.37

Cooks, Institution & Cafeteria (35-2012) *
2016 Est. Emp.: 410 / Mean Wage: \$15.58

Food Service Managers (43-4199)
2016 Est. Emp.: 390 / Mean Wage: \$33.05

Food Preparation & Serving Related Workers, All Other (35-9099) *
2016 Est. Emp.: 320 / Mean Wage: \$12.46

Operations (Maintenance)

Janitors & Cleaners, Except Maids & Housekeeping Cleaners (37-2011) *
2016 Est. Emp.: 5,280 / Mean Wage: \$13.14

Maintenance & Repair Workers, General (35-9099)
2016 Est. Emp.: 3,330 / Mean Wage: \$19.04

Landscaping & Groundskeeping Workers (35-9099) *
2016 Est. Emp.: 2,320 / Mean Wage: \$13.71

First-Line Supervisors of Housekeeping & Janitorial Workers (37-1011)
2016 Est. Emp.: 650 / Mean Wage: \$17.85

Installation, Maintenance & Repair Workers, All Other (49-9099)
2016 Est. Emp.: 520 / Mean Wage: \$20.28

First-Line Supervisors of Lawn Service & Groundskeeping Workers (37-1012)
2016 Est. Emp.: 320 / Mean Wage: \$21.44

*Healthcare Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). High-demand occupations with wages below the locally determined minimum mean wage are denoted with an asterisk (*).*





Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Government - Federal, State & Local



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

INDUSTRY PROFILE

Government - Federal, State & Local

Each day over 55,000 government workers report to work in Baltimore County. With easy access to the I-95 corridor, close proximity to Washington D.C., and an abundant skilled and educated workforce, Baltimore County is home to significant federal and local government headquarters.

Regional Impacts

219,275
Jobs

\$14 Billion
Associated Worker
Income

Over 1,500
Employers



Statewide Impacts

486,101
Jobs

\$33.2 Billion
Associated Worker
Income

Over 3,500
Employers

Baltimore County, MD

Baltimore County employs 11% of the State's total workers (federal, state, and local).

Social Security Administration (SSA)

SSA's Headquarters, located in Woodlawn, employs over **11,000**.

Centers for Medicare and Medicaid Services (CMS)

CMS employs over **4,000** at Federal Center in Woodlawn.

55,406
GOVERNMENT
Workers

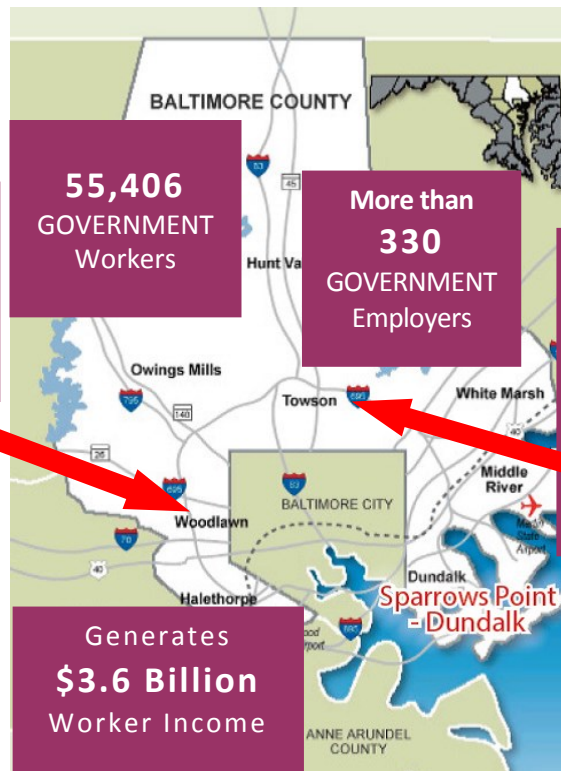
More than 330
GOVERNMENT
Employers

Baltimore County Government

Headquartered in Towson, Baltimore County Government employed over **29,000** people in 2016.

The County is the only incorporated local-level government in Baltimore County.

Generates
\$3.6 Billion
Worker Income



Data Source: Maryland's Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



OCCUPATIONAL PROFILE

Government & Public Administration

Baltimore County is highly specialized in federal employment, signifying a concentration of employment nearly two and one half times above the national average. Within the Greater Baltimore Region, Baltimore County serves as the headquarters for two federal agencies—Social Security Administration and Centers for Medicare & Medicaid Services (CMS). Coupled with state and local government as major employers and numerous businesses who are federal contractors, this cluster is a key economic driver for the County and Greater Baltimore Region.

The Government & Public Administration industry relies heavily upon occupations related to:



**Governance, Regulation,
Revenue & Taxation**



**Public Management &
Administration**



**Support Services - Administrative,
Management & Operations**

Government & Public Administration Support Service Occupations include:

Office & Administrative Support
General Management
Operations

GOVERNMENT & PUBLIC ADMINISTRATION CAREER CLUSTERS

This section provides examples of the entry-, middle-, and highly-skilled Government & Public Administration and related occupations in highest demand among federal, state and local agencies in Baltimore County. The data are categorized by “Government & Public Administration Career Clusters” – groups of occupations in the same field of work that require similar skills – which can be used to help focus education plans towards obtaining the necessary knowledge, competencies, and training for success in one of many career options.

Government & Public Administration Occupations At-A-Glance

- Federal Agency employment in Baltimore County is highly divided between entry- and high-skilled jobs with **high-skilled occupations accounting for 48%** of all jobs and **entry-skilled occupations accounting for 43%**.
- Job losses since 2001 have been greatest in **middle-skilled (-9%)** and **entry-skilled (-5%)** occupations where technology can replace workers. Computer and Mathematical Occupations is the only occupational grouping that experienced job growth.

Government & Public Administration

Governance, Regulation, Revenue & Taxation:

◆ Occupations in this cluster require extensive educational credentials (Associates, Bachelors, Post-Secondary Certificate) and years of work-related experience. Some occupations include:

- | | | |
|--|--|---------------------------------------|
| Civil Construction & Building Inspectors | Compliance Officers, Except Agriculture, Construction, Health & Safety, & Transportation | Appraisers & Assessors of Real Estate |
|--|--|---------------------------------------|

Public Management & Administration:

◆ Many entry- and middle-skilled occupations within the Government & Public Administration clusters have minimal educational requirements (HS Diploma/Equivalent, Some College/No Degree, Associates, Vocational Training), but require highly developed technical skills for the job. Advancement and earnings increases come with years of work-related experience and tenure. Some occupations include:

- | | |
|---|---|
| Claims Adjusters, Examiners & Investigators | Eligibility Interviewers, Government Programs |
|---|---|

◆ Within the Public Management & Administration career clusters, entry- and middle-skilled career opportunities are available within agencies that provide protective services to the public. Some occupations include:

- | | |
|---|---|
| <u>Law, Public Safety, Corrections & Security</u>
Police & Sheriff's Patrol Officers
First-Line Supervisors of Police & Detectives
First-Line Supervisors of Protective Service Workers, All Other | <u>Emergency & Fire Management Services</u>
Emergency Medical Technicians & Paramedics
First-Line Supervisors of Fire Fighting & Prevention Workers
Police, Fire & Ambulance Dispatchers |
|---|---|

Support Service Occupations: Administrative, General Management & Operations

The core occupational groupings critical to this cluster (based on percent of total employment) include:

- | | | |
|--|--|---|
| <u>Entry - Middle-Skilled</u>
Office and Administrative Support Occupations (10%) | <u>Middle - High-Skilled</u>
Business and Financial Operations occupations (28%)
Healthcare Practitioners and Technical Occupations (9%) | Computer and Mathematical Occupations (9%)
Management Occupations (9%) |
|--|--|---|

This cluster encompasses occupations across all of Baltimore County's priority industries. For a complete list of any of the in-demand occupations within these clusters, reference the Profile specific to the industry or occupation of interest.



SPOTLIGHT JOBS

Government & Public Administration

The business of government is becoming more technologically driven and as a result, job losses have been greatest in entry- and middle-skilled occupations where technology can replace workers. This trend is expected to continue through 2024, especially in office and administrative support occupations. This indicates the need for career services to upgrade the computer, professional and technological skills of the incumbent and entering workforce to meet the changing demands of public sector employers.

Here are a few middle-skilled occupations that...

KEEP OUR GOVERNMENT SERVING THE PUBLIC!

HIGH-DEMAND MIDDLE-SKILLED OCCUPATIONS

Governance, Regulation, Revenue & Taxation

Education & Skills:

Upon Entry: Associates / Post-Secondary Certificate / Bachelors

Advancement: Educational credentials, recognized expertise from vocational training, years of work-related experience, tenure

Compliance Officers, Except Agriculture, Construction, Health & Safety, & Transportation (13-1041)

2016 Est. Emp.: 790 / Mean Wage: \$30.81

Construction & Building Inspectors (47-4011)

2016 Est. Emp.: 440 / Mean Wage: \$26.05

Appraisers and Assessors of Real Estate (13-2021)

2016 Est. Emp.: 240 / Mean Wage: \$26.47

Occupational Health & Safety Specialists (29.9011)

2016 Est. Emp.: 170 / Mean Wage: \$36.14

Public Management & Administration

Education & Skills:

Upon Entry: HS Diploma or Equivalent / Some College, No Degree / Associates / Vocational Training / Advanced Technical Skills

Advancement: Recognized expertise from vocational training, short-, moderate-or long- term OJT and years of work experience, tenure

Public Management & Administration

Claims Adjusters, Examiners & Investigators (13-1031)

2016 Est. Emp.: 2,940 / Mean Wage: \$35.32

Eligibility Interviewers, Government Programs (43-4061)

2016 Est. Emp.: 230 / Mean Wage: \$24.56

Law, Public Safety, Corrections & Security

Police and Sheriff's Patrol Officers (33-3051)

2016 Est. Emp.: 1,900 / Mean Wage: \$34.11

Emergency & Fire Management Services

Emergency Medical Technicians and Paramedics (29-2041)

2016 Est. Emp.: 1,170 / Mean Wage: \$17.65

First-Line Supervisors of Police and Detectives (33-1012)

2016 Est. Emp.: 550 / Mean Wage: \$40.27

First-Line Supervisors of Fire Fighting & Prevention Workers (33-1021)

2016 Est. Emp.: 250 / Mean Wage: \$45.93

First-Line Supervisors of Protective Service Workers, All Other (33-1099)

2016 Est. Emp.: 400 / Mean Wage: \$21.77

Police, Fire, and Ambulance Dispatchers (43-5031)

2016 Est. Emp.: 200 / Mean Wage: \$21.89

Support Service Occupations (SSO's) – Administrative, General Management & Operations

The Government & Public Administration industry relies on key SSO's related to: **Office, Administrative & Clerical Support; General Management, and, Operations.** Office and administrative support occupations account for **11% of employment**, creating entry-points to many public sector career opportunities within local, state and federal government agencies, depending upon one's interests, skills and abilities.

