

8.3 No remedy conferred upon or reserved to the Authority is intended to be exclusive and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Agreement or now or hereafter existing at law or in equity. No delay or omission to exercise any right, remedy or power accruing upon any Event of Default shall impair any such right, remedy or power or shall be construed to be a waiver thereof, but any such right, remedy or power may be exercised from time to time and as often as the Authority may deem expedient.

SECTION 9 OTHER TERMS

9.1 Governing Law. This Agreement shall be governed by, construed, and enforced in accordance with, the laws of the Commonwealth of Massachusetts.

9.2 Venue. Any civil action brought against the Authority by the District, or any person or entity claiming by, through or under it, that arises out of the provisions of this Agreement, shall only be brought in the Superior Court for Suffolk County, Massachusetts. The District, for itself and for any person or entity claiming by, through or under it, hereby waives any defenses that it may have as to the venue to which it has agreed herein, including, but not limited to, any claim that this venue is improper or that the forum is inconvenient. The District for itself and for any person or entity claiming by, through or under it, hereby waives all rights, if any, to a jury trial in any such civil action that may arise out of the provisions of this Agreement.

9.3 Indemnification of the Authority by the District. To the fullest extent permitted by law, the District shall indemnify and hold harmless the Authority and its officers, agents and employees from and against any and all claims, actions, damages, liabilities, injuries, costs, fees, expenses, or losses, including, without limitation, reasonable attorney's fees and costs of investigation and litigation, whatsoever which may be incurred by, or for which liability may be asserted against, the Authority or any of its officers, agents or employees arising out of any activities undertaken by, for, or on behalf of the District in the execution or implementation of this Agreement or with respect to the Feasibility Study, including, but not limited to, the performance of any contract or obligation directly or indirectly related to the Feasibility Study. Such obligation shall not be construed to negate or abridge any other obligation of indemnification running to the Authority which would otherwise exist.

9.4 Members, Employees Not Liable. No member or employee of the Authority shall be charged or held personally or contractually liable by or to the District under any term or provision of this Agreement or because of any breach thereof or because of its execution or attempted execution.

9.5 Assignability. The District shall not assign any interest, in whole or in part, in this Agreement and shall not transfer any interest in the same, whether by assignment or novation, without the prior written approval of the Authority.

9.6 Payment Not A Waiver.

The Authority's payment(s) to the District under this Agreement or its review, approval or acceptance of any actions by the District under this Agreement shall not operate as a waiver of any rights under this Agreement and the District shall remain liable to the Authority for all damages incurred by the Authority as a result of the District's failure to perform in accordance with the terms and conditions of this Agreement.

The rights and remedies of the Authority provided for under this Agreement are in addition to any other rights or remedies provided by law. The Authority may assert a right to recover damages by any appropriate means, including, but not limited to, set-off, suit, withholding, recoupment, or counterclaim either during or after performance of this Agreement.

9.7 Notices. Any notices required or permitted to be given by either of the Parties hereunder shall be given in writing and shall be delivered to the addressee (a) in-hand (b) by certified mail, postage prepaid, return receipt requested; (c) by facsimile; or (d) by a commercial overnight courier that guarantees next day delivery and provides a receipt, and such notices shall be addressed as follows:

If to the Authority:

Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109
Attention: Director of Capital Planning
Facsimile: (617) 720-8460

If to the District:

City of Fall River
One Government Center, Room 619
Fall River, MA 02722
Attention: Mayor, City of Fall River
Facsimile: (508) 324-2626

or to such other address or addressee as the District and the Authority may from time to time specify in writing. Any notice shall be effective only upon receipt, which for any notice given by facsimile shall mean notice that has been received by the party to whom it is sent as evidenced by a confirmation slip that bears the time and date of receipt.

9.8 Severability. If any provisions of this Agreement shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such provision shall not affect any of the remaining provisions of this Agreement, and this Agreement shall be construed and enforced as if such invalid or unenforceable provision had not been contained herein.

9.9 Counterparts. This Agreement may be executed in one or more counterparts, any of which shall be regarded for all purposes as an original and all of which constitute but one and the same instrument. Each party agrees that it will execute any and all documents or other

instruments, and take such other actions as may be necessary to give effect to the terms of this Agreement.

9.10 No Waiver. No waiver by either party of any term or conditions of this Agreement shall be deemed or construed as a waiver of any other terms or conditions, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach, whether of the same or of a different section, subsection, paragraph, clause, phrase, or other provision of this Agreement.


9.11 Integration. This Agreement merges and supersedes all prior negotiations, representations, and agreements between the Parties hereto relating to the Feasibility Study and constitutes the entire agreement between the Parties hereto with respect to the Feasibility Study and the Authority's funding of a portion of the eligible, approved costs of the Feasibility Study.

9.12 Amendments. This Feasibility Study Agreement may be amended only through a written amendment signed by duly authorized representatives of the District and the Authority.

IN WITNESS WHEREOF, the Parties have executed this Agreement on this 19th day of November, 2015.

MASSACHUSETTS SCHOOL BUILDING AUTHORITY

By,



John K. McCarthy
Executive Director

CITY OF FALL RIVER

By,



NAME (type or print)

TITLE (type or print)

EXHIBIT A

FEASIBILITY STUDY BUDGET

**City of Fall River
B.M.C. Durfee High School**

The total Budget for the Feasibility Study conducted pursuant to this Agreement, which is attached hereto and incorporated by reference herein, shall be no more than \$1,000,000 based upon the following estimates:

Owner's Project Manager:	\$ 280,000.00
Designer:	\$ 570,000.00
Environmental and Site Testing:	\$ 120,000.00
Other	\$ 30,000.00

EXHIBIT B

SCOPE OF THE FEASIBILITY STUDY

City of Fall River B.M.C. Durfee High School

The Scope of the Feasibility Study conducted under this Agreement, which is attached hereto and incorporated by reference herein, shall consist of the development of a feasibility study/schematic design for evaluation of a renovation of the existing school, a renovation of and addition to the existing school and/or new construction for the B.M.C. Durfee High School (the "Proposed Project") in the City of Fall River (the "District"). Pursuant to the Massachusetts School Building Authority's (the "MSBA") regulations, 963 CMR 2.06, the space allowance for the potential project shall meet all applicable MSBA regulations and guidelines.

The Feasibility Study shall contain all information required by 963 CMR 2.10(8) and any other applicable rules, regulations, policies, guidelines and directives of the MSBA including, but not limited to, a final design program, space summary, budget statement for educational objectives, and a proposed total project budget. The District shall submit to the MSBA the educational space template, based on the agreed upon enrollment of 2,570 students in grades 9-12 at the B.M.C. Durfee High School, for review and acceptance. Upon acceptance of the educational space summary, the District will commence with the evaluation of alternatives. The Schematic Designs that are developed pursuant to this Agreement shall be based upon the final design enrollment which shall be subject to the written approval of the MSBA. The Schematic Design shall include, but not be limited to, the information required by the MSBA's Feasibility Study Guidelines, including, but not limited to, a site development plan, environmental assessment, geotechnical assessment, geotechnical analysis, code analysis, utility analysis, schematic building floor plans, schematic exterior building elevations, narrative building systems descriptions, NE-CHPS scorecard or LEED for Schools checklist, outline specifications, cost estimates, project schedule and proposed total project budget.

In conducting the Feasibility Study and developing the Schematic Design, the District shall, in a sufficient and timely manner as determined by the MSBA, initiate such notification procedures, undertake such review processes, and obtain such determinations and approvals as may be required by 963 CMR 2.03(2)(h) & (i), including, but not limited to, such procedures, reviews, determinations, and approvals as may be required by the Massachusetts Historical Commission (the "MHC") and/or the Massachusetts Environmental Policy Act. At its earliest opportunity, the District shall seek a written determination from MHC as to whether MHC intends to undertake a review of the Proposed Project.

The District shall be responsible for conducting such geotechnical evaluations, site investigations, soils explorations and environmental assessments as are reasonable and necessary to determine whether any significant environmental, geotechnical or other physical conditions exist that may have an impact upon eventual construction on the proposed site. The MSBA may require the District to fully fund certain environmental or geotechnical site testing beyond initial investigatory costs. The MSBA shall bear no responsibility or liability of any sort for the results

of any geotechnical evaluations or site testing, soils explorations, environmental assessments, nor for any site remediation, clean-up, or other site remediation services.

The development of the Schematic Design shall be subject to continuing review by the MSBA in accordance with the provisions of this Agreement, the Schedule of Deliverables contained herein, the MSBA's Feasibility Study guidelines and any other applicable rule, regulation, policy, guideline or directive of the MSBA. The District shall be responsible for submitting to the MSBA all documentation that is required to complete the Feasibility Study and Schematic Design and to support the preparation of a Project Scope and Budget Agreement.

Exhibit C

Calendar Year 2015

Fall River

B.M.C. Durfee High School - 201400950505

<u>MSBA Reimbursement Rate Calculation</u>	
Base Points	31.00
Income Factor	9.47
Property Wealth Factor	22.11
Poverty Factor	17.00
<i>Subtotal: Reimbursement Rate Before Incentives</i>	79.58
<u>Incentive Points</u>	
Maintenance (0-2)	-
CM @ Risk (0-1)	-
Newly Formed Regional District (0-6)	-
Major Reconstruction or Reno/Reuse (0-5)	-
Overlay Zoning 40R & 40S (0-1)	-
Overlay Zoning 100 units or 50% of units for 1, 2 or 3 family structures (0-0.5)	-
Energy Efficiency - "Green Schools" (0 or 2)	-
Model Schools (5)	-
Total Incentive Points	-
MSBA Reimbursement Rate	79.58

Massachusetts School Building Authority

Deborah B. Goldberg
Chairman, State Treasurer

Maureen G. Valente
Chief Executive Officer

John K. McCarthy
Executive Director / Deputy CEO

September 13, 2016

The Honorable Jasiel F. Correia, II
Mayor, City of Fall River
One Government Center, Room 619
Fall River, MA 02722

Re: City of Fall River, B.M.C. Durfee High School, Owner's Project Manager Approval Letter

Dear Mayor Correia:

Pursuant to the provisions of G.L. c. 149, s. 44A ½ and 963 CMR 2.11, the City of Fall River (the "City") is required to procure the services of an Owner's Project Manager (an "OPM") for the B.M.C. Durfee High School project using a qualifications based selection process. As required by 963 CMR 2.11 (3), the City has certified in writing to the Massachusetts School Building Authority (the "MSBA") that it has used a qualifications based selection process that complies with Massachusetts law. Pursuant to 963 CMR 2.11 (2) and G.L. c. 70B, s. 2, the City has requested in writing that the MSBA approve its selection of Leftfield, LLC as the OPM for the B.M.C. Durfee High School project.

The MSBA has reviewed the information submitted by the City in support of its selection of Leftfield, LLC. Based upon the information provided by the City, the MSBA hereby approves its selection of Leftfield, LLC for the B.M.C. Durfee High School project and to the key personnel and consultants identified by Leftfield, LLC in the proposal that was submitted to the City and reviewed by the MSBA, and as presented to the MSBA's Owner's Project Manager Review Panel on September 12, 2016. The MSBA's approval is specific to Leftfield, LLC and to the key personnel identified by Leftfield, LLC in the proposal that was submitted and reviewed by the MSBA. Pursuant to the provisions of 963 CMR 2.11 (4) and the applicable requirements of any agreements between the MSBA and the City, any change in the OPM or its key personnel, as described in the attached organizational chart, must be approved in writing by the City and the MSBA. The MSBA's approval is also based upon the City's representation that the Eligible Applicant for the City has designated Kenneth Pacheco, Fall River Public Schools Chief Operating Officer, as the individual who shall have the authority to act on behalf of the Owner, under its contract with the OPM, and who shall be responsible for day-to-day communication between the Owner and the OPM. Any change in this designation must be approved in writing by the MSBA.

Please note the MSBA's approval of the City's selection is subject to the provisions of 963 CMR 2.11 which, among other things, allows the MSBA to rescind its approval and/or to direct the removal of the OPM under certain circumstances. The MSBA retains the right to rescind its

approval of the City's selection of Leftfield, LLC and to deny and/or recoup reimbursement for expenditures or costs related to the Owner's Project Manager services if Leftfield, LLC does not perform its services to the satisfaction of the MSBA. The MSBA's approval is further subject to the execution of a contract between the City and Leftfield, LLC in a format that is satisfactory to the MSBA, utilizing any standard contracts, forms, and provisions that the MSBA may require, including the completed MSBA System Access Request form which is described below. Please forward a hard copy and an electronic copy of the fully executed contract between the City and Leftfield, LLC to Katie DeCristofaro, Capital Program Manager, at the MSBA by September 27, 2016.