Administrative & Clerical

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)

2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Executive Secretaries & Executive Administrative Assistants (43-6011)

2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Customer Service Representatives (43-4051)

2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Bill & Account Collectors (43-3011)

2016 Est. Emp.: 1,010 / Mean Wage: \$19.57

Bookkeeping, Accounting & Auditing Clerks (43-3031)

2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Office & Administrative Support Workers, All Other (43-9199)

2016 Est. Emp.: 520 / Mean Wage: \$19.23

Billing and Posting Clerks (43-3021)

2016 Est. Emp.: 1,500 / Mean Wage: \$19.18

Information & Record Clerks, All Other (43-4199)

2016 Est. Emp.: 380 / Mean Wage: \$23.63

General Management & Operations

General & Operations Managers (11-1021)

2016 Est. Emp.: 7,260 / Mean Wage: \$31.21

Computer Occupations, All Other (15-1199)

2016 Est. Emp.: 3,990 / Mean Wage: \$49.80

Business Operations Specialists, All Other (15-1199)

2016 Est. Emp.: 1,780 / Mean Wage: \$40.69



IN-DEMAND OCCUPATIONS

Government & Public Administration

Occupations in the Government & Public Administration Career Clusters have varying requirements for minimum education/skill levels, and are almost equally split between high-skilled and entry-skilled occupations. Career progression may require short-, moderate- or long-term on-the-job training (OJT), years of work experience, and professional and technical credentials.

Governance, Regulation, Revenue & Taxation

Compliance Officers, Except Agriculture, Construction, Health & Safety, & Transportation (13-1041)

2016 Est. Emp.: 790 / Mean Wage: \$30.81

Construction and Building Inspectors (47-4011)

2016 Est. Emp.: 440 / Mean Wage: \$26.05

Logisticians (13-1081)

2016 Est. Emp.: 300 / Mean Wage: \$38.46

Appraisers and Assessors of Real Estate (13-2021)

2016 Est. Emp.: 240 / Mean Wage: \$26.47

Occupational Health and Safety Specialists (29-9011)

2016 Est. Emp.: 170 / Mean Wage: \$36.14

Occupational Health and Safety Technicians (29-9012)

2016 Est. Emp.: 20 / Mean Wage: \$25.27

Transportation Inspectors (53-6051)

2016 Est. Emp.: No BCO data / Mean Wage: \$26.19

Public Management & Administration

Public Management

Claims Adjusters, Examiners & Investigators (13-1031)

2016 Est. Emp.: 2,940 / Mean Wage: \$35.32

Eligibility Interviewers, Government Programs (43-4061)

2016 Est. Emp.: 230 / Mean Wage: \$24.56

Postmasters & Mail Superintendents (11-9131)

2016 Est. Emp.: 20 / Mean Wage: \$33.98

Law, Public Safety, Corrections & Security

Police and Sheriff's Patrol Officers (33-3051)

2016 Est. Emp.: 1,900 / Mean Wage: \$34.11

First-Line Supervisors of Police and Detectives (33-1012)

2016 Est. Emp.: 550 / Mean Wage: \$40.27

First-Line Supervisors of Protective Service Workers, All Other (33-1099)

2016 Est. Emp.: 400 / Mean Wage: \$21.77

Detectives and Criminal Investigators (33-3021)

2016 Est. Emp.: 50 / Mean Wage: \$44.68

Emergency & Fire Management Services

Emergency Medical Technicians and Paramedics (29-2041)

2016 Est. Emp.: 1,170 / Mean Wage: \$17.65

First-Line Supervisors of Fire Fighting & Prevention Workers (33-1021)

2016 Est. Emp.: 250 / Mean Wage: \$45.93

Police, Fire, and Ambulance Dispatchers (43-5031)

2016 Est. Emp.: 200 / Mean Wage: \$21.89

Support Service Occupations: Administrative Support

Administrative Support

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)

2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Customer Service Representatives (43-4051)

2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Office Clerks, General (43-9061) *

2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

Bookkeeping, Accounting & Auditing Clerks (43-3031)

2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Billing and Posting Clerks (43-3021)

2016 Est. Emp.: 1,500 / Mean Wage: \$19.18

Paralegals & Legal Assistants (23-2011)

2016 Est. Emp.: 1,430 / Mean Wage: \$24.38

Executive Secretaries & Executive Administrative Assistants (43-6011)

2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Bill & Account Collectors (43-3011)

2016 Est. Emp.: 1,010 / Mean Wage: \$19.57

Order Clerks (43-4151)

2016 Est. Emp.: 880 / Mean Wage: \$17.93

Office & Administrative Support Workers, All Other (43-9199)

2016 Est. Emp.: 520 / Mean Wage: \$19.23

Title Examiners, Abstractors, and Searchers (23-2093)

2016 Est. Emp.: 500 / Mean Wage: \$19.40

Information & Record Clerks, All Other (43-4199)

2016 Est. Emp.: 380 / Mean Wage: \$23.63

Postal Service Mail Carriers (43-5052)

2016 Est. Emp.: 310 / Mean Wage: \$24.38

Procurement Clerks (43-3061)

2016 Est. Emp.: 230 / Mean Wage: \$20.74

Financial Clerks, All Other (43-3099)

2016 Est. Emp.: 100 / Mean Wage: \$23.03

Postal Service Clerks (43-5051)

2016 Est. Emp.: 80 / Mean Wage: \$22.99

Support Service Occupations: General Management & Operations

General Management

General & Operations Managers (11-1021)

2016 Est. Emp.: 7,260 / Mean Wage: \$31.21

First-Line Supervisors of Office & Administrative Support Workers (43-1011)

2016 Est. Emp.: 5,530 / Mean Wage: \$29.50

Managers, All Other (11-9199)

2016 Est. Emp.: 1,300 / Mean Wage: \$54.47

Operations

Computer Occupations, All Other (15-1199)

2016 Est. Emp.: 3,990 / Mean Wage: \$49.80

Business Operations Specialists, All Other (15-1199)

2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Purchasing Agents, Except Wholesale, Retail & Farm Products (13-1023)

2016 Est. Emp.: 910 / Mean Wage: \$32.33

Electrical & Electronics Engineering Technicians (17-3023)

2016 Est. Emp.: 630 / Mean Wage: \$31.22

Property, Real Estate & Community Association Managers (11-9141)

2016 Est. Emp.: 450 / Mean Wage: \$23.63

Support Service Occupations: Administrative, General Management & Operations

Locally specific data is difficult to estimate for employment numbers for occupations related to Government & Public Administration at a federal, state and local level. This profile highlights the key entry- and middle-skilled support service occupations in highest demand among Baltimore County employers.

Government & Public Administration Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). Employment data for Federal Agencies were derived from the Jobs of the Future Report. High-demand occupations with wages slightly below the locally determined minimum mean wage are denoted with an asterisk (*).





Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Financial Services



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

INDUSTRY PROFILE

Financial Services

The Financial Services industry includes firms that are engaged in activities such as investing, lending, and securities trading. In Baltimore County, the Financial Services industry is the third largest of the nine priority industries and accounts for six percent of all jobs in the County.

Regional Impacts

72,758
Jobs

\$6.7 Billion
Associated Worker
Income

Over 6,900
Employers



T. Rowe Price in Owings Mills (Baltimore County)

Statewide Impacts

139,872
Jobs

\$12.4 Billion
Associated Worker
Income

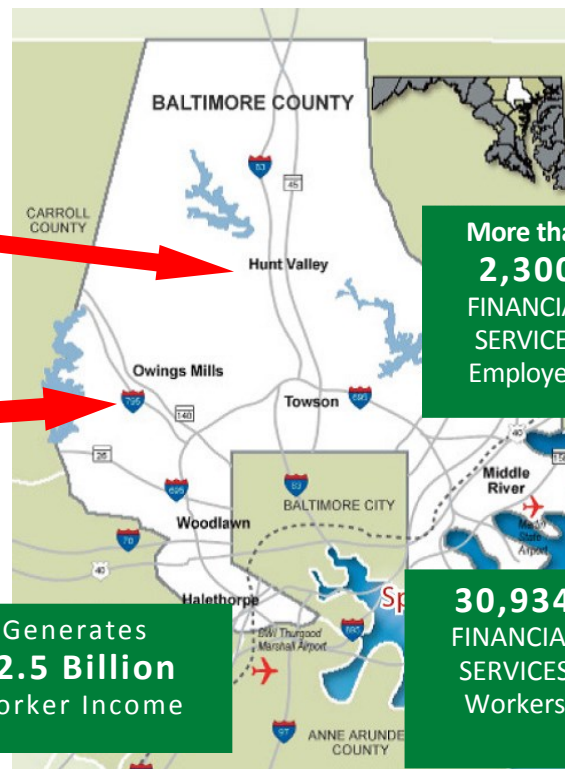
Over 15,000
Employers

Baltimore County, MD

With over 2,000 Financial Services employers, Baltimore County employs more than 20% of the State's workers in this industry.

Bank of America - one of the world's leading financial institutions and the largest bank in the Baltimore region—added **600 new jobs** to its Hunt Valley complex between 2016 and 2018. Bank of America anticipates **1,500 total new jobs by 2020**.

T. Rowe Price - a global investment management firm - **employs over 4,000 people** in its Baltimore County Owings Mills location.



More than 2,300
FINANCIAL
SERVICES
Employers

Generates
\$2.5 Billion
Worker Income

30,934
FINANCIAL
SERVICES
Workers

Data Source: Maryland's Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



Financial Services is one of Baltimore County's most important industries. It is the third largest of the nine target industry clusters and accounts for six percent of all jobs in the County. Despite being negatively impacted by the Great Recession, employment growth in Financial Services outpaced overall employment growth in Baltimore County in 2001-2015 and is expected to experience strong growth through 2024.

The Financial Services industry relies heavily upon occupations related to:



Accounting & Business Finance



Securities & Investments



Banking, Consumer & Insurance Services

Financial Services Support Service Occupations include:

Administrative & Clerical

Business Management & Administration

Professional Sales & Service

FINANCIAL SERVICES CAREER CLUSTERS

This section provides examples of the entry-, middle-, and highly-skilled Financial Services and related occupations in highest demand among employers in Baltimore County. The data are categorized by "Financial Services Career Clusters" – groups of occupations in the same field of work that require similar skills – which can be used to help focus educational plans towards obtaining the necessary knowledge, competencies, and training for success in one of many Financial Services career options.

Financial Services Occupations At-A-Glance

- Employment in the Financial Services cluster is spread across a wide variety of occupations. The industry's largest occupational grouping is Office and Administrative Support occupations, which accounts for 38% of employment and contains a mix of entry- and middle-skilled occupations.
- The second largest grouping of occupations support Business and Financial Operations, accounting for 30% of employment, followed by Sales and Related Occupations, with 14% of employment.

Financial Services

- ◆ The Financial Services industry has been significantly impacted by changes in technology, with increased use of information technology reducing demand for entry-skilled office support occupations.
- ◆ While this cluster experienced growth across all major occupational groupings (2001-2015), changes in occupational demand significantly favor high- (38%) and middle-skilled (32%) jobs. High-skilled occupations are projected to experience the most significant employment gains through 2024.
- ◆ The leading entry- and middle-skilled occupations are highly concentrated in Sales, Customer Service, Financial, Administrative Support, and Computer-Related Occupations. High-skilled occupations are concentrated in Business and Financial Operations. Some occupations include:

Accounting & Business Finance

Accountants & Auditors
Financial Managers
Financial Analysts
Budget Analysts
Credit Analysts

Securities & Investments

Personal Financial Advisors
Financial Specialists, All Other
Securities, Commodities & Financial
Services Sales Agents

Banking, Consumer & Insurance Services

Tellers
Loan Officers
Credit Authorizers, Checkers & Clerks
Insurance Sales Agents
Insurance Claims & Processing Clerks

Support Service Occupations: Administrative & Clerical, Business Management, Sales & Service

Administrative & Clerical Support occupations are foundational to this industry, with a mix of middle- and entry-skilled occupations. The Financial Services industry also requires workers with a range of skills for Business Management & Administration and related professional service occupations:

Entry - Middle-Skilled

Secretaries and Administrative Assistants, Except Legal, Medical, & Executive
Office Clerks, General
Customer Service Representatives
Bookkeeping, Accounting & Auditing Clerks
Office & Administrative Support Workers, All Other

Middle - High-Skilled

Business Operations Specialists, All Other
Information Technology Support Workers, All Other
Computer-User Support Specialist
Computer Automated Teller & Office Machine Repairers
Sales Representatives, Services, All Other

This cluster encompasses occupations across all of Baltimore County's priority industries. For a complete list of any of the in-demand occupations within these clusters, reference the Profile specific to the industry or occupation of interest.

Baltimore County's workforce, education and training systems are well aligned with the occupational needs of the region's Financial Services industry. The County has a strong concentration of resident workers and graduates in Management, Business and Financial Operations, Computer and Mathematical, and Office and Administrative Support occupations that are critical to the cluster. Here are a few middle- and high-skilled occupations that...

KEEP BALTIMORE COUNTY FISCALLY FIT!

HIGH-DEMAND MIDDLE-AND HIGH-SKILLED OCCUPATIONS

Accounting & Business Finance / Securities & Investments

Education & Skills:
 Upon Entry: Bachelors / Post-Baccalaureate Certificate / Masters / Professional Degree
 Advancement: Industry-recognized credentials, Work Experience

Accounting & Business Finance

Accountants & Auditors (1302011)
 2016 Est. Emp.: 4,770 / Mean Wage: \$39.23

Financial Managers (11-3031)
 2016 Est. Emp.: 1,800 / Mean Wage: \$42.32

Occupational Titles and 2-Digit SOC Sub-Codes:

- .01 - Treasurers & Controllers
- .02 - Financial Managers, Branch or Department

Financial Analysts (13-2051)
 2016 Est. Emp.: 1,230 / Mean Wage: \$43.71

Securities & Investments

Personal Financial Advisors (13-2052)
 2016 Est. Emp.: 1,700 / Mean Wage: \$49.39

Financial Specialists, All Other (13-2099)
 2016 Est. Emp.: 470 / Mean Wage: \$32.94

Occupational Titles and 2-Digit SOC Sub-Codes

- .01 - Financial Quantitative Analysts
- .02 - Risk Management Specialists
- .03 - Investment Underwriters
- .04 - Fraud Examiners, Investigators & Analysts

Securities, Commodities & Financial Services Sales Agents (13-3031)
 2016 Est. Emp.: 840 / Mean Wage: \$46.15

Banking, Consumer & Insurance Services

Education & Skills:
 Upon Entry: HS Diploma or equivalent / Some College, No Degree / Associates / Bachelors / Post-Secondary Certificate / Vocational Training / Professional Degree
 Advancement: Industry-recognized credentials from vocational training, Short- to Moderate-term OJT / Work Experience

Banking & Consumer Services

Tellers (43-3071)
 2016 Est. Emp.: 800 / Mean Wage: \$15.18

Loan Officers (13-2072)
 2016 Est. Emp.: 660 / Mean Wage: \$39.20

Credit Authorizers, Checkers & Clerks (43-4041)
 2016 Est. Emp.: 310 / Mean Wage: \$49.79

Insurance

Insurance Sales Agents (41-3021)
 2016 Est. Emp.: 1,800 / Mean Wage: \$31.62

Insurance Claims & Processing Clerks (43-9041)
 2016 Est. Emp.: 780 / Mean Wage: \$21.07

Insurance Underwriters (13-2053)
 2016 Est. Emp.: 580 / Mean Wage: \$40.48

Support Service Occupations

Support Service Occupations (SSO's) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. Key SSO's to the Financial Services industry include **Administrative & Clerical Support, Business Management & Administration, and Professional Sales & Service** positions. Office and administrative support occupations account for **11% of employment**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

Secretaries & Administrative Assistants, Except Legal, Medical & Executive (43-6014)

2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061)

2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

Bookkeeping, Accounting & Auditing Clerks (43-3031)

2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Computer Network Support Specialists (15-1152)

2016 Est. Emp.: 1,020 / Mean Wage: \$36.37

Customer Service

Representatives (43-4051)

2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Sales Representatives, Services, All Other(41-3099)

2016 Est. Emp.: 5,380 / Mean Wage: \$28.71

Business Operations Specialists, All Other (13-1199)

2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Computer User Support Specialists (15-1151)

2016 Est. Emp.: 1,090 / Mean Wage: \$25.53



Financial Services is the most highly skilled of Baltimore County's nine target industry clusters, with 72% of all jobs classified as high-skilled jobs and 59% of employment in highly-skilled computer and mathematical occupations. While employment growth over the past decade has occurred across the cluster, middle-skilled jobs saw the most significant increases and are projected to increase most rapidly through 2024. The demand for middle-skilled job openings may indicate the need for expanded, non-traditional certificate training programs resulting in industry recognized credentials. Career progression requires work experience, post-secondary training and advanced professional and technical skills.

Accounting & Business Finance

Accountants & Auditors (13-2011)
2016 Est. Emp.: 4,770 / Mean Wage: \$39.23

Financial Managers (11-3031)
2016 Est. Emp.: 1,800 / Mean Wage: \$42.32

Occupational Titles and SOC Sub-Codes:
.01– Treasurers & Controllers
.02– Financial Managers, Branch or Department

Financial Analysts (13-2051)
2016 Est. Emp.: 1,230 / Mean Wage: \$43.71

Appraisers & Assessors of Real Estate (13-2021)
2016 Est. Emp.: 240 / Mean Wage: \$26.47

Budget Analysts (13-2031)
2016 Est. Emp.: 180 / Mean Wage: \$38.99

Credit Analysts (13-2041)
2016 Est. Emp.: 160 / Mean Wage: \$33.63

Securities & Investments

Personal Financial Advisors (13-2052)
2016 Est. Emp.: 1,700 / Mean Wage: \$49.39

Financial Specialists, All Other (13-2099)
2016 Est. Emp.: 470 / Mean Wage: \$32.94

Occupational Titles and SOC Sub-Codes:
.01 - Financial Quantitative Analysts
.02 - Risk Management Specialists
.03 - Investment Underwriters
.04 - Fraud Examiners, Investigators & Analysts

Securities, Commodities & Financial Services Sales Agents (13-3031)
2016 Est. Emp.: 840 / Mean Wage: \$46.15

Brokerage Clerks (43-4011)
2016 Est. Emp.: No BCO data / Mean Wage: \$28.88

Banking, Consumer & Insurance Services

Banking & Consumer Services

Tellers (43-3071) *
2016 Est. Emp.: 800 / Mean Wage: \$15.18

Loan Officers (13-2072)
2016 Est. Emp.: 660 / Mean Wage: \$39.20

Loan Interviewers & Clerks (43-4131)
2016 Est. Emp.: 350 / Mean Wage: \$18.36

Credit Authorizers, Checkers & Clerks (43-4041)
2016 Est. Emp.: 310 / Mean Wage: \$49.79

Credit Counselors (13-2071)
2016 Est. Emp.: 130 / Mean Wage: \$19.83

Occupational Titles and SOC Sub-Codes:
.01– Loan Counselors

Financial Clerks, All Other (43-3099)
2016 Est. Emp.: 100 / Mean Wage: \$23.03

Financial Examiners (13-2061)
2016 Est. Emp.: No BCO data / Mean Wage: \$40.48

Tax Preparers (13-2061)
2016 Est. Emp.: No BCO data / Mean Wage: \$23.44

Insurance

Insurance Sales Agents (41-3021)
2016 Est. Emp.: 1,800 / Mean Wage: \$31.62

Insurance Claims & Processing Clerks (43-9041)
2016 Est. Emp.: 780 / Mean Wage: \$21.07

Insurance Underwriters (13-2053)
2016 Est. Emp.: 580 / Mean Wage: \$40.48

Actuaries (15-2011)
2016 Est. Emp.: 160 / Mean Wage: \$54.16

Support Service Occupations: Administrative & Clerical

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)
2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061) *
2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

First-Line Supervisors of Office & Administrative Support Workers (43-1011)
2016 Est. Emp.: 5,350 / Mean Wage: \$29.50

Bookkeeping, Accounting & Auditing Clerks (43-3031)
2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Executive Secretaries & Executive Administrative Assistants (43-6011)
2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Office & Administrative Support Workers, All Other (43-9199)
2016 Est. Emp.: 520 / Mean Wage: \$19.23

Support Service Occupations: Business Management, Professional Sales & Service

Locally specific data is difficult to estimate for employment numbers for occupations related to Financial Services. This cluster encompasses occupations across all of Baltimore County's priority industries; this profile highlights the key Support Service Occupations in highest demand among Baltimore County employers.