It will be the City's responsibility to monitor the performance of Leftfield, LLC to ensure that they perform their obligations in a satisfactory manner, and to enforce the provisions of its contract with Leftfield, LLC. Among obligations of the OPM that are detailed within the MSBA's standard contract is the requirement for the OPM to submit monthly reports to the MSBA. The City shall verify that the OPM submits its monthly reports on time and in the form and manner determined by the MSBA. OPM Reports shall be submitted to the MSBA by the OPM using the MSBA's online OPM Report System. In order to activate and use this system, the City must complete and submit the attached MSBA System Access Request form. The completed form must be delivered to Katie DeCristofaro, Capital Program Manager, at the MSBA by September 27, 2016.

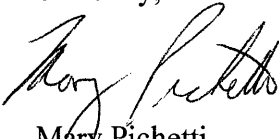
The City must comply with all provisions of law and all conditions imposed by any agreements executed between the MSBA and the City, including, but not limited to, a Feasibility Study Agreement, a Project Scope and Budget Agreement, and a Project Funding Agreement, related to the provision of services by an OPM. The MSBA maintains its right to withhold reimbursement of costs and expenditures associated with OPM services if the City fails to comply with the applicable terms and conditions of its agreements with the MSBA or any administrative directives issued by the MSBA, now in effect or hereafter promulgated. The MSBA's decision to approve the City's selection of an OPM, to approve changes in the OPM, or its key personnel, or decline to exercise any of its rights in relation to the selection or performance of the OPM, shall not be construed as a waiver of the MSBA's right to review, audit, and disallow costs incurred by the City in relation to OPM services, to withhold reimbursement, or to take any other actions available to the MSBA under the law or under its agreements with the City.

The MSBA shall bear no liability of any kind whatsoever for any claims directly or indirectly occurring out of the MSBA's approval of the City's selection of the OPM, the MSBA's approval or non-approval of changes in the OPM or its key personnel, the MSBA's decision to rescind its approval or to direct the removal of an OPM, or any other alleged acts or omissions on the part of the MSBA related to the selection, performance, acts or omissions of the Owner's Project Manager.

If you have any questions, please do not hesitate to contact me or Sarah Blache-Schwartz (Sarah.Blache@MassSchoolBuildings.org) at 617-720-4466.

Page 3
September 13, 2016
Fall River OPM Approval Letter

Sincerely,



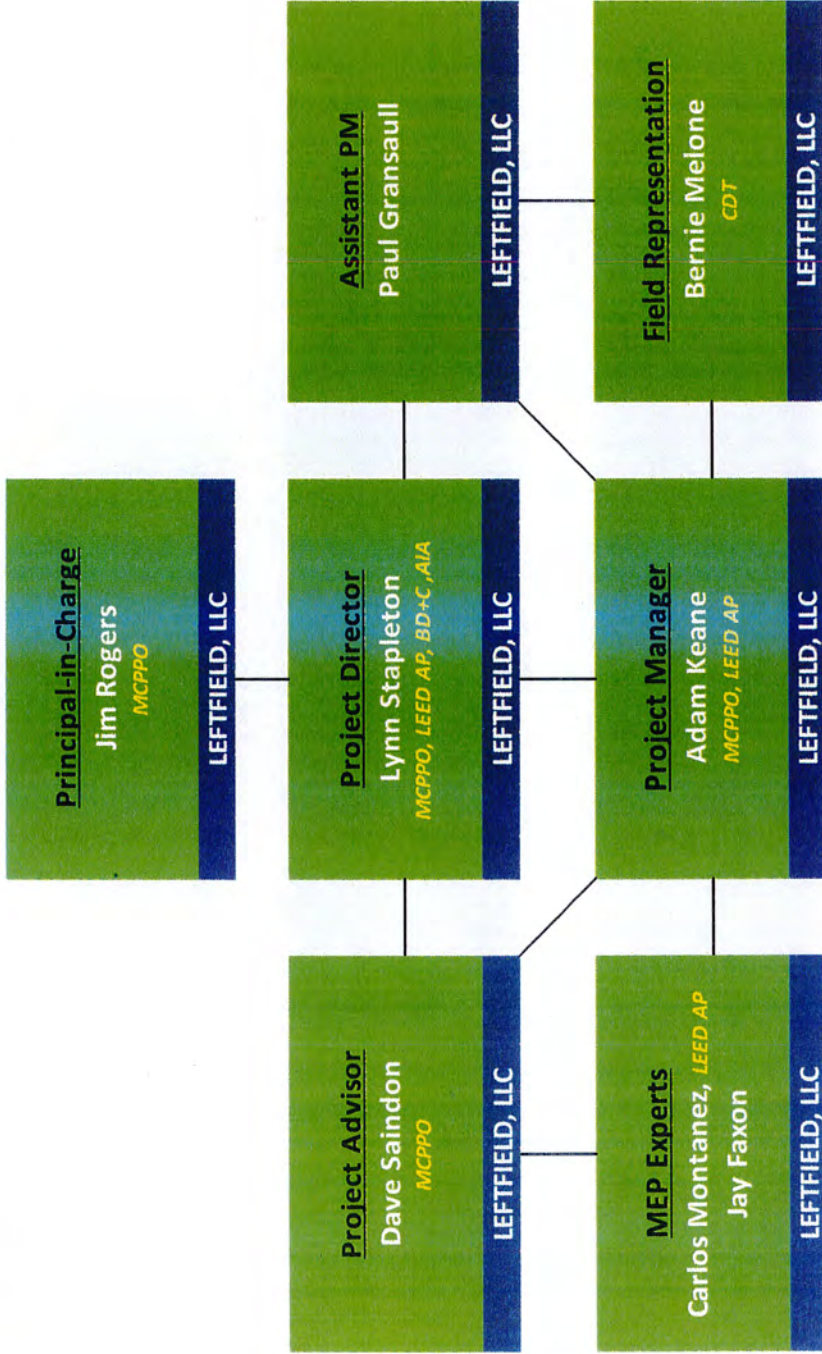
Mary Pichetti
Director of Capital Planning

Attachments:

Leftfield, LLC Project Team Organizational Chart
OPM System Access Request Form – OPM Report System User

Cc: Legislative Delegation
Shawn E. Cadime, President, Fall River City Council
Michael Hoar, Chief of Staff to the Mayor, City of Fall River
Mark Costa, Vice-Chair, Fall River School Committee
Dr. Matthew H. Malone, Superintendent, Fall River Public Schools
Kenneth Pacheco, Chief Operating Officer, Fall River Public Schools
Lynn Stapleton, Owner's Project Manager, Leftfield, LLC
Adam Keane, Owner's Project Manager, Leftfield, LLC
File: 4.1 OPM Selection (Region 6)

PROJECT TEAM



MSBA SYSTEM ACCESS REQUEST FORM OPM REPORT SYSTEM USER

PLEASE PRINT CLEARLY.

TODAY'S DATE: _____

TITLE: _____ PHONE: _____

NAME: _____

E-MAIL ADDRESS: _____

ADDRESS: _____ CITY: _____ ZIP: _____

DISTRICT NAME: _____

SYSTEM ACCESS REQUESTED:

OPM REPORT SYSTEM

OPM Firm (Update)

OPM Firm (Read Only)

District Staff (Read Only)

SCHOOLS FOR WHICH ACCESS IS REQUESTED (Please List)

I, _____, the Superintendent of Schools or Mayor/Town Administrator for the Town/City/Regional School District of _____ hereby authorize the above-named individual to access and use the MSBA online database as requested above, with the level(s) of access indicated. I understand that, should the above-named individual be granted access to this database, he/she will be solely responsible for access to the database on behalf of the Town/City/Regional School District of _____, using the login ID and password provided by the MSBA.

Signed: _____, Superintendent of Schools/Mayor/Town Administrator

MSBA Use Only

APPROVED BY: _____ DATE _____

COMPLETED BY: _____ DATE _____

Please fax the completed form or email a PDF of the completed form to Katie DeCristofaro at the MSBA. Facsimile: 617-720-5260 or 617-720-8460. Email: Kathryn.Decristofaro@MassSchoolBuildings.org.

Massachusetts School Building Authority

Deborah B. Goldberg
Chairman, State Treasurer

Maureen G. Valente
Chief Executive Officer

John K. McCarthy
Executive Director / Deputy CEO

December 21, 2016

Honorable Jasiel F. Correia II
Mayor, City of Fall River
Executive Office of the Mayor
One Government Center, Room 619
Fall, MA 02722

RE: Designer Selection

B M C Durfee High

MSBA ID: 201400950505

Dear Mayor Correia:

On Tuesday, December 20, 2016, the Massachusetts School Building Authority Designer Selection Panel ("DSP") interviewed the finalists for the above-referenced project. The following individuals represented the City of Fall River on the DSP:

- Chris Gallagher, Director of Buildings and Grounds
- Ken Pacheco, Chief of Operations
- Maria Pontes, Principal

In accordance with the provisions of Massachusetts General Laws, Chapter 7C, Sections 44 through 58, and the MSBA Designer Selection Procedures, the DSP voted unanimously to rank the finalists, in order of qualifications, as follows for the subject project:

1. Ai3 Architects LLC
2. Mount Vernon Group Architects, Inc.
3. Perkins+Will

The DSP determined that Ai3 Architects LLC possesses the requisite skills and experience for this project, particularly in light of their extensive experience in the design and construction of schools in Massachusetts.

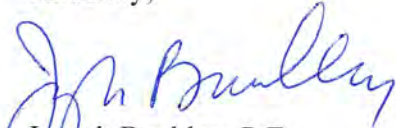
The City of Fall River should now take the appropriate local steps necessary to award the contract for designer services to the first-ranked firm and authorize fee and contract negotiations. Please know that the City of Fall River must use the MSBA's standard contract for designer services, a copy of which can be downloaded from our website, MassSchoolBuildings.org.

Before beginning the contract and fee negotiations, however, and in order to remain eligible for the reimbursement of a portion of the designer services fee, please have your Owner's Project

Designer Selection Panel Meeting Results Letter
B.M.C. Durfee High School, Fall River, MA
December 21, 2016
Page 2

Manager contact the MSBA Project Manager for this project, Chris Alles, to discuss the MSBA's guidelines. Upon completion of contract and fee negotiations with the first-ranked firm, please forward a copy of the fully executed contract to Kathryn DeCristofaro, Capital Program Manager, at the MSBA.

Sincerely,



Joseph Buckley, P.E.
Chief Engineer

cc: Fall River Legislative Delegation
Chris Gallagher, Director of Buildings and Grounds
Ken Pacheco, Chief of Operations
Maria Pontes, Principal, B.M.C. Durfee High School
Lynn Stapleton, Leftfield, LLC
Scott Dunlap, Ai3 Architects LLC
Frank Tedesco, Mount Vernon Group Architects, Inc.
Robert Brown, Perkins+Will
Chris Alles, MSBA Project Manager
File 4.3 Feasibility Study

APPENDIX C

Design Enrollment Certification Letter

MSBA's Design Enrollment Letter for the BMC Durfee High School Project and the Design Enrollment Certification executed by the Mayor, School Committee Chair and the Superintendent of Schools are included in this section of the Appendix for record. The agreed upon design enrollment for the District's 9th through 12th grades is 2,570 students. The design enrollment is based on the average 9th through 12th grade base enrollment forecast for the projected period through the 2023-2024 school year.

This section includes the following:

1. MSBA Design Enrollment Letter
2. Design Enrollment Certification

Massachusetts School Building Authority

Deborah B. Goldberg
Chairman, State Treasurer

John K. McCarthy
Executive Director

August 27, 2015

Ms. Meg Mayo-Brown, Superintendent
Fall River Public Schools
City of Fall River
417 Rock Street
Fall River, MA 02720

2015 SEP 1 PM 1 20
FALL RIVER PUBLIC SCHOOLS
SUTP'S OFFICE

Re: City of Fall River, B.M.C. Durfee High School

Dear Superintendent Mayo-Brown:

I would like to thank you and your team for meeting with Massachusetts School Building Authority (the "MSBA") staff on July 23, 2015 during which enrollment projections and methodologies were reviewed for the B.M.C. Durfee High School (the "Proposed Project") in the City of Fall River (the "District"). As discussed, the next critical step is for the MSBA and the District to agree on the design enrollment for the B.M.C. Durfee High School.

The B.M.C. Durfee High School presently serves the District's entire grade 9 through 12 enrollment and accordingly, this analysis will be particularly focused on the enrollment projections for those grades.

The table below illustrates the District's K-12 enrollment during the most recent ten year period, including enrollment for the current school year (2014-2015) as reported by the Department of Elementary and Secondary Education (the "DESE"). The total grade 9 through 12 enrollment in Fall River as reported by the District for the most recent school year is 2,440 students, which reflects a decrease of 476 students (-16%) from the grade 9 through 12 enrollment reported in 2005, which was the maximum grade 9 through 12 enrollment reported in the preceding ten years. Additionally, the current year's grade 9 through 12 enrollment reflects a decrease of approximately 117 students (-5%) from the average grade 9 through 12 enrollment reported during the preceding ten year period.

#1

Page 2
August 27, 2015
Fall River Enrollment Letter

YEAR	K-5	6-8	9-12	TOTAL
2005	5,165	2,655	2,916	10,736
2006	4,958	2,538	2,797	10,293
2007	4,871	2,429	2,660	9,960
2008	4,971	2,369	2,488	9,828
2009	4,956	2,266	2,505	9,727
2010	4,959	2,308	2,421	9,688
2011	4,930	2,293	2,431	9,654
2012	5,151	2,332	2,471	9,954
2013	5,311	2,392	2,436	10,139
2014	5,348	2,295	2,440	10,083

The MSBA understands that the District is proposing a design enrollment to accommodate approximately 2,100 students in grades 9 through 12 at the B.M.C. Durfee High School. The enrollment in grades grade 9 through 12 reported to the DESE for the 2014-2015 school year at the B.M.C. Durfee High School was 2,440 students.

With respect to future enrollments, the MSBA’s base enrollment forecast indicates the District’s grade 9 through 12 enrollment will experience a slight increasing trend over the next 10 years. The average grade 9 through 12 base enrollment forecast for the projected period through the 2023-2024 school year is 2,570 students.

As a result of a sensitivity analysis performed by the MSBA on this base enrollment projection, no adjustments have been made. The MSBA examined fluctuations to the out-of-district enrollment patterns of the District’s residents over time and believes that any potential increase in enrollment resulting from renovation and/or construction at B.M.C Durfee High School would be offset by anticipated enrollment increases at the Atlantis Charter School and the Argosy Charter School as they both expand their programs to include grades 9 through 12.

Based on the discussions between the District and the MSBA, and review of the anticipated development information provided by the District, it was determined that the rate of new housing development in the District is not anticipated to be substantially different than the median rate of development experienced in the District over the last 10 years. Accordingly, no adjustments were made to the MSBA enrollment model with regards to anticipated housing development.

As a result of analysis on the base enrollment projection and based on the historical enrollment trends of the District, the MSBA recommends a design enrollment of 2,570 students for the B.M.C. Durfee High School.

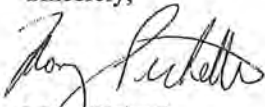
The MSBA believes that this design enrollment recommendation will position the District to efficiently meet space capacity needs throughout future enrollment variations. Please sign and return the attached certification within 14 calendar days to confirm agreement on this design enrollment. If the District feels that this design enrollment does not meet the needs of the

Page 3
August 27, 2015
Fall River Enrollment Letter

District, please respond to this letter via e-mail to Sarah Blache and propose three meeting/conference call times for which the District can be available to discuss enrollment.

If you have any questions regarding this matter, please do not hesitate to contact me or Sarah Blache (Sarah.Blache@MassSchoolBuildings.org) at 617-720-4466.

Sincerely,



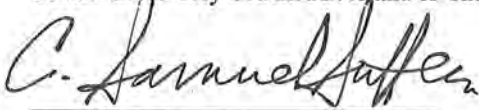
Mary Pichetti
Director of Capital Planning

Cc: Legislative Delegation
The Honorable Samuel Suttor, Mayor, City of Fall River
Joseph D. Camara, President, Fall River City Council
Kenneth C. Pacheco, Director of Public Works, City of Fall River
Mark Costa, Vice-Chair, Fall River School Committee
Michael Saunders, Chief Financial Officer, Fall River Public Schools
Tom Coogan, Chief Operating Officer, Fall River Public Schools
File: 1.2 Enrollment Projections (Region 6)

**MASSACHUSETTS SCHOOL BUILDING AUTHORITY
CITY OF FALL RIVER
B.M.C. DURFEE HIGH SCHOOL
DESIGN ENROLLMENT CERTIFICATION**

As a result of a collaborative analysis with the Massachusetts School Building Authority (the "MSBA") of enrollment projections and space capacity needs for the proposed project at the B.M.C. Durfee High School, the City of Fall River hereby acknowledges and agrees that the design of the proposed project at the B.M.C. Durfee High School shall be based on an enrollment of no more than 2,570 students in grades 9-12. The City of Fall River further acknowledges and agrees that, pursuant to 963 CMR 2.00 *et seq.*, the MSBA shall determine the square feet per student space allowance and total square footage for a high school serving 2,570 students in grades 9-12. The City of Fall River acknowledges and agrees that it has no right or entitlement to any particular design enrollment, square feet per student space allowance, or total square footage and that it has no right or entitlement to a design enrollment any greater than 2,570 students for the B.M.C. Durfee High School, and further acknowledges and agrees that it shall not bring any claim or action, legal or equitable, against the MSBA, or any of its officers or employees, for the purpose of obtaining an increase in the design enrollment of the B.M.C. Durfee High School that it has acknowledged and agreed to herein. The City of Fall River further acknowledges and agrees that, among other things, the design enrollment, square feet per student space allowance, and total square footage of the B.M.C. Durfee High School shall be subject to the approval of the MSBA's Board and that the final approval of a proposed project at the B.M.C. Durfee High School shall be within the sole discretion of the MSBA's Board.

The undersigned, for themselves and the City of Fall River, hereby certify that they have read and understand the contents of this Design Enrollment Certification and that each of the above statements is true, complete and accurate. The undersigned also hereby certify that they have been duly authorized by the appropriate governmental body to execute this Certification on behalf of the City of Fall River, and to bind the City of Fall River to its terms.



Chief Executive Officer / Mayor

9-14-15
Date


Superintendent of Schools

9/14/15
Date



Duly Authorized Representative of School Committee

9-14-15
Date

APPENDIX D

Vocations and Technology Programs (Chapter 74)

BMC Durfee High School – Fall River, MA

Chapter 74 Programming Submission

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 - b. Existing Approved Chapter 74 Program to be Expanded
 - c. Non-Chapter 74 Program Offerings or New Programs to Become Approved Chapter 74 Programs
 - d. New Non-Chapter 74 Programs to be Added (Potentially to become Future Chapter 74)
 - e. Current Process for Admission to the BMC Durfee High School Career/Vocational Technical Education Program
 - f. Educational Vision for Chapter 74 Programming
 - g. Program Advisory Committee and Role in Durfee HS Chapter 74 Programming
 - h. Overview of the Local Authorization Process
- III. Programs to be Included in the New Proposed BMC Durfee High School Project**
 - a. Overview - Table of Existing to Remain, Existing to be Expanded, New
 - b. Descriptions of Existing Approved Chapter 74 Programs to be Expanded
 - c. Descriptions of Existing Non-Chapter 74 Programs (Future Chapter 74)
 - d. Descriptions of New Non-Chapter 74 Programs (Proposed Future Chapter 74)
 - e. Descriptions of Chapter 74 and Non-Chapter 74 Programs to be Discontinued
- IV. DESE Chapter 74 Approval Process**
 - a. Overview of New Application Process, Requirements and Due Dates
 - b. New Chapter 74 Approval Process Flow Graphic
- V. Confirmation Statement**
 - a. Statement
 - b. OPM Confirmation Letter
- VI. Appendix**

BMC Durfee High School – Fall River, MA

Chapter 74 Programming Submission

I. Project Overview

BMC Durfee High School, located at 360 Elsbree Street, Fall River MA was built in 1978 and is approximately 565,000 square feet. The High School was originally designed to serve over 4,000 students. The current student population is closer to 2,570. The school is sprawling and unmanageable. Many rooms oversized while many others are inadequately configured or appointed to serve the current educational program.

For a building that is not yet forty years old, the High School is in poor and rapidly declining condition. There are many active roof and window leaks. The required ventilation is lacking as the roof top units that provide fresh air and exhaust are at the end of their serviceable life and require replacement. Technology within the building is inconsistent and unreliable. Due to the building's vast size, the technology infrastructure is difficult to manage as IT rooms/closets are sporadic and WIFI coverage is spotty. Data outlets are not sufficient to meet the educational needs.

The BMC Durfee High School, a comprehensive high school, offers variety of Career and Technical Education programs under Chapter 74 that prepare students to be college and career ready. Our comprehensive career vocational technical education (CVTE) program provides students who complete a program a technical certificate in addition to completing their high school diploma requirements.

The Durfee High School has recently entered the Massachusetts School Building Authority's grant program. The goal of the newly embarked Feasibility Study is to determine the educational needs of the existing school, resolve the physical limitations of the existing building and promote a design that meets the needs of a 21st century comprehensive high school. The needs of the students are at the center of this project as the study determines whether a new or renovated building will support the specific and unique needs of the Hilltoppers.

Most students in our CVTE programs, open to both young men and women, pick a pathway at the start of their sophomore year and remain in that program for the final three years of high school. Students follow a course sequence that develops each student to graduate meeting industry competencies for safety, technical skills, employability, entrepreneurship, use of technology, and academic performance. CVTE students have opportunities to receive articulated college credit, take dual enrollment classes at BCC, and earn industry certificates or licenses.

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As we are planning for a new building, a goal of Durfee High School is to significantly increase the number of students participating in CVTE programs. Currently, approximately 12% of each graduating class completes our CVTE program. With the motto “Hands-on and project-based learning, college and career ready”, the goal is to have that increase to at least 20% to meet the needs of our student demographics.

The current Chapter 74 Program offerings include Cosmetology, Early Education and Care, Health Assisting, Health Assisting, Culinary Arts, Design and Visual Communications and Exploratory. The current enrollment across all of these offerings is 216 students. Based on the overall student population, local demographics and the local labor market, the Chapter 74 Program at Durfee has significant room for growth but due to the current scheduling and building limitations, enrollment in Chapter 74 programs has been below expectations. The current Chapter 74 spaces are in need of major updates. With the new building program ensuing, the District has the opportunity to analyze, re-envision and grow the Chapter 74 programs and to consider new non-chapter 74 Perkins programs that could ultimately track into Chapter 74 programs.

The District has a desire to more successfully integrate and blend the Career/Vocational Technical Education (CVTE) with the General Academic Education provided at Durfee High School. Growth of the CVTE programs in general is also a primary goal as student demographics, existing and future job markets and student interests are constantly evolving. The District is taking the opportunity with the new building program study to further develop the CVTE Program that has been under discussion with the Program Advisory Committees and the Curriculum Subcommittee and to proactively plan for the future of the CVTE Program at the new Durfee High School. Sustainability and relevance will be governing factors.

In order to accomplish this goal, we plan to:

- Make CVTE program more visible and enticing to students looking for relevant project-based learning that helps prepare college and career-ready students
- Increase capacity as we enter the new building with a more modern and contiguous spaces that are more functional for growing our programs.
- Add three additional Chapter 74 in the 2017-18 school year with at least three additional Chapter 74 programs planned for the new building.
- Continue to consider Labor Market trends and applying for new Chapter 74 programs that would require the need for additional flexible spaces.

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CAREER/VOCATIONAL TECHNICAL EDUCATION CLUSTERS



II. Overview Chapter 74 Programs at BMC Durfee High School

a. Existing Approved Chapter 74 Program Offerings

The BMC Durfee High School Career/Vocational Education (CVTE) program has six DESE approved Chapter 74 programs and one exploratory program that serves as a feeder system. The exploratory program allows students to sample the program offerings to determine their interest in a CVTE program. These Chapter 74-approved CVTE programs include:

1. Environmental Science & Technology (150507)
2. Design & Visual Communications (500401)
3. Cosmetology (120401)
4. Early Education & Care (131210)
5. Health Assisting (510000)
6. Culinary Arts (120500)
7. Exploratory (990100)

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b. Existing Approved Chapter 74 Program to be Expanded

Due to the existing difficult requirements and restrictions placed on CVTE for students wishing to gain admission to a CVTE program, the District feels that expansion of all of the existing approved Chapter 74 programs listed above is warranted along with a re-vamping of the recruitment and admissions process and the High School Schedule. This re-branding of CVTE would help to make CVTE programs more enticing and real-world relevant and a more conducive overall High School Schedule would open the programs up to more students and provide greater opportunities for student success while in High School and beyond.

c. Non-Chapter 74 Program Offerings or New Programs to Become Approved Chapter 74 Programs

There are two existing non-Chapter 74 programs, Radio and Television Broadcasting and Engineering Technology, that currently follow Chapter 74 Frameworks/Standards and one new program is in the process of being considered by the DESE for Chapter 74 approval for the 2017-2018 school year. A new Chapter 74 Marketing Program would help to fill the void created when the Business Department was eliminated in 2008. The District submitted a Letter of Intent by DESE's February 10, 2017 deadline to apply for Chapter 74 approval for each of the following programs:

1. Radio and Television Broadcasting (090701)
2. Engineering Technology (150000)
3. Marketing (190203)

d. New Non-Chapter 74 Programs to be Added (Potentially become Future Chapter 74)

There are two programs that are under consideration to become Chapter 74 programs once the new school opens. The construction Craft Laborer Program, currently a non-Chapter 74 program that follows most of the Chapter 74 Framework, has been limited by equipment and space needs from fully implementing the DESE Framework. The Program Advisory Committee and the Curriculum Subcommittee have discussed continued development of the program with the goal of eventually filing for Chapter 74 approval once the new building design is developed and appropriate space and equipment can be ascertained. Diesel Technology is a program with a strong Labor Market Demand and strong

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interest from students interested in Automotive Mechanics but were not accepted to a local Vocational Technical School. Currently, there is no suitable space or equipment for this type of program. These potential CVTE course offerings would include:

1. Construction Craft Laborer (469999)
2. Diesel Technology (470616)

e. Current Process for Admission to the BMC Durfee High School Career/Vocational Technical Education Program

(For a full listing of existing courses, descriptions and credits offered in the CVTE Program offerings outlined in this Section, see Section VI, Item 6.)