Business Management & Administration

Network & Computer Systems Administrators (15-1142)
2016 Est. Emp.: 1,800 / Mean Wage: \$50.24

Business Operations Specialists, All Other (13-1199)
2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Managers, All Other (11-9199)
2016 Est. Emp.: 1,300 / Mean Wage: \$54.47

Computer & Information Systems Managers (11-3021)
2016 Est. Emp.: 1,100 / Mean Wage: \$67.36

Computer Network Support Specialists (15-1152)
2016 Est. Emp.: 1,020 / Mean Wage: \$36.37

Computer User Support Specialists (15-1151)
2016 Est. Emp.: 1,090 / Mean Wage: \$25.53

Marketing Managers (11-2021)
2016 Est. Emp.: 430 / Mean Wage: \$66.78

Computer, Automated Teller & Office Machine Repairers (49-2011)
2016 Est. Emp.: 430 / Mean Wage: \$19.36

Information Technology Support Workers, All Other (31-9099)
2016 Est. Emp.: 400 / Mean Wage: \$20.36

Compensation, Benefits & Job Analysis Specialists (13-1141)
2016 Est. Emp.: 280 / Mean Wage: \$32.19

Purchasing Managers (11-3061)
2016 Est. Emp.: 200 / Mean Wage: \$63.29

Statisticians (15-2041)
2016 Est. Emp.: 70 / Mean Wage: \$46.26

Professional Sales & Service

Customer Service Representatives (43-4051)
2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Sales Representatives, Services, All Other (41-3099)
2016 Est. Emp.: 5,380 / Mean Wage: \$28.71

Sales Managers (11-2022)
2016 Est. Emp.: 840 / Mean Wage: \$70.45

Sales & Related Workers, All Other (41-9099)
2016 Est. Emp.: 450 / Mean Wage: \$21.01

*Financial Services Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). High-demand occupations with wages below the locally determined minimum mean wage are denoted with an asterisk (*).*





Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Professional & Business Services



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

INDUSTRY PROFILE

Professional & Business Services

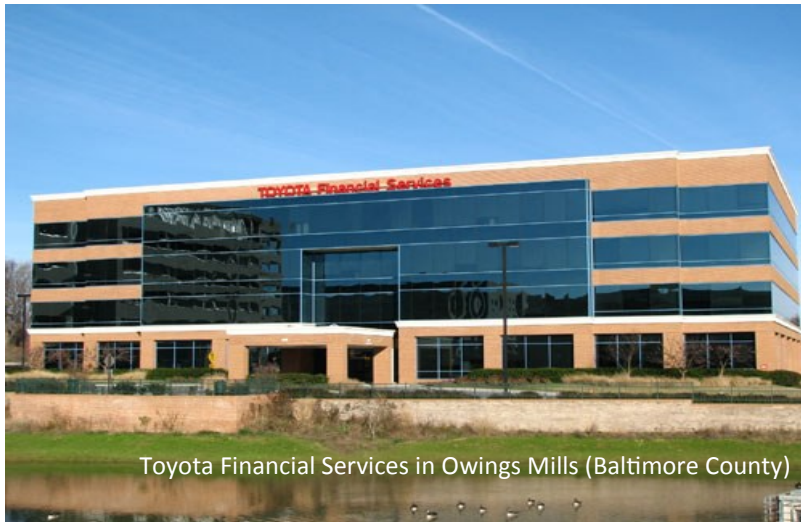
The Professional & Business Services industry is made up of corporate headquarters, non-information technology professional services, and office services. With developments like Hunt Valley and Owings Mills, Baltimore County has traditionally served as a major location for corporate headquarters and corporate branch office operations and has a strong base of business and professional services companies.

Regional Impacts

213,933
Jobs

\$15 Billion
Associated Worker
Income

Over 15,000
Employers



Toyota Financial Services in Owings Mills (Baltimore County)

Statewide Impacts

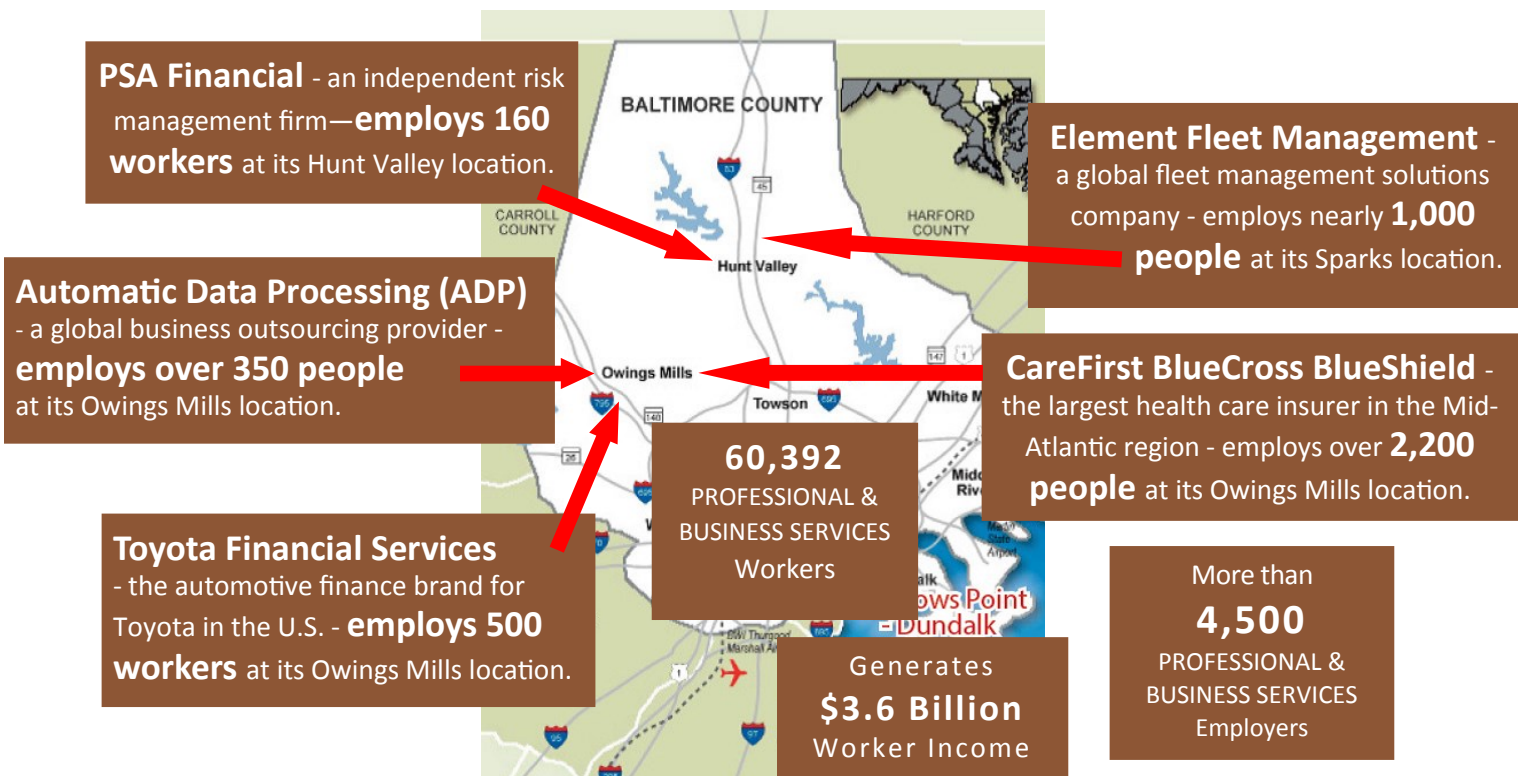
442,057
Jobs

\$33 Billion
Associated Worker
Income

Over 41,000
Employers

Baltimore County, MD

With over 4,500 Professional & Business Services employers, Baltimore County employs more than 13% of the State's workers in this industry and is projected to experience growth through 2024.



Data Source: Maryland's Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)



OCCUPATIONAL PROFILE

Professional & Business Services

The Professional & Business Services industry cluster is made up of corporate headquarters, non-information technology professional services, and office and business services. Baltimore County is a major location for corporate headquarters and corporate branch office operations for business and professional services companies. Employment growth for this cluster (2001-2015) outpaced overall employment growth in the County and is expected to experience strong growth through 2024.

The Professional & Business Services industry relies heavily upon occupations related to:



Business Management



Architecture, Engineering, Science & Technology



Professional Sales & Office / Business Services

Professional & Business Services Support Service Occupations include:

Administrative & Clerical

Office & Administrative Services

Operations

PROFESSIONAL & BUSINESS SERVICES CAREER CLUSTERS

This section provides examples of the entry-, middle-, and highly-skilled Professional & Business Services and related occupations in highest demand among employers in Baltimore County. The data are categorized by “Professional & Business Services Career Clusters” – groups of occupations in the same field of work that require similar skills – which can be used to help focus educational plans towards obtaining the necessary knowledge, competencies, and training for success in one of many Professional & Business Services career options.

Professional & Business Services Occupations At-A-Glance

- Baltimore County is specialized in three of the ten industries that make up the cluster: Architectural, Engineering, and Related Services has a concentration of employment 53% above the national average. Other occupational clusters include: Office Administrative Services, Accounting, Tax Preparation, Bookkeeping, and Payroll Services.
- Employment is concentrated in a mix of entry-, middle-, and high-skilled occupations, the majority of which are Office and Administrative Support occupations. Occupational demand favors higher skilled occupations, where employment grew by 50% since 2001 and is projected to grow by 16 percent through 2024.