Students wishing to apply to a Career/Vocational Technical Education and who have requested admission to a CVTE program are assessed using the selection criteria of ranking with a composite score based on grades, conduct, attendance, and personal interview. Applications received after the spring course selection deadline are evaluated on a rolling basis according to the established criteria and the resulting composite score will be accepted based on available space or the student's application will be integrated in rank order on an established waiting list. Most students begin the three-course of courses in Grade 10 and must pass each course with a minimum of a 65 or above to proceed to the next course in the pathway. Please see the Durfee CVTE website for the full admissions policy.

Many 9th graders who wish to enroll in CVTE pathways participate in the “Durfee Discovery” or Exploratory Program which is a Freshman Exploratory Program where students select 8 five-week mini-courses that introduce students to the many Career and Technology opportunities available at Durfee High. Students will be introduced to applicable technology through hands-on activities, employability skills and safety. These mini-courses will enable students to make informed decisions concerning future career pathways or electives at Durfee High.

f. Educational Vision for Chapter 74 Programming

The mission of the BMC Durfee High School is to deliver a rigorous, comprehensive education and expose students to authentic and real world experiences. BMC Durfee High School welcomes a diverse student body and seeks

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to prepare all students to become critical thinkers, productive citizens and independent learners in a changing society.

The most important goal of CVTE programs is to focus on the educational improvement of the approximately 67% of students who may not plan to enter a four-year college program after graduation but which may choose to go directly to a two-year college or technical program, the military or the work place. These students deserve to be provided opportunities and held to the same high standards as their comprehensive high school peers. A successful integration of academic and vocational skills means that students are given the tools to succeed either in the world of work or in college.

During the Educational Visioning Sessions held the following goals were identified:

- Expand all existing approved Chapter 74 Programs
- Change from isolated vocational/technical areas within the school and provide integration of the Chapter 74 Programs throughout the school
- Provide appropriately sized, outfitted and equipped spaces for each Chapter 74 Program
- Locate Chapter 74 Programs that provide a public services with easy access to the public
- Integrate “Academic” electives with CVTE programming
- Advance current Non-Chapter 74 Programs that currently follow Chapter 74 Program frameworks/standards to DESE approved Chapter 74 Programs
- Programs provided in the nearby Vocational School were reviewed to avoid duplicative Chapter 74 programs
- New programs that would be appropriate to add as non-Chapter 74 Programs were discussed with the intent to start out these programs using Chapter 74 frameworks/standards with the intent to eventually evolve these programs to approved Chapter 74 Programs
- Approved Chapter 74 Programs and Bureau of Labor Statistics Information related to the Fastest Growing Occupations and Most New Jobs Projected to 2024 were discussed

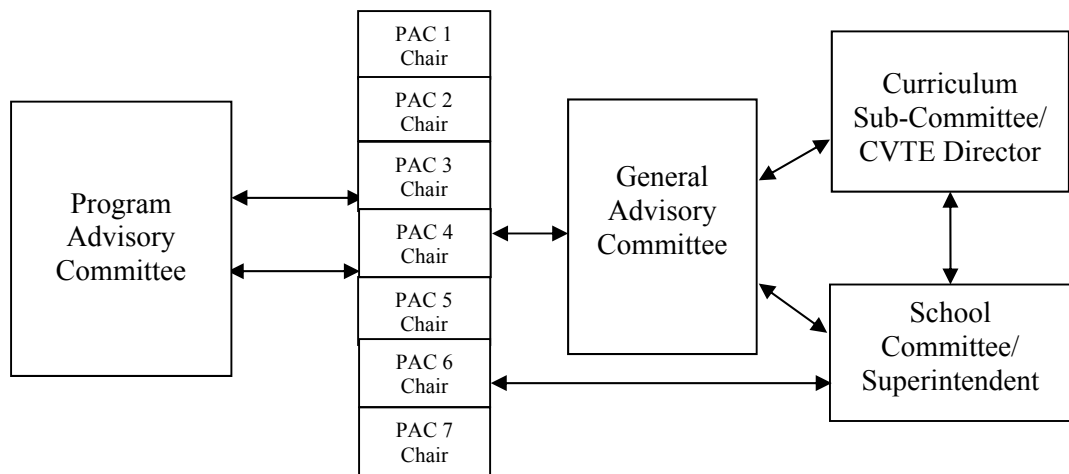
A primary goal for BMC Durfee High School is a comprehensive high school environment where no students is restricted due to academic and or vocational

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requirements. The CVTE programs would be offered to all students who plan to become college and career ready.

g. Program Advisory Committees and Role in Durfee HS Chapter 74 Programs

There is a Program Advisory Committee (PAC) for each Chapter 74 program that assists in aligning instruction with the relevant career and technical pathways. A selected Chair representing each PAC becomes a member of the school’s General Advisory Committee (GAC) which advises the CVTE Director and the School Committee’s Curriculum Sub-Committee.



The PAC will consult with and meet with as required with the DESE Technical Assistance Team in the development of new Chapter 74 programs and to ensure that the existing CVTE Programs are following required DESE Frameworks/Standards and the design of new spaces for these programs are appropriate.

h. Overview of the Local Authorization Process

1. Narrative on Process and Requirements

The District of Fall River local authorization process for Chapter 74 Programming is as follows:

Each program offering (Environmental Science & Technology, Design & Visual Communications Cosmetology, Early Education & Care, Health Assisting, Culinary Arts and Exploratory) has a Program Advisory

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Committee (PAC). The job of the PAC is to keep the curriculum fresh and relevant to the real-world work place. Each PAC Chair becomes a member of and reports recommendations to the General Advisory Committee (GAC) which in turn reports its recommendations to the Curriculum Sub-Committee and Director of Career/Vocational Technical Education.

CVTE Director Ray Medeiros then reports his recommendations to Principal, Maria Pontes. Principal Pontes accompanied by Director Medeiros report the final recommendations to the School Committee and Superintendent.

Lastly, the Durfee High School Feasibility Study's School Building Committee formed an Educational Programming Sub-Committee to be a liaison between the District and the local process outlined above and the Architect. This Sub-Committee will assist in developing a program of spaces and space requirements that will meet the academic as well as CVTE educational needs and requirements for the new building program as it is developed.

The following votes were taken to approve the most recent Chapter 74 Programming changes and this Chapter 74 Programming Submission:

- **School Committee Instructional (Curriculum) Sub-Committee** - Voted to approve on Tuesday, February 7, 2017
- **School Committee** - Voted to approve on Monday, February 13, 2017
- **School Building Committee** – The meeting held on Wednesday, February 15, 2017, in which a vote was scheduled to approve supporting the School Committee's approval of the Chapter 74 programs and to vote to submit the Chapter 74 Programming Submission. There was not a quorum of the SBC present and a vote is scheduled for March 2, 2017 at the SBC Meeting.

All Vocational teachers are licensed by the Massachusetts Department of Elementary and Secondary Education (DESE). They have the required education credentials, as well as a minimum of three to five-years of experience in the field in which the teacher is licensed. For certain vocational programs, the program instructors have Massachusetts and/or federal government or industry issued licenses or certifications as required for the specific program instructors.

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2. Local Approvals

The Curriculum Subcommittee and Program Advisory Committee Meeting Minutes are included in the Appendix. The recommendations presented to the School Committee and the School Committee’s vote of approval are also included in the Appendix. The School Building Committee’s Meeting Minutes in which a perfunctory vote of support for the Chapter 74 Programming and the submission to MSBA are included as well.

III. Programs to be Included in the New Proposed BMC Durfee High School Project

a. Overview - Table of Existing to Remain, Existing to be Expanded, New

Chpt. 74 & Non-Chpt. 74 Program Offering	Grade Levels	Current Enrollment	Current Staff	Current Capacity	Proposed Staffing	Proposed Capacity	Program Type
Environmental Science & Technology (150507)	All	0	1	60	2	60	Expanded Existing Chpt. 74 Program
	10	N/A		20			
	11	N/A		20			
	12	N/A		20			
Design & Visual Communications (500401)	All	23	2	60	2	60	Expanded Existing Chpt. 74 Program
	10	3	2	20			
	11	11		20			
	12	9		20			
Cosmetology (120401)	All	30	2	36	3	72	Expanded Existing Chpt. 74 Program
	10	11		12		24	
	11	9		12		24	
	12	10		12		24	

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Chpt. 74 & Non-Chpt. 74 Program Offering	Grade Levels	Current Enrollment	Current Staff	Current Capacity	Proposed Staffing	Proposed Capacity	Program Type
Early Education & Care (131210)	All	39	2	48	3	96	Expanded Existing Chpt. 74 Program
	10	14		16			
	11	14		16			
	12	11		16			
Health Assisting (510000)	All	38	3	45	4	90	Expanded Existing Chpt. 74 Program
	10	14		16			
	11	10		16			
	12	14		16			
Culinary Arts (120500)	All	40	2	48	4	96	Expanded Existing Chpt. 74 Program
	10	17		16			
	11	12		16			
	12	11		16			
Durfee Exploratory (990100)	9						Expanded Existing Chpt. 74 Program
Radio and Television Broadcasting (090701)	All						Existing Non- Chpt. 74 to New Chpt. 74
	10						
	11						
	12						

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Chpt. 74 & Non-Chpt. 74 Program Offering	Grade Levels	Current Enrollment	Current Staff	Current Capacity	Proposed Staffing	Proposed Capacity	Program Type
Engineering Technology (150000)	All						Existing Non- Chpt. 74 to New Chpt. 74
	10						
	11						
	12						
Marketing (190203)	All	N/A	N/A	N/A	?	?	New Chpt. 74 Program
	10	N/A	N/A	N/A			
	11	N/A	N/A	N/A			
	12	N/A	N/A	N/A			
Construction Craft Laborer (469999)	All	N/A	N/A	N/A	?	?	New Non-Chpt. 74 Program
	10	N/A	N/A	N/A			
	11	N/A	N/A	N/A			
	12	N/A	N/A	N/A			
Diesel Technology (470616)	All	N/A	N/A	N/A	?	?	New Non-Chpt. 74 Program
	10	N/A	N/A	N/A			
	11	N/A	N/A	N/A			
	12	N/A	N/A	N/A			

b. Descriptions of Existing Approved Chapter 74 Programs to be Expanded

1. Environmental Science & Technology

i. Description of the Program

Students learn the theory of natural cycles and how population impacts them. Students become proficient with the testing and maintaining of water quality, troubleshooting, breeding and data collection from shop aquarium systems. Energy production, use,

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efficiency and consumption topics are researched and experimented with. Flora and fauna species, diversity and population, the importance of native plant and animal species diversity, and the understanding of their populations in their natural environments is taught and many different marine science industries and career opportunities are explored. Students have the opportunity to do fieldwork in environmental engineering/consulting, natural resource management and land-use planning. Students receive their 10-Hour OSHA General Industry Safety Training Certificates.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Environmental Science and Technology Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- Program still in early stages: Program Approval Inspection took place 10/29/15 and teacher was hired only weeks before this first year of the full program
- Exploratory should help expand student awareness of the program: Last year's Exploratory only cycled through only 3 sections with the hired teacher (about 45 students)
- Revised Durfee Discovery (C74 Exploratory) and will cycle 8 sections (130 Freshman) through this year.
- Looking to have enough course requests this year to run an Environmental I next school year
- Opportunities for collaboration or feeder to Bristol Community College
- Access to nature trails/wetlands/outside through classroom door
- Could become feeder to AP Environmental

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

- Visibility and awareness in the school has been challenging as a new program
- Is a difficult program to describe, especially since courses 1 through 3 have yet to run

iv. Description of How Deficiencies will be Addressed, Modifications Planned

- Instructor has been teaching electives in ecology and urban farming which has similar activities and may draw some students to the program
- Increased Freshmen awareness as revised Durfee Discovery (C74 Exploratory) and will cycle 8 sections (160 Freshman) through this year.
- Program Advisory Committee has come up with suggestions for expanding awareness and pathways for the program

v. Program Requirements

AGRICULTURE & NATURAL RESOURCES CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Environmental Science & Technology (150507)	1:20	125	2,500	12

vi. Physical Building Needs, Tools and Equipment

(In development)

The proposed capacity for the Environmental Science & Technology Program is 60 students. Based on this capacity with two instructors, two (2) lab spaces are needed along with storage and an office space for each lab.