Professional & Business Services

- The changing skills profile of this cluster is a result of changes in technology and organizational structure, with technology and automation replacing lesser skilled workers.
- The leading occupations within the cluster are led by highly-skilled Accountants and Auditors. The leading entry- and middle-skilled occupations are highly concentrated in Customer Service Representatives and Secretaries and Administrative Assistants. Some occupations include:

Business Management & Administration/Operations

Business Operations Specialists, All Other
Managers, All Other
General & Operations Managers

Architecture, Engineering, Science & Technology

Civil Engineers
Cost Estimators
Mechanical Engineers

Professional Sales & Office/Business Services

Accountants & Auditors
Bookkeeping, Accounting & Auditing Clerks
Customer Service Representatives

Support Service Occupations: Administrative & Clerical, Office Support, Sales & Business Services

Administrative & Clerical Support occupations are foundational to this industry, with a mix of entry- and middle- skilled occupations. The Professional & Business Services industry also requires workers with a range of skills for Business Management & Administration, Sales and related professional service occupations:

Entry - Middle-Skilled

Secretaries and Administrative Assistants, Except Legal, Medical, & Executive
Office Clerks, General
Customer Service Representatives
Bookkeeping, Accounting & Auditing Clerks
Office & Administrative Support Workers, All Other

Middle - High-Skilled

Business Operations Specialists, All Other
Information Technology Support Workers, All Other
Computer-User Support Specialist
Payroll & Timekeeping Clerks
Sales Representatives, Services, All Other

This cluster encompasses occupations across all of Baltimore County's priority industries; the profile highlights primarily a few of the key entry- and middle-skilled support service occupations. For a complete list of any of the in-demand occupations within these clusters, reference the Toolkit's Industry & Occupational Profile specific to the industry or occupation of interest.



SPOTLIGHT JOBS

Professional & Business Services

Baltimore County's workforce, education and training systems are well aligned with the occupational needs of the region's Professional & Business Services industry. The County boasts a highly-educated workforce that is employed in occupations critical to efficient business management and operations, including the technical and professional services required to keep them competitive. Here are a few middle- and high-skilled occupations that...

SUPPORT BUSINESS OPERATIONS THROUGHOUT THE COUNTY!

HIGH-DEMAND MIDDLE-AND HIGH-SKILLED OCCUPATIONS

Business Management & Administration / Operations - Professional Sales & Office/Business Services

Education & Skills:

Upon Entry: HS Diploma or Equivalent / Post-Secondary Certificate / Associates / Bachelors / Post-Baccalaureate Certificate / Masters / Professional Degree

Advancement: Industry-recognized credentials, Short- to Moderate-Term OJT, Work Experience

Business Management & Administration/Operations

Business Operations Specialists, All Other (13-1199)
2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Managers, All Other (11-9199)
2016 Est. Emp.: 1,300 / Mean Wage: \$54.47

Financial Managers (11-3031)
2016 Est. Emp.: 1,800 / Mean Wage: \$42.32

Occupational Titles and 2-Digit SOC Sub-Codes:

- .01 - Treasurers & Controllers
- .02 - Financial Managers, Branch or Department

Sales Managers (11-2022)
2016 Est. Emp.: 840 / Mean Wage: \$70.45

Administrative Services Managers (11-3011)
2016 Est. Emp.: 770 / Mean Wage: \$59.96

Professional Sales & Office/Business Services

Customer Service Representatives (43-4051)
2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Sales Representatives, Services, All Other(41-3099)
2016 Est. Emp.: 5,380 / Mean Wage: \$28.71

Accountants & Auditors (13-2011)
2016 Est. Emp.: 4,770 / Mean Wage: \$39.23

Bookkeeping, Accounting & Auditing Clerks (43-3031)
2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Insurance Sales Agents (41-3021)
2016 Est. Emp.: 1,800 / Mean Wage: \$31.62

Payroll & Timekeeping Clerks(43-3051)
2016 Est. Emp.: 500 / Mean Wage: \$20.77

Architecture, Engineering, Science & Technology

Education & Skills:

Upon Entry: Associates / Post-Secondary Certificate / Bachelors / Post-Baccalaureate Certificate / Masters / Professional Degree
Advancement: Industry-recognized credentials, Short- to Moderate-Term OJT, Work Experience

Architecture & Engineering

Civil Engineers (17-2051)
2016 Est. Emp.: 1,680 / Mean Wage: \$41.34

Cost Estimators (13-1051)
2016 Est. Emp.: 790 / Mean Wage: \$30.73

Electrical Engineers (17-2071)
2016 Est. Emp.: 660 / Mean Wage: \$43.70

Science & Technology

Chemists (19-2031)
2016 Est. Emp.: 190 / Mean Wage: \$34.20

Actuaries (15-2011)
2016 Est. Emp.: 160 / Mean Wage: \$54.16

Social Scientists & Related Workers, All Other (19-3099)
2016 Est. Emp.: 160 / Mean Wage: \$54.16

Support Service Occupations

Support Service Occupations (SSO's) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. Key SSO's to the Professional & Business Services industry include **Administrative & Clerical Support, Business Management & Administration, and Professional Sales & Service** positions. Office and Administrative Support occupations account for **11% of employment**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

Secretaries & Administrative Assistants, Except Legal, Medical & Executive (43-6014)
2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061)
2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

First-Line Supervisors of Office & Administrative Support Workers (43-1011)
2016 Est. Emp.: 5,350 / Mean Wage: \$29.50

Computer User Support Specialists (15-1151)
2016 Est. Emp.: 1,090 / Mean Wage: \$25.53

Executive Secretaries & Executive Administrative Assistants (43-6011)
2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Office & Administrative Support Workers, All Other (43-9199)
2016 Est. Emp.: 520 / Mean Wage: \$19.23



IN-DEMAND OCCUPATIONS

Professional & Business Services

Employment in the Professional & Business Services cluster is concentrated in a mix of high- and entry-skilled occupations. The greatest demand in this cluster is Office and Administrative Support occupations, which includes a mix of middle- and entry-skill jobs. Employment growth over the past decade has occurred primarily in high-skilled occupations, which is projected to increase most rapidly through 2024.

Business Management & Administration / Operations

- Lawyers (23-1011)**
2016 Est. Emp.: 1,910 / Mean Wage: \$47.63
- Business Operations Specialists, All Other (13-1199)**
2016 Est. Emp.: 1,780 / Mean Wage: \$40.69
- Paralegals & Legal Assistants (23-2011)**
2016 Est. Emp.: 1,430 / Mean Wage: \$24.38
- Managers, All Other (11-9199)**
2016 Est. Emp.: 1,300 / Mean Wage: \$54.47
- Computer & Information Systems Managers (11-3021)**
2016 Est. Emp.: 1,100 / Mean Wage: \$67.36
- Medical & Health Services Managers (11-9111)**
2016 Est. Emp.: 1,050 / Mean Wage: \$52.05
- Construction Managers (11-9021)**
2016 Est. Emp.: 1,000 / Mean Wage: \$50.31
- Sales Managers (11-2022)**
2016 Est. Emp.: 840 / Mean Wage: \$70.45
- General & Operations Managers (11-1021)***
2016 Est. Emp.: 800 / Mean Wage: \$15.18
- Administrative Services Managers (11-3011)**
2016 Est. Emp.: 770 / Mean Wage: \$59.96
- Title Examiners, Abstractors & Searchers 23-2093)**
2016 Est. Emp.: 500 / Mean Wage: \$19.46
- Property, Real Estate & Community Association Managers (11-9141)**
2016 Est. Emp.: 450 / Mean Wage: \$46.50
- Marketing Managers (11-2021)**
2016 Est. Emp.: 430 / Mean Wage: \$66.78
- Food Service Managers (11-9051)**
2016 Est. Emp.: 390 / Mean Wage: \$33.05
- Social & Community Service Managers (11-9151)**
2016 Est. Emp.: 320 / Mean Wage: \$36.63
- Legal Support Workers, All Other (23-2099)**
2016 Est. Emp.: 240 / Mean Wage: \$25.89
- Appraisers & Assessors of Real Estate (13-2021)**
2016 Est. Emp.: 240 / Mean Wage: \$26.47
- Purchasing Managers (11-3061)**
2016 Est. Emp.: 200 / Mean Wage: \$63.29
- Budget Analysts (13-2031)**
2016 Est. Emp.: 180 / Mean Wage: \$38.99
- Chief Executives (11-1011)**
2016 Est. Emp.: 180 / Mean Wage: \$88.32
- Credit Analysts (13-2041)**
2016 Est. Emp.: 160 / Mean Wage: \$33.63
- Public Relations & Fundraising Managers (11-2031)**
2016 Est. Emp.: 130 / Mean Wage: \$54.69

Support Service Occupations: Administrative & Clerical

See other in-demand Administrative & Clerical occupations across all of the targeted industry clusters.

- Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)**
2016 Est. Emp.: 8,380 / Mean Wage: \$18.68
- Office Clerks, General (43-9061) ***
2016 Est. Emp.: 5,840 / Mean Wage: \$15.65
- First-Line Supervisors of Office & Administrative Support Workers (43-1011)**
2016 Est. Emp.: 5,350 / Mean Wage: \$29.50
- Information Technology Support Workers, All Other (31-9099)**
2016 Est. Emp.: 400 / Mean Wage: \$20.36
- Executive Secretaries & Executive Administrative Assistants (43-6011)**
2016 Est. Emp.: 1,010 / Mean Wage: \$30.87
- Office & Administrative Support Workers, All Other (43-9199)**
2016 Est. Emp.: 520 / Mean Wage: \$19.23

Professional Sales & Office / Business Services

- Finance**
- Accountants & Auditors (13-2011)**
2016 Est. Emp.: 4,770 / Mean Wage: \$39.23
- Bookkeeping, Accounting & Auditing Clerks (11-3031)**
2016 Est. Emp.: 1,800 / Mean Wage: \$42.32
- Financial Managers (11-3031)**
2016 Est. Emp.: 1,800 / Mean Wage: \$42.32
- Personal Financial Advisors (13-2052)**
2016 Est. Emp.: 1,700 / Mean Wage: \$49.39
- Financial Analysts (13-2051)**
2016 Est. Emp.: 1,230 / Mean Wage: \$43.71
- Securities, Commodities & Financial Services Sales Agents (13-3031)**
2016 Est. Emp.: 840 / Mean Wage: \$46.15
- Tellers (43-3071)***
2016 Est. Emp.: 800 / Mean Wage: \$15.18
- Loan Officers (13-2072)**
2016 Est. Emp.: 660 / Mean Wage: \$39.20
- Insurance Underwriters (13-2053)**
2016 Est. Emp.: 580 / Mean Wage: \$40.48
- Financial Specialists, All Other (13-2099)**
2016 Est. Emp.: 470 / Mean Wage: \$32.94
- Loan Interviewers & Clerks (43-4131)**
2016 Est. Emp.: 350 / Mean Wage: \$18.36
- Credit Authorizers, Checkers & Clerks (43-4041)**
2016 Est. Emp.: 310 / Mean Wage: \$49.79
- Credit Counselors (13-2071)**
2016 Est. Emp.: 130 / Mean Wage: \$19.83
- Financial Clerks, All Other (43-3099)**
2016 Est. Emp.: 100 / Mean Wage: \$23.03
- Tax Preparers (13-2061)**
2016 Est. Emp.: No BCO data / Mean Wage: \$23.44
- Insurance**
- Insurance Sales Agents (41-3021)**
2016 Est. Emp.: 1,800 / Mean Wage: \$31.62
- Insurance Claims & Processing Clerks (43-9041)**
2016 Est. Emp.: 780 / Mean Wage: \$21.07
- Insurance Underwriters (13-2053)**
2016 Est. Emp.: 580 / Mean Wage: \$40.48
- Advertising, Sales & Marketing**
- Customer Service Representatives (43-4051)**
2016 Est. Emp.: 8,350 / Mean Wage: \$17.63
- Sales Representatives, Services, All Other (41-3099)**
2016 Est. Emp.: 5,380 / Mean Wage: \$28.71
- Marketing Research Analysts & Marketing Specialists (13-1161)**
2016 Est. Emp.: 1,540 / Mean Wage: \$29.64
- Sales & Related Workers, All Other (41-9099)**
2016 Est. Emp.: 450 / Mean Wage: \$21.01
- Public Relations Specialists (27-3031)**
2016 Est. Emp.: 300 / Mean Wage: \$32.53
- Meeting, Convention & Event Planners (27-3031)**
2016 Est. Emp.: 230 / Mean Wage: \$23.07
- Human Resources**
- Payroll and Timekeeping Clerks (43-3051)**
2016 Est. Emp.: 500 / Mean Wage: \$20.77
- Compensation, Benefits & Job Analysis Specialists (13-1141)**
2016 Est. Emp.: 280 / Mean Wage: \$32.19
- Human Resources Managers (11-3121)**
2016 Est. Emp.: 300 / Mean Wage: \$63.96

Architecture, Engineering, Science & Technology

- Architecture & Engineering**
- Civil Engineers (17-2051)**
2016 Est. Emp.: 1,680 / Mean Wage: \$41.34
- Cost Estimators (13-1051)**
2016 Est. Emp.: 790 / Mean Wage: \$30.73
- Mechanical Engineers (17-2141)**
2016 Est. Emp.: 680 / Mean Wage: \$37.98
- Electrical Engineers (17-2071)**
2016 Est. Emp.: 660 / Mean Wage: \$43.70
- Architectural & Engineering Managers (11-9041)**
2016 Est. Emp.: 600 / Mean Wage: \$67.23
- Civil Engineering Technicians (17-3022)**
2016 Est. Emp.: 360 / Mean Wage: \$23.30
- Interior Designers (27-1025)**
2016 Est. Emp.: 340 / Mean Wage: \$23.30
- Architects, Except Landscape & Naval (17-1011)**
2016 Est. Emp.: 270 / Mean Wage: \$43.97
- Industrial Engineers (17-2141)**
2016 Est. Emp.: 250 / Mean Wage: \$44.49
- Architectural & Civil Drafters (17-3011)**
2016 Est. Emp.: 230 / Mean Wage: \$30.31
- Surveyors (17-1022)**
2016 Est. Emp.: 160 / Mean Wage: \$29.09
- Aerospace Engineers (17-2011)**
2016 Est. Emp.: 120 / Mean Wage: \$70.29
- Surveying & Mapping Technicians (17-3031)**
2016 Est. Emp.: 110 / Mean Wage: \$23.26
- Electronics Engineers, Except Computer (17-2072)**
2016 Est. Emp.: 80 / Mean Wage: \$41.06
- Landscape Architects (17-1012)**
2016 Est. Emp.: 70 / Mean Wage: \$40.30
- Science & Technology**
- Medical Scientists, Except Epidemiologists (19-1042)**
2016 Est. Emp.: 200 / Mean Wage: \$33.60
- Chemists (19-2031)**
2016 Est. Emp.: 190 / Mean Wage: \$34.20
- Actuaries (15-2011)**
2016 Est. Emp.: 160 / Mean Wage: \$54.16
- Social Scientists & Related Workers, All Other (19-3099)**
2016 Est. Emp.: 160 / Mean Wage: \$54.16
- Life, Physical, and Social Science Technicians, All Other (19-4099)**
2016 Est. Emp.: 100 / Mean Wage: \$25.64
- Occupational Titles & SOC Sub-Codes:**
.01 - Quality Control Analysts
.02 - Precision Agriculture Technicians
.03 - Remote Sensing Technicians
- Urban & Regional Planners (19-3051)**
2016 Est. Emp.: 70 / Mean Wage: \$32.79
- Environmental Science & Protection Technicians, Including Health (19-4091)**
2016 Est. Emp.: 50 / Mean Wage: \$29.98
- Agricultural & Food Science Technicians (19-4011)**
2016 Est. Emp.: 40 / Mean Wage: \$22.33

Professional & Business Services Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). High-demand occupations with wages below the locally determined minimum mean wage are denoted with an asterisk (*).





Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Information Technology



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

INDUSTRY PROFILE

Information Technology

The Information Technology industry is the fastest growing of Baltimore County's nine priority industries, with overall employment increasing by 46 percent between 2001 and 2015 and projected to increase by 19 percent through 2024.

Regional Impacts

15,714
Jobs

\$1.3 Billion
Associated Worker
Income

Over 800
Employers



Statewide Impacts

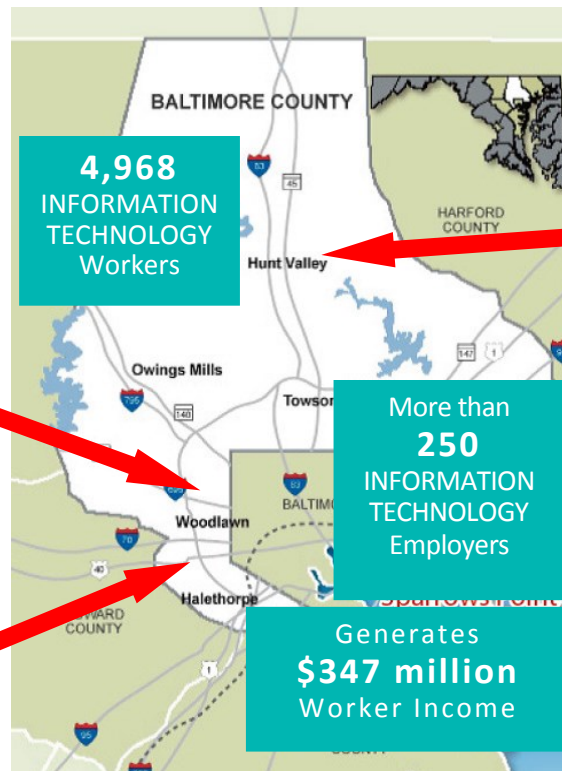
37,695
Jobs

\$3.2 Billion
Associated Worker
Income

Over 2,700
Employers

Baltimore County, MD

With nearly 5,000 IT employees, Baltimore County employs more than 13% of the State's workers in this industry.



Lockheed Martin— a global security and aerospace company - employs over **1,500 people** in its Windsor Mills location.

bwtech@UMBC is a 71-acre information technology incubator with over **130 cybersecurity start-up companies** as tenants.

Hunt Valley is a nationally recognized hub for digital gaming and entertainment companies.

Companies in this IT hub include:

- Firaxis Games
- BreakAway Games
- Big Huge Games
- ZeniMax Online Studios

Data Source: Maryland's Quarterly Census of Employment and Wages (2016)
Note: Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)

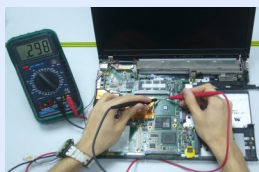


OCCUPATIONAL PROFILE

Information Technology

The Information Technology industry is the most highly skilled of Baltimore County's nine target industry clusters, with 72% of all jobs in this cluster classified as high-skilled occupations. While employment growth has occurred across the cluster, the most rapid growth occurred in middle-skilled jobs over the 2001-15 period, and they are projected to increase most rapidly through 2024.

The Information Technology industry relies heavily upon occupations related to:



Information & Support Services



Network Systems



Programming & Software Development

Information Technology Support Service Occupations include:

Administrative & Clerical

Technical

Business Management & Administration

Professional Sales & Service

INFORMATION TECHNOLOGY CAREER CLUSTERS

This section provides examples of the entry-, middle-, and highly-skilled Information Technology and related occupations in highest demand among employers in Baltimore County. The data are categorized by "Information Technology Career Clusters" – groups of occupations in the same field of work that require similar skills – which can be used to help focus educational plans towards obtaining the necessary knowledge, competencies, and training for success in one of many Information Technology career options.

Information Technology Occupations At-A-Glance

- 72% of all jobs in this cluster can be classified as high-skilled jobs, with 59% of employment in the computer and mathematical occupational groupings: Information & Support Services; Network Systems; and, Programming & Software Development.
- Major areas of occupational employment include, Office and Administrative Support occupations, Management, and Business and Financial Operations occupations.