Total Space Allotment:

- Labs – 5,000 SF
- Offices – 200 SF
- Storage – 300 SF

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Loose Furnishings:

- (10) Two-Person Work Tables with Storage below
- (20) Computer Work Station Furniture and Chairs
- (1) Teacher Work Station and Chair

Fixed Items:

- (24 Ft.) Markerboard
- (24Ft.) Tackboard
- (1) Projector
- (1) Projector Screen

Equipment:

- (20) Computers
- (1) Teacher Computer

vii. Staffing

There is currently one instructor for this program and the District will be adding an additional instructor.

viii. Planned Budget

(In development.)

2. Design and Visual Communications

i. Description of the Program

Students prepare for a career or post-secondary education in multimedia arts. Students enrolled in this course explore the formal elements of design including composition, color, texture, and shape in the form of applied visual problem-solving exercises in which typography and meaningful concept are added in order to shape the work into effective graphic design communication. Digital photography, video production, animation, as well as graphic design and typographic principles are also a focus. Students explore many industry standard software applications during the course and develop a portfolio website.

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Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Design and Visual Communications Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- Program has diversified with the addition of equipment
- Provides design opportunities for School/Community projects
- Students have regular success at SkillsUSA
- Students regularly attend Bristol Community College Visual Program

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

- Is a difficult program to describe and recent Exploratory changes hampered exposure and recruiting
- Attracts AP students and conflicts with the scheduling for Sophomores
- Classroom space is not contiguous or convenient for collaboration or shared resources

iv. Description of How Deficiencies will be Addressed, Modifications Planned

- Visual Design elective should provide another entry point into the Program
- Internship development needed
- Looking to freelance for the internet projects as an internship opportunity

v. Program Requirements

ARTS & COMMUNICATIONS CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Design & Visual Communications (500401)	1:20	110	2,200	12

vi. Physical Building Needs, Tools and Equipment

(In development.)

The proposed capacity for the Design and Visual Communications Program is 60 students. Based on this capacity and two Instructors, two (2) lab spaces are needed along with storage and an office space for each lab.



Total Space Allotment:

Labs - 4,400 SF
Offices – 200 SF
Storage – 300 SF

Loose Furnishings:

- (10) Two-Person Work Tables with Storage below
- (20) Computer Work Station Furniture and Chairs
- (1) Teacher Work Station and Chair

Fixed Items:

- (24 Ft.) Markerboard
- (24 Ft.) Tackboard
- (1) Projector
- (1) Projector Screen

Equipment:

- (20) Computers
- (1) Teacher Computer
- (2) Printers

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vii. Staffing

There are currently two instructors for this program. The District is proposing to expand this program but can do so without adding staff. Therefore, staffing will remain at two instructors.

viii. Planned Budget

In development.

3. Cosmetology

i. Description of the Program

Students receive knowledge and training in all facets of hair, skin, and nails to prepare them for the State Board Exam and begin a career in cosmetology.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Cosmetology Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- Mature program with solid career/post-secondary connections
- Seniors operate a salon for the public (hair, nails, spa)
- Students accumulate necessary hours and take the state license
- Most competitive program for enrollment

Labor Market Demand information has included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

- Three separate rooms are a challenge to monitor
- Public access and exposure has become challenging

iv. Description of How Deficiencies will be Addressed, Modifications Planned

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- Space layout and adjacency issues will be addressed during the Schematic Design Phase of the building project

v. Program Requirements

BUSINESS AND CONSUMER SCIENCES CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Cosmetology (120401)	1:25	Min. 20 SF/ Student per space	1,500	10

vi. Physical Building Needs, Tools and Equipment

Cosmetology Area:

- (1) A clinic area for at least 25 students
- (2) A lecture room with a minimum of 25 chairs properly equipped for demonstration or practical purposes
- (3) A basic room completely separated from the lecture and clinic rooms sufficiently large to accommodate 25 students.
- (4) Bathrooms within 300 feet

Aesthetics Area:

- (1) A clinic room of no less than 600 square feet, to be used exclusively for the teaching of aesthetics and containing all necessary equipment for clinical training
- (2) A lecture room of no less than 400 square feet, with arm chairs or desks and chairs for a minimum of 12 students. The lecture room must be available for at least one period per day for exclusive use for instruction in aesthetics.
- (3) A reception area and an office area
- (4) Bathrooms within 300 feet

Manicuring Area:

- (1) A clinic room of not less than 600 square feet to be used exclusively for the teaching of manicuring and containing all necessary equipment for practical training
- (2) A lecture room of not less than 400 square feet, with a minimum

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of 12 arm chairs or desks and chairs. The lecture room must be available for at least one period per day for exclusive use for instruction in manicuring.

- (3) A reception area
- (4) An office area
- (4) Bathrooms within 300 feet

vii. Staffing

There is currently two instructors who can only manage 12 students at a time under their Massachusetts license. There has historically been a high demand for this program and the District would like to add an additional instructor and could double capacity with new space in a new school building design.

viii. Planned Budget

In development.

4. Early Education and Care

i. Description of the Program

Students are introduced to the concepts of child development. Students learn to develop developmentally appropriate activities and have limited hands on experience in a preschool setting. This course promotes a further understanding of the Physical, Social, Emotional, and Intellectual Development of the preschool age child. Students demonstrate the development of basic skills in the onsite laboratory preschool.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Early Education and Care Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- Mature program with solid career/post-secondary connections
- Juniors operate a child-care lab open to the public
- Seniors do three periods of internship in the Community/Schools

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- Students who accumulate necessary hours can become licensed
- Provides a Community service

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

- Child-care lab space has become limiting and classroom space is not contiguous
- Public access and exposure has become challenging
- Plan to change the schedule for the junior class/instructor to make more attractive to the community

iv. Description of How Deficiencies will be Addressed, Modifications Planned

- Increase Public access and exposure as much as possible in the current building and explore better design option in the design process of the new building
- Investigate changing the schedule for the junior class/instructor to provide more attractive day-care options to the Community

v. Program Requirements

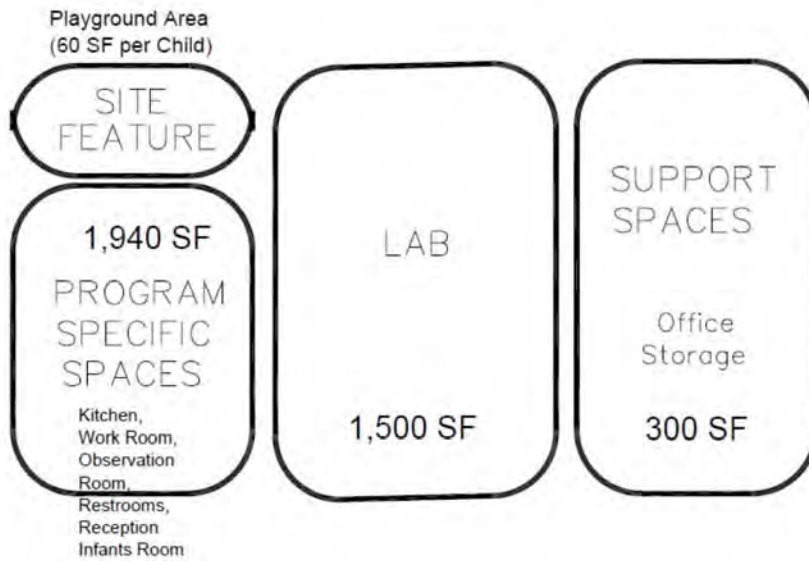
EDUCATION CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Early Education & Care (131210)	1:20	75	1,500	12

vi. Physical Building Needs, Tools and Equipment

(In development.)

The proposed capacity for the Early Education & Care Program is 96 students. Based on this capacity and three Instructors, three (3) lab spaces are needed along with storage, office and specific program spaces for each lab including a program site feature.

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Total Space Allotment:

Lab Space – 4,500 SF
Office Space – 300 SF
Storage Space – 600 SF
Kitchen – 350 SF
Work Rooms – 450 SF
Infants Room – 700 SF
Observe Rms.–240 SF
Restrooms – 360 SF
Reception – 500 SF
Playground–60 SF/Child

Loose Furnishings:

(10) Two-Person Work Tables with Storage below
(20) Computer Work Station Furniture and Chairs
(1) Teacher Work Station and Chair
(5) Stool
File Cabinet
Work Tables
Staff Table and Chairs

Fixed Items:

(32 Ft.) Markerboard
(32 Ft.) Tackboard
(1) Projector
(1) Projector Screen
(30 Ft.) Wall Cabinets
(10 Ft.) Reception Counter
Base cabinets with Sinks
Toddler Height Sinks
Paper Towel Dispensers

Equipment:

(12 Ft.) Bookshelves
(3) Play Pens
(12) Cribs
(2) Rocking Chairs

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- (2) Feeding Table
- (3) Refrigerator/Freezers
- (2) Range Oven
- (3) Microwaves
- (2) Dishwashers
- Visitor Chairs and End Tables

vii. Staffing

There are currently two instructors for this program. Due to the high student demand for this program and the high labor market demand in the field, the District would like to add an additional instructor.

viii. Planned Budget

(In development.)

5. Health Assisting

i. Description of the Program

This program provides the basic knowledge of the role of the Nurse Assistant and the healthcare system. Knowledge and nursing skills for the practice of patient care. Students acquire the hands-on skills in the nursing lab that enable them to care for a resident in a Long Term Care facility. Students must be 100% proficient in lab skills prior to the clinical affiliation. After becoming First Aid and CPR/AED Certified, students apply their knowledge and skills in a long term care facility under the supervision of the instructor. After successful completion of the Nursing Assistant competencies, students are eligible to take the state certification exam. Students also have the opportunity to apply their skills in a hospital setting with the acutely ill patient and explore other health related careers.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Health Assisting Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- Mature program with solid career/post-secondary connections
- High labor demand in Health careers
- Seniors work intern in nursing facilities
- Students accumulate necessary hours and become licensed (CNA, First Aid/CPR)

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

- Classroom/lab space is not contiguous which does not lend continuity to the program across all grade levels
- Increase capacity for Sophomores (Course 1) so that numbers remain higher in Courses 2 and 3.

iv. Description of How Deficiencies will be Addressed, Modifications Planned

- Explore better space layout and space adjacencies during the Schematic Design phase of the new building project

v. Program Requirements

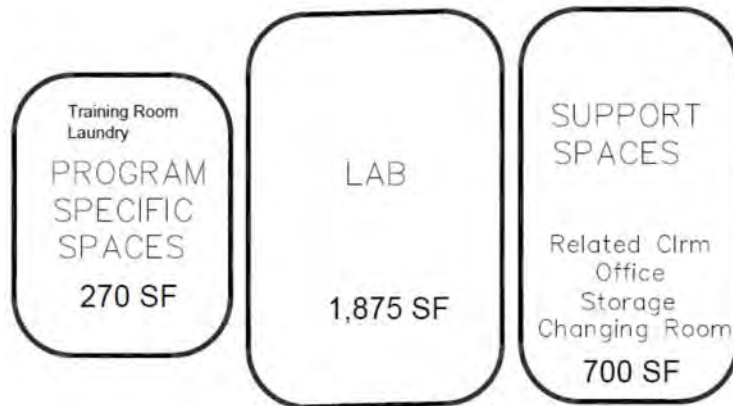
HEALTH SERVICES CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Health Assisting (510000)	1:15	125	1,875	12

vi. Physical Building Needs, Tools and Equipment

(In development.)

The proposed capacity for the Health Assisting Program is 90 students. Based on this capacity and four Instructors, four (4) lab spaces are needed along with storage, office, training, changing and laundry spaces for each lab.

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission



Total Space Allotment:
Lab Spaces – 7,500 SF
Office Spaces – 400 SF
Storage Spaces – 600 SF
Changing Rms -1,800 SF
Training Rooms – 360 SF
Laundry Spaces – 450 SF

Loose Furnishings:

- (10) Two-Person Work Tables with Storage below
- (20) Computer Work Station Furniture and Chairs
- (1) Teacher Work Station and Chair

Fixed Items:

- (24 Ft.) Markerboard
- (24 Ft.) Tackboard
- (1) Projector
- (1) Projector Screen
- (40 Ft.) Base and Wall Cabinets with Sinks
- (10 Ft.) Reception Counter
- (3) Paper Towel Dispensers
- Adjustable Shelving

Equipment:

- (2) Clothes Washers
- (2) Clothes Dryers
- Training Vanity with Sink

vii. Staffing

There is currently three instructors for this program and due to the high demand for this program, the District would like to add an additional instructor.

viii. Planned Budget

(In development.)