Information Technology

- The occupations in greatest demand within this cluster are led by high-skilled jobs: Software Developers, Applications; Software Developers, Systems Software; and Computer Systems Analysts. The largest middle-skilled occupation is Computer User Support Specialists.
- Outside of these three industry specific occupational groupings, employment is spread across a wide variety of career options ranging from middle-skilled Office & Administrative Support occupations to higher-skilled Business Management & Administration and Professional Sales & Service occupations.
- The Information Technology cluster's employment of middle-skilled workers increased significantly between 2001 and 2015, and those job opportunities are projected to increase most rapidly through 2024. Some occupations include:

Information & Support Services

Computer & Information Systems Managers
Computer User Support Specialists
Information Technology Support Workers, All Other

Network Systems

Network & Computer Systems Administrators
Computer Network Support Specialists
Information Security Analysts

Programming & Software Development

Software Developers, Applications
Computer Systems Analysts
Software Developers, Systems Software

Support Service Occupations: Technical, Administrative & Clerical, Management, Sales & Service

Administrative & Clerical Support occupations are foundational to this industry, with a mix of middle- and entry-skilled occupations. The Information Technology industry also needs workers with a range of skills for Business Management & Administration and other related professional and technical occupations:

Entry - Middle-Skilled

Secretaries and Administrative Assistants, Except Legal, Medical, & Executive
Office Clerks, General
Bookkeeping, Accounting & Auditing Clerks
Office & Administrative Support Workers, All Other

Middle - High-Skilled

Business Operations Specialists, All Other
Web Developers
Customer Service Representatives
Sales Representatives, Services, All Other

This cluster encompasses occupations across all of Baltimore County's priority industries. For a complete list of any of the in-demand occupations within these clusters, reference the Profile specific to the industry or occupation of interest.



SPOTLIGHT JOBS

Information Technology

Baltimore County's workforce, education and training systems are well aligned with the occupational needs of the region's Information Technology industry. More than three-quarters of this industry's employment is in Computer and Mathematical, Business and Financial Operations, and Office and Administrative Support occupations. With an extensive network of educational institutions offering expanded, non-traditional certificate training programs, the County is well-poised to grow a highly-skilled-talent pipeline to meet future demand. Here are a few middle- and high-skilled occupations that...

KEEP US ON THE CUTTING EDGE OF TECHNOLOGY!

HIGH-DEMAND MIDDLE-AND HIGH-SKILLED OCCUPATIONS

Information & Support Services

Education & Skills:
 Upon Entry: HS Diploma or equivalent / Some College, No Degree / Associates / Bachelors / Post-Secondary Certificate / Vocational Training / Professional Degree
 Advancement: Industry-recognized credentials from vocational training, work experience

<p>Computer Occupations, All Other (15-1199) 2016 Est. Emp.: 3,990 / Mean Wage: \$49.80</p> <p><u>Occupational Titles and 2-Digit SOC Sub-Codes:</u></p> <ul style="list-style-type: none"> .01 - Software Quality Assurance Engineers & Testers .02 - Computer Systems Engineers/Architects .03 - Web Administrators .04 - Geospatial Information Scientists & Technologists .05 - Geographic Information Systems Technicians .06 - Database Architects .07 - Data Warehousing Specialists .08 - Business Intelligence Analysts .09 - Information Technology Project Managers .10 - Search Marketing Strategists .11 - Video Game Designers .12 - Document Management Specialists 	<p>Computer & Information Systems Managers (11-3021) 2016 Est. Emp.: 1,100 / Mean Wage: \$67.36</p> <p>Computer User Support Specialists (15-1151) 2016 Est. Emp.: 1,090 / Mean Wage: \$25.53</p> <p>Information Technology Support Workers, All Other (31-9099) 2016 Est. Emp.: 400 / Mean Wage: \$20.36</p>
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Network Systems / Programming & Software Development

Education & Skills:
 Upon Entry: HS Diploma or equivalent / Some College, No Degree / Associates / Bachelors / Post-Secondary Certificate / Vocational Training / Professional Degree
 Advancement: Industry-recognized credentials from vocational training, work experience

Network Systems		
<p>Network & Computer Systems Administrators (15-1142) 2016 Est. Emp.: 1,800 / Mean Wage: \$50.24</p>	<p>Computer Network Support Specialists (15-1152) 2016 Est. Emp.: 1,020 / Mean Wage: \$36.37</p>	<p>Information Security Analysts (15-1122) 2016 Est. Emp.: 310 / Mean Wage: \$49.79</p>
Programming & Software Development		
<p>Software Developers, Applications (15-1132) 2016 Est. Emp.: 2,400 / Mean Wage: \$47.93</p>	<p>Computer Systems Analysts (15-1121) 2016 Est. Emp.: 2,100 / Mean Wage: \$42.83</p>	<p>Software Developers, Systems Software (15-1133) 2016 Est. Emp.: 780 / Mean Wage: \$55.45</p>

Support Service Occupations Technical, Administrative, Management, Sales & Service

Support Service Occupations (SSO's) are jobs that can be found across all industry sectors that are critical to the daily operation, administration and management of the business. Key SSO's to the Information Technology industry include **Administrative & Clerical Support, Business Management & Administration, Professional Sales & Service** and **Technical** positions. Office and administrative support occupations account for **11% of employment**, creating entry-points to any of the career clusters listed above, depending upon one's interests, skills and abilities.

Secretaries & Administrative Assistants, Except Legal, Medical & Executive (43-6014)
 2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061)
 2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

Bookkeeping, Accounting & Auditing Clerks (43-3031)
 2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

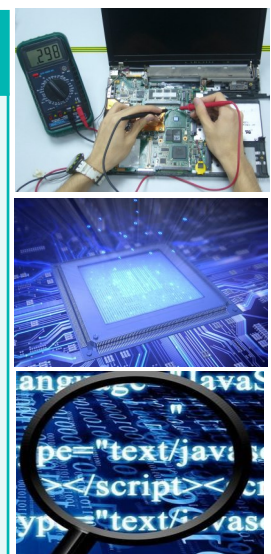
Web Developers (15-1134)
 2016 Est. Emp.: 820 / Mean Wage: \$22.60

Customer Service Representatives (43-4051)
 2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Sales Representatives, Services, All Other (41-3099)
 2016 Est. Emp.: 5,380 / Mean Wage: \$28.71

Business Operations Specialists, All Other (13-1199)
 2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Electrical & Electronics Engineering Technicians (17--3023)
 2016 Est. Emp.: 630 / Mean Wage: \$31.22



While employment growth over the past decade has occurred across the Information Technology cluster, middle-skilled jobs saw the most significant increases and are projected to increase most rapidly through 2024. The demand for middle-skilled job openings may indicate the need for expanded, non-traditional certificate training programs resulting in industry recognized credentials. Career progression requires work experience, post-secondary training and advanced professional and technical skills.

Information Support & Services

Computer Occupations, All Other (15-1199)

2016 Est. Emp.: 3,990 / Mean Wage: \$49.80

Occupational titles and sub-codes:

- .01- Software Quality Assurance Engineers & Testers
- .02- Computer Systems Engineers/Architects
- .03- Web Administrators
- .04- Geospatial Information Scientists & Technologists
- .05- Geographic Information Systems Technicians
- .06- Database Architects
- .07- Data Warehousing Specialists
- .08- Business Intelligence Analysts
- .09- Information Technology Project Managers
- .10- Search Marketing Strategists
- .11- Video Game Designers
- .12- Document Management Specialists

Computer & Information Systems Managers (11-3021)

2016 Est. Emp.: 1,100 / Mean Wage: \$67.36

Computer User Support Specialists (15-1151)

2016 Est. Emp.: 1,090 / Mean Wage: \$25.53

Information Technology Support Workers, All Other (31-9099)

2016 Est. Emp.: 400 / Mean Wage: \$20.36

Computer & Information Research Scientists (15-1111)

2016 Est. Emp.: 10 / Mean Wage: \$37.82

Network Systems

Network & Computer Systems Administrators (15-1142)

2016 Est. Emp.: 1,800 / Mean Wage: \$50.24

Computer Network Support Specialists (15-1152)

2016 Est. Emp.: 1,020 / Mean Wage: \$36.37

Computer Network Architects (15-1143)

2016 Est. Emp.: 640 / Mean Wage: \$58.17

Database Administrators (15-1141)

2016 Est. Emp.: 420 / Mean Wage: \$48.39

Information Security Analysts (15-1122)

2016 Est. Emp.: 310 / Mean Wage: \$49.79

Programming & Software Development

Software Developers, Applications (15-1132)

2016 Est. Emp.: 2,400 / Mean Wage: \$47.93

Computer Systems Analysts (15-1121)

2016 Est. Emp.: 2,100 / Mean Wage: \$42.83

Software Developers, Systems Software (15-1133)

2016 Est. Emp.: 780 / Mean Wage: \$55.45

Computer Programmers (15-1131)

2016 Est. Emp.: 620 / Mean Wage: \$40.24

Technical Occupations

Below are some technical occupations requiring proficient knowledge of specific equipment, programs, and applications, or the support and maintenance of technological infrastructure.

Data Entry Keyers (43-9021)

2016 Est. Emp.: 980 / Mean Wage: \$17.37

Web Developers (15-1134)

2016 Est. Emp.: 820 / Mean Wage: \$22.60

Telecommunications Line Installers & Repairers (49-9052)

2016 Est. Emp.: 610 / Mean Wage: \$27.80

Electrical & Electronics Engineering Technicians (17-3023)

2016 Est. Emp.: 630 / Mean Wage: \$31.22

Graphic Designers (27-1024)

2016 Est. Emp.: 510 / Mean Wage: \$24.74

Telecommunications Equipment Installers & Repairers, Except Line Installers (49-2022)

2016 Est. Emp.: 490 / Mean Wage: \$25.11

Computer, Automated Teller & Office Machine Repairers (49-2011)

2016 Est. Emp.: 430 / Mean Wage: \$19.36

Computer-Controlled Machine Tool Operators, Metal & Plastic (51-4011)

2016 Est. Emp.: 150 / Mean Wage: \$22.26

Desktop Publishers (43-9031)

2016 Est. Emp.: 50 / Mean Wage: \$25.14

Word Processors & Typists (43-9022)

2016 Est. Emp.: No BCO data / Mean Wage: \$18.85

Support Service Occupations: Administrative, Management, Sales & Service

Locally specific data is difficult to estimate for employment numbers for occupations related to Information Technology. This cluster encompasses occupations across all of Baltimore County's priority industries; this profile highlights the key Support Service Occupations in highest demand among Baltimore County employers.

Administrative & Clerical

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014)

2016 Est. Emp.: 8,380 / Mean Wage: \$18.68

Office Clerks, General (43-9061) *

2016 Est. Emp.: 5,840 / Mean Wage: \$15.65

First-Line Supervisors of Office & Administrative Support Workers (43-1011)

2016 Est. Emp.: 5,350 / Mean Wage: \$29.50

Bookkeeping, Accounting & Auditing Clerks (43-3031)

2016 Est. Emp.: 3,870 / Mean Wage: \$21.32

Executive Secretaries & Executive Administrative Assistants (43-6011)

2016 Est. Emp.: 1,010 / Mean Wage: \$30.87

Office & Administrative Support Workers, All Other (43-9199)

2016 Est. Emp.: 520 / Mean Wage: \$19.23

Business Management & Administration

Business Operations Specialists, All Other (13-1199)

2016 Est. Emp.: 1,780 / Mean Wage: \$40.69

Managers, All Other (11-9199)

2016 Est. Emp.: 1,300 / Mean Wage: \$54.47

Sales Managers (11-2022)

2016 Est. Emp.: 840 / Mean Wage: \$70.45

Marketing Managers (11-2021)

2016 Est. Emp.: 430 / Mean Wage: \$66.78

Industrial Production Managers (11-3051)

2016 Est. Emp.: 240 / Mean Wage: \$57.26

(.01—Quality Control Systems Managers)

Professional Sales & Service

Customer Service Representatives (43-4051)

2016 Est. Emp.: 8,350 / Mean Wage: \$17.63

Sales Representatives, Services, All Other (41-3099)

2016 Est. Emp.: 5,380 / Mean Wage: \$28.71

First-Line Supervisors of Retail Sales Workers (41-1011)

2016 Est. Emp.: 4,820 / Mean Wage: \$21.55

First-Line Supervisors of Non-Retail Sales Workers (41-1012)

2016 Est. Emp.: 950 / Mean Wage: \$42.12

Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products (41-4011)

2016 Est. Emp.: 680 / Mean Wage: \$58.20

Sales & Related Workers, All Other (41-9099)

2016 Est. Emp.: 450 / Mean Wage: \$21.01

Information Technology Career Clusters were derived from O*NET Career Clusters and Standard Occupational Classifications (SOC). High-demand occupations with wages below the locally determined minimum mean wage are denoted with an asterisk (*).





Job Connector Toolkit

Move people to in-demand jobs in key industries in Baltimore County, Maryland

Appendix



Baltimore County Executive Don Mohler
and the Baltimore County Council

Department of Economic & Workforce Development
baltimorecountymd.gov/jobconnector

May 2018

Job Connector Toolkit Project Source List

Primary Research and Report Resources:

Jobs of the Future: Trends in Occupational Employment, 2015 – 2024

Consultants: The Jacob France Institute/University of Baltimore and Valbridge Property Advisors

<http://resources.baltimorecountymd.gov/Documents/EconomicDevel/futurejobs.pdf>

- Nine Targeted Industry Clusters
- Trends in occupational employment across targeted industry clusters by degree requirement and skill level
- Market analysis data by 6-digit SOC (Standard Occupational Classification)
- 2015 employment numbers by occupational group
- Median wage data
- Location quotient for Baltimore MSA

Baltimore County Local Workforce Area Plan (2016-2020) - February 15, 2017

<http://resources.baltimorecountymd.gov/Documents/EconomicDevel/localplanmaster.pdf>

Opportunity Collaborative - <http://www.opportunitycollaborative.org>

The Opportunity Collaborative is a coalition of local governments, state agencies and nonprofit organizations in the Baltimore region formed in 2012 to develop a Regional Plan for Sustainable Development. The work of the Collaborative was funded by a Sustainable Regional Planning Grant from the U.S. Department of Housing and Urban Development and is coordinated and staffed by the Baltimore Metropolitan Council (BMC). Research and reports prepared by the Opportunity Collaborative and RDA Global, Inc. include:

[Baltimore Regional Plan for Sustainable Development, June 2015](#)

[Strong Workforce, Strong Economy - Baltimore Regional Workforce Development Plan, March 2015](#)

[Career Pathways in the Baltimore Region: Transportation & Logistics, September 2014](#)

[Barriers to Employment Opportunities in the Baltimore Region, June 2014](#)

[Baltimore Regional Talent Development Pipeline Study, October 2013](#)

COMMON GROUND: A Vision for Redeveloping Sparrows Point and Leveraging the Industrial Assets of East Baltimore County Sparrows Point Partnership - First Year Report, May 2013

Eastern Baltimore County Emerges as a Major Hub, Again - October 2016

Consultant - Sage Policy Group

<http://resources.baltimorecountymd.gov/Documents/EconomicDevel/finalsagereport.pdf>

STEM: Middle-Skill Career Pathways in the Baltimore Region

Greater Baltimore Committee and Associated Black Charities

<https://gbc.org/wp-content/uploads/2016/01/Mid-Skilled-STEM-Presentation2.pdf>

ALICE (Asset Limited, Income Constrained, Employed): A Study of Financial Hardship in Central Maryland

United Way of Central Maryland

<http://www.uwcm.org/main/alice/>

BROOKINGS: The Hidden STEM Economy

Metropolitan Policy Program at Brookings, Jonathan Rothwell, June 2013

<https://www.brookings.edu/research/the-hidden-stem-economy/>

BROOKINGS: Meet the out-of-work / Who are the out-of-work in Baltimore County?

Metropolitan Policy Program at Brookings, Martha Ross, Natalie Holmes, June 2017

<https://www.brookings.edu/research/meet-the-out-of-work/>

McKinsey & Company/McKinsey Global Institute

<https://www.mckinsey.com/global-themes/future-of-organizations-and-work>

- *How will automation affect jobs, skills, and wages?* - March 2018
- *Retraining and reskilling workers in the age of automation* - January 2018
- *What is the future of work?* - December 2017
- *What the future of work will mean for jobs, skills and wages* - November 2017



Job Connector Toolkit Project Source List (continued)

Primary Data Sources:

Department of Labor, Licensing and Regulation (DLLR) – Office of Workforce Information & Performance

<http://www.dllr.state.md.us/lmi/>

[Maryland Industry and Occupational Growth Analysis](#)

[Local Area Unemployment Statistics \(LAUS\)](#)

[Quarterly Census of Employment and Wages \(QCEW\)](#) - Regional data is the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA)

[Maryland Current Employment Statistics](#)

[Maryland Occupational Employment and Wages](#)

[Baltimore County Occupational Wage Estimates](#)

- Mean and median wages
- Top areas in Maryland for occupations by best pay and highest employment

[Workforce region occupational projections \(2014 - 2024\)](#)

[Major Employer Lists - Baltimore County, MD](#)

[WIOA Eligible Training Provider List](#)

Baltimore County Department of Economic & Workforce Development

[Meet Baltimore County](#) - Local data and information on business communities, top employers and labor market statistics

EMSI/Burning Glass - <http://www.economicmodeling.com/workforce-development/>

- Occupational data and projections not captured in the JOTF study
- Local and regional workforce data projections

O*NET Online - <https://www.onetonline.org/>

- Resource Center: <https://www.onetcenter.org/>
- Code Connector: <https://www.onetcodeconnector.org/>
- Career Clusters: <https://www.onetonline.org/find/career>
 - Occupationally specific information
 - Occupational groups by O*NET Standard Occupational Classification (SOC)
 - Occupational outlook
 - Occupational career clusters
 - Sample job titles
 - Labor market information
 - Industry outlook
 - Worker characteristics - skill and educational requirements, certifications

Career OneStop <https://www.careeronestop.org/>

Competency Model Clearinghouse - <https://www.careeronestop.org/competencymodel/>

- Industry specific tools and templates to create career lattices and competency models with portable stackable credentials

United States Department of Labor Employment & Training Administration—Workforce GPS

<https://www.workforcegps.org/> - a repository of information on tools, resources and national best practices for workforce practitioners

[Workforce System Strategies](#) - Evidence-Based and Emerging Practices to Support Informed Decisions

[Building Career Pathways Systems for Education, Training, and Employment](#)

[Career Pathways Toolkit - An Enhanced Guide and Workbook for System Development](#)

[Sector Strategies](#)

[Sector Ready Workforce and Sector Ready Toolkit 1.0](#) - Workforce Investment Board of Southwest Missouri

[Innovation and Opportunity Network: Implementing the Workforce Innovation and Opportunity Act](#)



About the Authors:

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Jen Horton currently serves as the Policy and Planning Manager. Before this position, she served as the Community and Economic Development Program Manager at the National Association of Counties (NACo) in Washington D.C. She also has experience working on the state and local level with workforce development, economic diversification, smart growth, and sustainable communities. She earned her Masters of Science and Masters of Urban Planning from University of Michigan.

Carol Brooks currently serves as the Senior Workforce Development Analyst. She has an extensive background serving the agency in innumerable workforce, business development, and economic development capacities. She has spearheaded several of the Agency's sector-based strategies such as providing support and guidance for the Healthcare Careers Committee. Ms. Brooks has been an active member of the Baltimore Metropolitan Council's Opportunity Collaborative partnership and Fellows Program, contributing to the Regional Workforce Plan and the 25-Year Plan for Regional Sustainability. She earned her Master of Arts in Cultural Sustainability from Goucher College. She is a member of Leadership Baltimore County, as well as an Annie E. Casey Foundation Fellow in their Leadership Development Program for Human Services Professionals through the University of Maryland School of Social Work.

This toolkit was researched and produced by the Baltimore County Department of Economic and Workforce Development ("DEWD"). Data shown are based on commissioned studies and recent County, Metropolitan Statistical Area (MSA) and State datasets. No official endorsement by DEWD of any product, commodity, service or enterprise mentioned in this publication is intended or should be inferred. DEWD makes no assurances with respect to such information, including any information on linked sites, as to the accuracy, continued availability, or ownership of information. Internal use by an organization and personal use by an individual for non-commercial purposes is permissible; authorization to reproduce it in whole or in part is granted.

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