6. Culinary Arts

i. Description of the Program

Students become familiar with the basics of food preparation, safety & hygiene. This program includes food preparation, baking, dining room service and cleanup. It trains students in a sequence of activities for kitchen and bakery laboratory and dining room experiences, including menu planning, ordering, and inventory control as well as baking fundamentals including pastries, breads and special occasion cakes. This program includes the student-run coffee shop and student-operated restaurant which allow students to interact with customers daily.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Culinary Arts Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- Program draws a diverse student population
- Juniors and Seniors operate the restaurant and bakery
- Direction of the program has changed numerous times but potential connections with School Department Food Service and Bristol Community College programs are promising
- Provide another entry point to Chapter 74 Program while also providing elective opportunities for students

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

- Internship development needed
- Need professional certification program (ServeSafe, Restaurant Association)

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

- Culinary elective should provide another entry point into the program
- Lab and classroom space is not contiguous or convenient
- Shop was designed for at least three teachers and supervision is challenging with no windows in between spaces
- Public access and exposure has become challenging

iv. Description of How Deficiencies will be Addressed, Modifications Planned

- Develop the Internship Program
- Develop requirements for student to acquire professional certification
- Explore better space layout and space adjacencies during the Schematic Design phase of the new building project

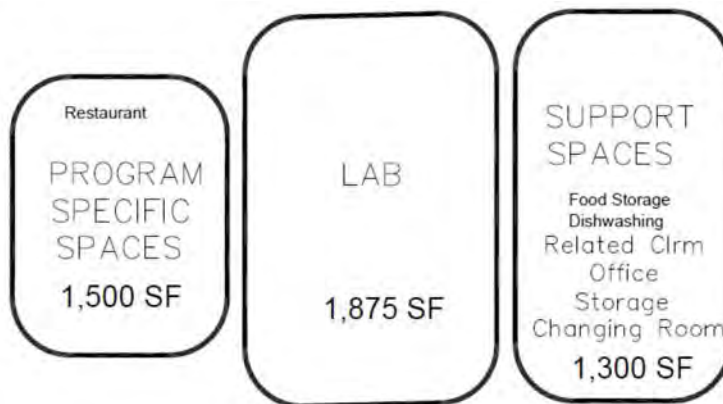
v. Program Requirements

HOSPITALITY AND TOURISM CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Culinary Arts (120500)	1:15	125	1,875	12

vi. Physical Building Needs, Tool and Equipment

(In development.)

The proposed capacity for the Culinary Arts Program is 96 students. Based on this capacity and four Instructors, four (4) lab spaces are needed along with office, kitchen, food storage, dishwashing, restaurant and laundry spaces for each lab.



Total Space Allotment:

- Lab Space – 7,500 SF
- Restaurant – 1,500 SF
- Food Storage – 600 SF
- Office Spaces – 400 SF
- Changing Rooms-450 SF
- Dishwashing – 350 SF
- Laundry – 150 SF

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

vii. Staffing

There is currently two instructors for this program and due to the high demand for this program, the District would like to add an additional two instructors.

viii. Planned Budget

(In development.)

7. Durfee Discovery

i. Description of the Program

This program offers mini-courses that introduce students to the many educational opportunities available. Students receive instruction in career pathways and explore their interests and abilities regarding educational and career preferences. Students are introduced to applicable technology, employability, skills and safety. These mini-courses enable students to make informed decisions concerning future career pathways or electives.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Durfee Discovery Program.

ii. Rationale for Continuing or Expanding Program and Pathway

- To develop and cultivate student demand for Chapter 74 Programs

Labor Market Demand information has been included for all opportunities in the Exploratory Program in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

(In development.)

BMC Durfee High School – Fall River, MA
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iv. Description of How Deficiencies will be Addressed, Modifications Planned

- Work on School Scheduling to provide more opportunity for students to enroll in Chapter 74 program.
- Work on the design to provide integration of Chapter 74 spaces with academic spaces and to improve on spaces and space provisions to better accommodate the programs and make them enticing

v. Program Requirements

EXPLORATORY CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Durfee Discovery (990100)	1:20			

vi. Physical Building Needs, Tools and Equipment

(In development.)

vii. Staffing

There is currently two instructors for this program and due to the high demand for this program, the District would like to add an additional two instructors.

viii. Planned Budget

(In development.)

b. Descriptions of Existing Non-Chapter 74 Programs on Track and New Programs to be Added as Approved Chapter 74 Programs

1. Radio and Television Broadcasting

i. Description of the Program

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

This course gives the student hands-on experience in many areas of the communication industry. All phases of video and audio production will be covered as well as the integration of technology. Students will learn voice-over techniques, digital still photography, digital video photography, shot composition, producing, scriptwriting, multimedia pre and post-production, editing, graphics, in-studio production and how to become on air talent. Students are required to assist the Instructors and staff at FRED-TV and have assigned job responsibilities and tasks for the successful operation of FRED-TV, Channel 17.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Radio and Television Broadcasting Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- High student demand
- Current pathway in place
- College connections and elective-based
- Market demand, cable industry, marketing industry, college programs
- Currently Comcast Cable funds are provided for staff and equipment

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

(In development.)

iv. Description of How Deficiencies will be Addressed, Modifications Planned

(In development.)

v. Program Requirements

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

ARTS AND COMMUNICATIONS CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Radio and Television Broadcasting (090701)	1:20	125	2,500	12

vi. Physical Building Needs, Tools and Equipment

(In development.)

vii. Staffing

(In development.)

viii. Planned Budget

(In development.)

2. Engineering Technology

i. Description of the Program

The main focus of this program is the design process and its application. Through hands-on projects, students apply engineering standards and document their work. Students use industry standard 3D modeling software to help them design solutions to solve proposed problems, document their work using an engineer’s notebook, and communicate solutions to peers and members of the professional community.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Engineering Technology Program.

ii. Rationale for Continuing and Expanding Program and Pathway

- Student demand and PLTW pathway in place
- Many students are concurrently enrolled in AP classes and

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

College Board is acknowledging PLTW courses

- 3 Staff Presently: 1 current Chapter 74 certified teacher, 2 certified in academic engineering
- 3 teachers certified and trained to teach PLTW
- Pathway could include AP class
- 21st Century and afterschool programs could provide visibility to community
- Maintains close connections with BCC to provide secondary college and career pathways

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Description of Deficiencies in the Existing Program

(In development.)

iv. Description of How Deficiencies will be Addressed, Modifications Planned

(In development.)

v. Program Requirements

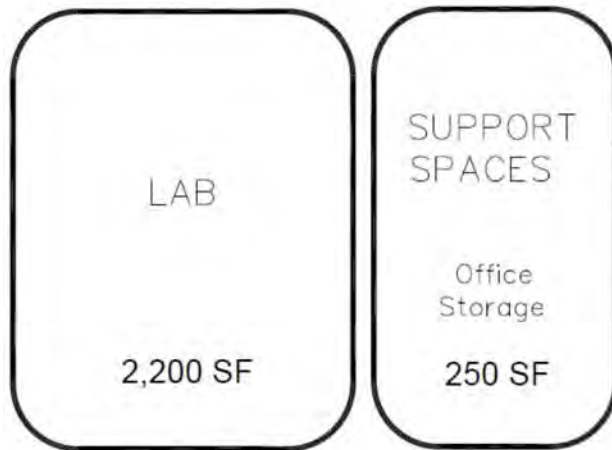
MANUFACTURING, ENGINEERING AND TECHNOLOGY CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Engineering Technology (150000)	1:20	110	2,200	12

vi. Physical Building Needs, Tools and Equipment

(In development.)

The proposed capacity for the Engineering Technology Program is 60 students. Based on this capacity, three (3) lab spaces are needed along with storage and an office space for each lab.

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission



Total Space Allotment:

Labs - 6,600 SF
Offices – 300 SF
Storage – 450 SF

Loose Furnishings:

- (10) Two-Person Work Tables with Storage below
- (20) Computer Work Station Furniture and Chairs
- (1) Teacher Work Station and Chair

Fixed Items:

- (24 Ft.) Markerboard
- (24 Ft.) Tackboard
- (1) Projector
- (1) Projector Screen

Equipment:

- (20) Computers
- (1) Teacher Computer
- Life Safety Devices per Code

vii. Staffing

There is currently one Chapter 74 certified Instructor teaching in this non-Chapter 74 program and two others teaching are Project Lead the Way (PLYW) trained and have preliminary Engineering-Academic certifications.

viii. Planned Budget

(In development.)

3. Marketing

i. Description of the Program

Students explore what it takes to market a product or service in today's fast-paced business environment, learning the fundamentals of marketing using real-world business examples.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Business Marketing Exploratory Program.

ii. Rationale for New Program and Pathway

- There is student demand and with no Business Department, the program would be a business option for students
- Could re-open and operate School Store (Bank/ATM)
- Retailing and Marketing could collaborate with Culinary and Cosmetology
- Market demand is high
- Possible certifiable teacher on current staff
- Limited space in current building for DESE approval and will need to find space that would be appropriate

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Program Requirements

BUSINESS AND CONSUMER SERVICES CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Marketing (190203)	1:20	110	2,200	12

iv. Physical Building Needs, Tools and Equipment

(In development.)

v. Staffing

(In development.)

vi. Planned Budget

(In development.)

vii. Future Pathway to DESE Approval

The District is currently following the DESE process for approval for the 2018-2019 school year.

c. New Non-Chapter 74 Programs (Potentially to Become Chapter 74 in New Building)

1. Construction Craft Laborer

i. Description of the Program

This course provides students with an introduction to construction site safety, basic hand and power tools, and skills required for construction of commercial, residential, and institutional structures. The course provides experiences and information (including career opportunities and training requirements) regarding construction-related occupations such as carpentry, bricklaying, and concrete masonry. Students engage in activities such as reading blueprints, rigging, roofing, framing, erecting structures, finishing surfaces, and maintenance of tools and equipment. The curriculum introduces students to a variety of trades. Upon completion of this two-level course the student will have the basic knowledge needed on any job site.

Refer to the Appendix, Section VI, Item 7 for all the current course offerings for the Construction Program.

ii. Rationale for New Program and Pathway

- Student demand and pathway in place
- Current non-Chapter 74 program in place with strong enrollment
- Transformed from wood shop and currently following Chapter 74 standards

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

- Electives could provide a multiple entry point to this program (Wood I and II)
- Possible schedule changes to allow for internship opportunities
- Program is flexible enough to cater to community needs like siding, roofing, gutters, maintenance, masonry and tile setting
- Could provide student interest in Masonry and Tile Setting
- Only two Chapter 74 programs in the state and challenging to find certifiable teacher
- Duplicative program options (Carpentry) under new Chapter 74 application process
- Current space is not contiguous and difficult to monitor
- No other area programs: Only two Chapter 74 programs in the State and challenging to find certified teacher

Labor Market Demand information has been included in the Appendix, Section VI, Item 3.

iii. Program Requirements

CONSTRUCTION CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Construction Craft Laborer (469999)	1:15	225	3,500	18

iv. Physical Building Needs, Tools and Equipment

(In development.)

ii. Staffing

There are currently two certifiable teachers on staff.

iii. Planned Budget

(In development.)

iv. Future Pathway to DESE Approval

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

The District is currently following the DESE process for approval for the 2018-2019 school year.

2. Diesel Engineering

i. Description of the Program

The Diesel Equipment Technology concentration focuses on careers that will build a knowledge base and technical skills in all aspects of the Diesel Equipment Technology industry. Students will have the opportunity to acquire hours towards industry ASE/NATEF certification and be exposed to skills to develop positive work ethics.

Students will study personal and shop safety, career opportunities in the diesel technology industry, the proper use of hand and power tools, basic oxyacetylene cutting, electric welding, and basic shop etiquette. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of diesel equipment.

ii. Rationale for New Program and Pathway

- Market demand both in city government, busing, industry
- Could provide opportunity for those interested in auto mechanics but not accepted into Diman
- New Program at New Bedford Vocational could provide guidance but not complete for student
- Would need to be approved for unique space and equipment in new school

Labor Market Demand information has been included in the Appendix Section VI, Item 3.

iii. Program Requirements

MANUFACTURING, ENGINEERING AND TECHNOLOGY CLUSTER	Teacher-Student Ratio	Area per Pupil (Sq. Ft.)	Minimum Area (Sq. Ft.)	Ceiling Clearance Height (Ft.)
Diesel Engineering (470616)	1:15	275	4,125	18

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

iv. Physical Building Needs, Tools and Equipment

(In development.)

ii. Staffing

(In development.)

iii. Planned Budget

(In development.)

iv. Future Pathway to DESE Approval

The District is currently following the DESE process for approval for the 2018-2019 school year.

d. Chapter 74 and Non-Chapter 74 Programs to be Discontinued

No Chapter 74 or Non-Chapter 74 programs will be discontinued. All existing programs will continue and expand capacity. All current non-Chapter 74 programs will seek Chapter 74 approval and five new programs will be added as non-Chapter 74 programs.

IV. DESE Chapter 74 Approval Process

a. Overview of New Application Process, Requirements and Due Dates

There is a New Chapter 74 Approval Process that Durfee High School is in the process of following. The steps are as outlined below:

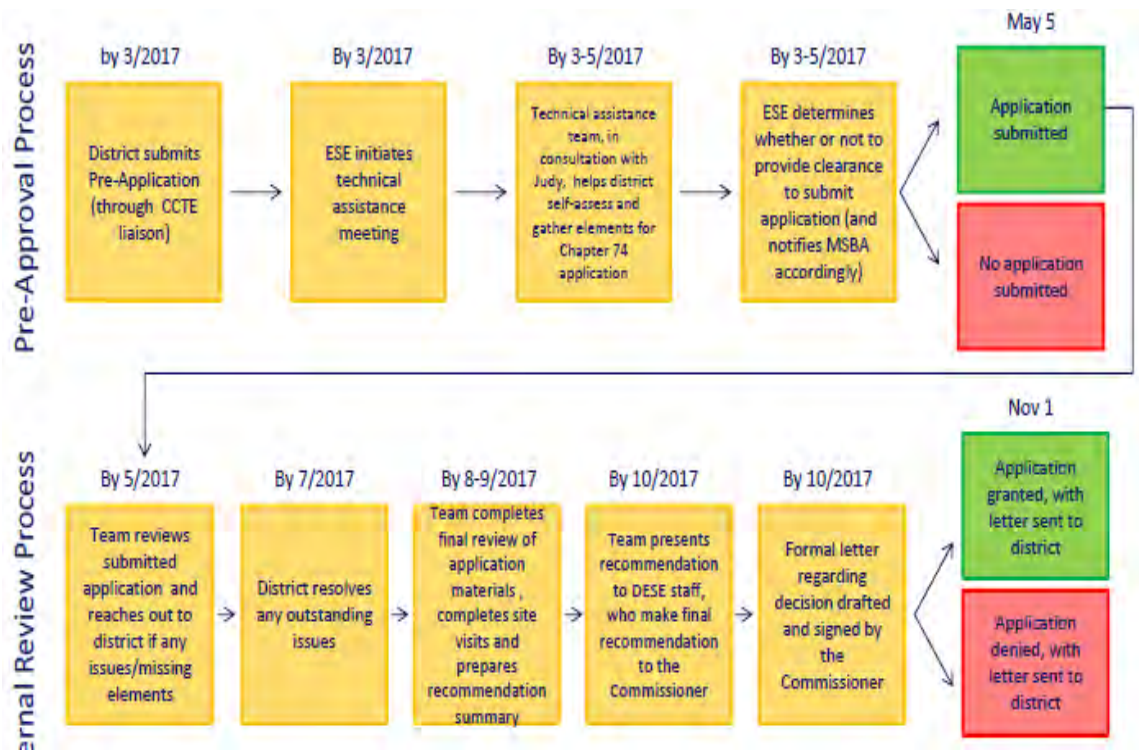
- February 10, 2017 – Letter of Intent Submitted
- Initiate Technical Assistance Meetings prior to submission of Pre-Application
- March 10, 2017- Part A Pre-application to be submitted
- March-May 2017- Technical Assistance Team to help District self-assess and gather elements for Chapter 74 Application
- DESE determines whether or not to provide clearance to submit Application (And notifies MSBA accordingly)
- May 5, 2017- Part B Application submitted

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

- May 2017- Team reviews submitted application and notifies district of any issues/missing elements
- July 2017- District resolves any outstanding issues
- August-September 2017- Team completes final review of application materials. Completes site visits and prepares recommendation summary.
- September 30, 2017 – Cutoff date for submitting all necessary materials to meet requirements of Chapter 74 law, regulations and policies
- October 2017- Team presents recommendation to DESE staff who make final recommendation to the Commissioner.
- October 2017- Formal letter regarding decision drafted and signed by the Commissioner.
- November 1, 2017- Application granted or denied with letter sent to District.

According to the milestones established for the New Chapter 74 Approval Process, BMC Durfee will know which new Chapter 74 Programs seeking approval will receive DESE approval by November 1, 2017. This will allow sufficient time for the disposition of all Chapter 74 Programs to be included in the Schematic Design Submission which is scheduled to be submitted on January 3, 2018.

b. New Chapter 74 Approval Process Flow Graphic



BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

V. Confirmation Statement

a. OPM Confirmation

LeftField confirms that the District understands that this Chapter 74 Programming Submission documents the District's desire to investigate potential changes to existing Chapter 74 Programming as part of its Feasibility Study only and that it does not commit the District or the MSBA to any particular Chapter 74 Program offerings at the BMC Durfee High School project. All local decisions and approvals regarding Chapter 74 Programming offerings will be finalized prior to the District submitting its Preferred Schematic Report to the MSBA.

Formal DESE approval of programs will not be known until November 1, 2017 as outlined in the New Chapter 74 Approval Process. DESE approval will be provided in advance of the scheduled Schematic Design Submission in time for MSBA to determine eligibility of the program spaces. The Schematic design Submission will include DESE's review and acknowledgement of the District's proposed additions and expansions to its current Chapter 74 Program offerings.

The District further understands that, among other things, program area associated with Chapter 74 Programming and total square footage of the BMC Durfee High School Project shall be subject to the approval of the MSBA's Board and that the final approval of a Proposed Project at the BMC Durfee High School Project shall be within the sole discretion of the MSBA's Board of Directors.

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

VI. Appendix

The following documentation is provided:

- 1. OPM Confirmation Letter**
- 2. Letters of Intent Submitted to DESE** (*Submitted on February 10, 2017 Deadline*)
- 3. Labor Market Demand Information**
- 4. Curriculum Subcommittee and Program Advisory Committee Meeting Minutes and Recommendations to the School Committee**
- 5. School Committee Meeting Minutes Recording Vote of Approval of Future BMC Durfee High School Chapter 74 Programming**
(*Link to School Meeting Agenda and Video:*
<http://fallriverschools.org/agendaslocation.cfm>. Meeting Minutes have not been formally approved yet.)
- 6. School Building Committee Meeting Minutes Recording Vote to Approve Submitting Durfee BMC High School Chapter 74 Programming Submission**
(*A quorum of the SBC was present due to weather conditions on the posted date of the vote. There was discussion and no opposition was voiced. A vote will be taken at the next SBC Meeting* <http://fallriverschools.org/agendaslocation.cfm>. Meeting Minutes have not been formally approved yet.)
- 7. Current Career/Vocational Technical Education Program Offerings at BMC Durfee High School**

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

1. OPM Confirmation Letter



February 24, 2017

Ms. Sarah Blache-Schwartz
Senior Project Coordinator
Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

Re: B.M.C. Durfee High School Project
Chapter 74 Programming Submission

Dear Sarah:

LeftField confirms that the District understands that this Chapter 74 Programming Submission documents the District's existing Chapter 74 Programs and the District's desire to investigate potential changes to the existing Chapter 74 Programming as part of its Feasibility Study and that it does not commit the District or the MSBA to any particular Chapter 74 Program offerings at the BMC Durfee High School Project. All local decisions and approvals regarding Chapter 74 Programming offerings will be finalized prior to the District submitting its Preferred Schematic Report to the MSBA.

Formal DESE approval of programs will not be known until November 1, 2017 as outlined in the New Chapter 74 Approval Process. The District's Letters of Intent to DESE are included in the Appendix of the Chapter 74 Programming Submission. DESE approval will be provided in advance of the scheduled Schematic Design Submission in time to determine eligibility of program spaces. The Schematic Design Submission will include DESE's review and acknowledgement of the District's proposed additions and expansions to its current Chapter 74 Program offerings.

The District further understands that, among other things, program area associated with Chapter 74 Programming and total square footage of the BMC Durfee High School Project shall be subject to the approval of the MSBA's Board and that the final approval of a Proposed Project at the BMC Durfee High School Project shall be within the sole discretion of the MSBA's Board of Directors.

Sincerely,

Lynn Stapleton, AIA, LEED AP B D + C

Cc: Chris Alles, MSBA Senior Project Manager
Mayor Jasiel F. Correia II, City of Fall River
Matthew Malone, Ed. D., Superintendent of Fall River Public Schools
Chris Gallagher, City of Fall River Director of Buildings and Grounds
Ken Pacheco, Fall River Public Schools Chief of Operations
Scott Dunlap, Troy Randall, Ai3 Architects
Adam Keane, LeftField, LLC

main: 617-737-6400 fax: 617-217-2001
225 franklin street, 26th floor, boston, ma 02110

owner project manager
owner representative construction audits
cost forecasting **capital budgeting**

BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

2. Letters of Intent Submitted to DESE

Superintendent
Dr. Matthew Malone

Principal
Maria Pontes

Director of Operations &
Student Supports
Melissa Fogarty



Vice Principals
Dr. Aimee Bronhard
Taylor Brown
Andrew Rebello
Dr. Jessica Stephens

Director of Guidance
Andrew Woodward

B. M. C. Durfee High School of Fall River

360 ELSBREE STREET • FALL RIVER, MASSACHUSETTS 02720 • TELEPHONE (508) 675-8100

Fax: (508) 675-8186

February 10, 2017

Mr. Keith Westrich
Associate Commissioner for College, Career, and Technical Education
Massachusetts Department of Elementary and Secondary Education
75 Pleasant Street
Malden, MA 02148

Dear Mr. Westrich:

I am writing to inform you that the Fall River School District intends to apply for state approval for a new Chapter 74 vocational technical program in **Engineering Technology**, CIP Code **150000**. If approved, we would like to open this program to student enrollment for the 2017-18 school year. This program is currently operating as a non-Chapter 74 offering. This program, if approved, will not replace a Chapter 74 program already in operation.

I understand that your receipt of this letter will initiate assistance from the Office for College, Career, and Technical Education in advance of our submission of Parts A and B of our new program application. I also understand that permission to submit Part B is contingent upon ESE's approval of our Part A submission. Lastly, I understand that this letter of intent to apply in no way binds the Fall River School District to submitting an application, but also that our intent to apply will expire should we not submit a Part A application by March 10, 2017.

Sincerely,

Dr. Matthew Malone
Superintendent of Schools

Copy: Maria Pontes - Principal
Raymond Medeiros – CTE Director
Maura Russell - OCCTE Liaison

Superintendent
Dr. Matthew Malone

Principal
Maria Pontes

Director of Operations &
Student Supports
Melissa Fogarty



Vice Principals
Dr. Aimee Bronhard
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Fax: (508) 675-8186

February 10, 2017

Mr. Keith Westrich
Associate Commissioner for College, Career, and Technical Education
Massachusetts Department of Elementary and Secondary Education
75 Pleasant Street
Malden, MA 02148

Dear Mr. Westrich:

I am writing to inform you that the Fall River School District intends to apply for state approval for a new Chapter 74 vocational technical program in **Radio & Television Broadcasting**, CIP Code **090701**. If approved, we would like to open this program to student enrollment for the 2017-18 school year. This program is currently operating as a non-Chapter 74 offering. This program, if approved, will not replace a Chapter 74 program already in operation.

I understand that your receipt of this letter will initiate assistance from the Office for College, Career, and Technical Education in advance of our submission of Parts A and B of our new program application. I also understand that permission to submit Part B is contingent upon ESE's approval of our Part A submission. Lastly, I understand that this letter of intent to apply in no way binds the Fall River School District to submitting an application, but also that our intent to apply will expire should we not submit a Part A application by March 10, 2017.

Sincerely,

Dr. Matthew Malone
Superintendent of Schools

Copy: Maria Pontes - Principal
Raymond Medeiros – CTE Director
Maura Russell - OCCTE Liaison

Superintendent
Dr. Matthew Malone

Principal
Maria Pontes

Director of Operations &
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Melissa Fogarty



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Fax: (508) 675-8186

February 10, 2017

Mr. Keith Westrich
Associate Commissioner for College, Career, and Technical Education
Massachusetts Department of Elementary and Secondary Education
75 Pleasant Street
Malden, MA 02148

Dear Mr. Westrich:

I am writing to inform you that the Fall River School District intends to apply for state approval for a new Chapter 74 vocational technical program in **Marketing**, CIP Code **190203**. If approved, we would like to open this program to student enrollment for the 2017-18 school year. This program is **not** currently operating as a non-Chapter 74 offering. This program, if approved, will not replace a Chapter 74 program already in operation.

I understand that your receipt of this letter will initiate assistance from the Office for College, Career, and Technical Education in advance of our submission of Parts A and B of our new program application. I also understand that permission to submit Part B is contingent upon ESE's approval of our Part A submission. Lastly, I understand that this letter of intent to apply in no way binds the Fall River School District to submitting an application, but also that our intent to apply will expire should we not submit a Part A application by March 10, 2017.

Sincerely,

Dr. Matthew Malone
Superintendent of Schools

Copy: Maria Pontes - Principal
Raymond Medeiros – CTE Director
Maura Russell - OCCTE Liaison

3. Labor Market Demand Information

Industry Projections for Massachusetts

Clicking on the link in the NAICS code column will open a page with an industry description and the occupations which employ people in the industry. [Projection Table Definitions and Notes](#)

[CSV of this data](#)

NAICS Code	Industry Title	Employment		Change		2015 Mean Annual OES Wage
		2014	2024	Net	Percent	
000000	Total All Industries	3,570,423	3,775,176	204,753	5.7 %	\$59,010
220000	Utilities	10,719	11,332	613	5.7 %	\$81,560
221000	Utilities	10,719	11,332	613	5.7 %	\$81,560
230000	Construction	129,066	135,946	6,880	5.3 %	\$63,720
236000	Construction of Buildings	27,176	29,044	1,868	6.9 %	\$68,460
237000	Heavy and Civil Engineering Construction	12,766	13,300	534	4.2 %	\$68,010
238000	Specialty Trade Contractors	89,124	93,602	4,478	5.0 %	\$61,620
310000	Manufacturing	250,481	239,441	-11,040	-4.4 %	\$61,430
311000	Food Manufacturing	25,531	26,357	826	3.2 %	\$39,200
312000	Beverage and Tobacco Product Manufacturing	3,130	3,185	55	1.8 %	\$48,560
313000	Textile Mills	3,344	3,334	-10	-0.3 %	\$51,540
314000	Textile Product Mills	2,035	1,525	-510	-25.1 %	\$37,030
315000	Apparel Manufacturing	2,378	2,048	-330	-13.9 %	\$36,140
316000	Leather and Allied Product Manufacturing	1,685	1,613	-72	-4.3 %	\$56,930
321000	Wood Product Manufacturing	2,416	2,651	235	9.7 %	\$45,430
322000	Paper Manufacturing	8,222	8,098	-124	-1.5 %	\$50,430
323000	Printing and Related Support Activities	11,286	10,328	-958	-8.5 %	\$51,520
325000	Chemical Manufacturing	17,356	17,611	255	1.5 %	\$68,270
326000	Plastics and Rubber Products Manufacturing	12,376	11,945	-431	-3.5 %	\$48,850
327000	Nonmetallic Mineral Product Manufacturing	5,551	5,354	-197	-3.5 %	\$47,040
331000	Primary Metal Manufacturing	3,167	2,849	-318	-10.0 %	\$52,990
332000	Fabricated Metal Product Manufacturing	32,690	32,553	-137	-0.4 %	\$55,360
333000	Machinery Manufacturing	17,011	14,757	-2,254	-13.3 %	\$63,700
334000	Computer and Electronic Product Manufacturing	56,605	51,180	-5,425	-9.6 %	\$81,930
335000	Electrical Equipment, Appliance, and	8,701	8,458	-243	-2.8 %	\$61,480

	Component Manufacturing					
<u>336000</u>	Transportation Equipment Manufacturing	12,383	12,536	153	1.2 %	\$77,570
<u>337000</u>	Furniture and Related Product Manufacturing	4,052	3,979	-73	-1.8 %	\$50,020
<u>339000</u>	Miscellaneous Manufacturing	19,736	18,217	-1,519	-7.7 %	\$61,980
<u>420000</u>	Wholesale Trade	124,081	126,158	2,077	1.7 %	\$66,220
<u>423000</u>	Merchant Wholesalers, Durable Goods	53,956	53,094	-862	-1.6 %	\$67,180
<u>424000</u>	Merchant Wholesalers, Nondurable Goods	41,774	43,124	1,350	3.2 %	\$56,830
<u>425000</u>	Wholesale Electronic Markets and Agents and Brokers	28,351	29,940	1,589	5.6 %	\$78,470
<u>440000</u>	Retail Trade	349,829	357,510	7,681	2.2 %	\$33,870
<u>441000</u>	Motor Vehicle and Parts Dealers	35,834	37,576	1,742	4.9 %	\$47,590
<u>442000</u>	Furniture and Home Furnishings Stores	9,809	10,054	245	2.5 %	\$37,870
<u>443000</u>	Electronics and Appliance Stores	8,786	8,495	-291	-3.3 %	\$36,040
<u>444000</u>	Building Material and Garden Equipment and Supplies Dealers	25,489	25,760	271	1.1 %	\$37,450
<u>445000</u>	Food and Beverage Stores	98,723	101,947	3,224	3.3 %	\$29,390
<u>446000</u>	Health and Personal Care Stores	26,875	27,470	595	2.2 %	\$42,570
<u>447000</u>	Gasoline Stations	12,291	12,773	482	3.9 %	\$27,900
<u>448000</u>	Clothing and Clothing Accessories Stores	33,865	33,142	-723	-2.1 %	\$29,230
<u>451000</u>	Sporting Goods, Hobby, Book, and Music Stores	15,310	14,158	-1,152	-7.5 %	\$28,530
<u>452000</u>	General Merchandise Stores	50,939	53,170	2,231	4.4 %	\$27,630
<u>453000</u>	Miscellaneous Store Retailers	18,376	18,386	10	0.1 %	\$30,060
<u>454000</u>	Nonstore Retailers	13,532	14,579	1,047	7.7 %	\$53,580
<u>480000</u>	Transportation and Warehousing	79,302	83,075	3,773	4.8 %	\$44,710
<u>481000</u>	Air Transportation	7,451	7,576	125	1.7 %	\$49,620
<u>484000</u>	Truck Transportation	15,620	16,403	783	5.0 %	\$48,640
<u>485000</u>	Transit and Ground Passenger Transportation	22,341	23,631	1,290	5.8 %	\$34,620
<u>487000</u>	Scenic and Sightseeing Transportation	1,356	1,448	92	6.8 %	\$32,420
<u>488000</u>	Support Activities for Transportation	7,543	8,253	710	9.4 %	\$47,470
<u>493000</u>	Warehousing and Storage	9,091	9,271	180	2.0 %	\$42,360
<u>510000</u>	Information	86,156	88,729	2,573	3.0 %	\$87,520
<u>511000</u>	Publishing Industries (except Internet)	41,014	41,992	978	2.4 %	\$99,030
<u>512000</u>	Motion Picture and Sound Recording Industries	5,561	5,889	328	5.9 %	\$44,270
<u>515000</u>	Broadcasting (except Internet)	5,121	5,313	192	3.7 %	\$68,910
<u>517000</u>	Telecommunications	17,807	17,426	-381	-2.1 %	\$72,420
<u>518000</u>	Data Processing, Hosting and Related Services	6,896	7,402	506	7.3 %	\$88,320

<u>519000</u>	Other Information Services	9,757	10,707	950	9.7 %	\$97,870
<u>520000</u>	Finance and Insurance	165,673	173,485	7,812	4.7 %	\$84,940
<u>522000</u>	Credit Intermediation and Related Activities	55,607	57,409	1,802	3.2 %	\$72,320
<u>523000</u>	Securities, Commodity Contracts, and Other Financial Investm	44,169	46,745	2,576	5.8 %	\$109,830
<u>524000</u>	Insurance Carriers and Related Activities	64,815	68,131	3,316	5.1 %	\$78,800
<u>530000</u>	Real Estate and Rental and Leasing	43,044	44,525	1,481	3.4 %	\$58,370
<u>531000</u>	Real Estate	31,731	32,778	1,047	3.3 %	\$62,230
<u>532000</u>	Rental and Leasing Services	10,626	11,015	389	3.7 %	\$45,360
<u>540000</u>	Professional, Scientific, and Technical Services	284,014	306,240	22,226	7.8 %	\$93,870
<u>541000</u>	Professional, Scientific, and Technical Services	284,014	306,240	22,226	7.8 %	\$93,870
<u>550000</u>	Management of Companies and Enterprises	63,502	65,824	2,322	3.7 %	\$86,160
<u>551000</u>	Management of Companies and Enterprises	63,502	65,824	2,322	3.7 %	\$86,160
<u>560000</u>	Administrative and Support and Waste Management and Remediat	172,263	181,901	9,638	5.6 %	\$43,710
<u>561000</u>	Administrative and Support Services	161,385	170,443	9,058	5.6 %	\$43,120
<u>562000</u>	Waste Management and Remediation Service	10,878	11,458	580	5.3 %	\$52,640
<u>610000</u>	Educational Services	346,138	367,946	21,808	6.3 %	\$65,330
<u>611000</u>	Educational Services	346,138	367,946	21,808	6.3 %	\$65,330
<u>620000</u>	Health Care and Social Assistance	586,314	678,196	91,882	15.7 %	\$60,090
<u>621000</u>	Ambulatory Health Care Services	171,033	212,628	41,595	24.3 %	\$71,240
<u>622000</u>	Hospitals	193,791	217,370	23,579	12.2 %	\$71,530
<u>623000</u>	Nursing and Residential Care Facilities	102,314	109,817	7,503	7.3 %	\$39,420
<u>624000</u>	Social Assistance	119,176	138,381	19,205	16.1 %	\$38,890
<u>710000</u>	Arts, Entertainment, and Recreation	54,430	57,554	3,124	5.7 %	\$40,090
<u>711000</u>	Performing Arts, Spectator Sports, and Related Industries	11,371	12,006	635	5.6 %	\$48,070
<u>712000</u>	Museums, Historical Sites, and Similar Institution	5,720	5,899	179	3.1 %	\$42,660
<u>713000</u>	Amusement, Gambling, and Recreation Industries	37,339	39,649	2,310	6.2 %	\$37,090
<u>720000</u>	Accommodation and Food Services	288,734	305,248	16,514	5.7 %	\$28,620
<u>721000</u>	Accommodation, including Hotels and Motels	34,270	36,405	2,135	6.2 %	\$36,690
<u>722000</u>	Food Services and Drinking Places	254,464	268,843	14,379	5.7 %	\$27,550
<u>810000</u>	Other Services (except Government)	114,176	120,854	6,678	5.8 %	\$42,650
<u>811000</u>	Repair and Maintenance	26,164	27,185	1,021	3.9 %	\$46,220

<u>812000</u>	Personal and Laundry Services	40,775	43,421	2,646	6.5 %	\$34,630
813000	Religious, Grantmaking, Civic, Professional, and Similar Org	40,321	42,836	2,515	6.2 %	\$48,550

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Fastest Growing Occupations in Massachusetts

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SOC Code	Title	Employment		Change		Annual Average Openings			Education Level	2015 Mean Annual OES Wage
		2014	2024	Level	Annual Percent	Total	Growth	Replacements		
311011	Home Health Aides	22,749	31,287	8,538	3.24 %	1,368	854	514	Less than high school	\$28,670
152041	Statisticians	2,412	3,249	837	3.02 %	126	84	42	Master's degree	\$83,490
273091	Interpreters and Translators	2,326	3,066	740	2.80 %	111	74	37	Bachelor's degree	\$59,090
291171	Nurse Practitioners	5,250	6,799	1,549	2.62 %	279	155	124	Information Not Available	\$112,860
312021	Physical Therapist Assistants	2,295	2,968	673	2.60 %	133	67	66	Associate's degree	\$57,290
152031	Operations Research Analysts	3,219	4,162	943	2.60 %	151	94	57	Bachelor's degree	\$82,050
312022	Physical Therapist Aides	994	1,285	291	2.60 %	58	29	29	High school diploma or equivalent	\$30,340
533011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	825	1,062	237	2.56 %	38	24	14	High school diploma or equivalent	\$31,380
151111	Computer and Information Research Scientists	822	1,039	217	2.37 %	33	22	11	Doctoral or professional degree	\$122,130
291123	Physical Therapists	7,676	9,640	1,964	2.30 %	402	196	206	Doctoral or professional degree	\$83,000
292032	Diagnostic Medical Sonographers	1,687	2,111	424	2.27 %	74	42	32	Associate's degree	\$81,370
399021	Personal Care Aides	33,580	41,886	8,306	2.23 %	1,103	831	272	Less than high school	\$27,140
292031	Cardiovascular	1,513	1,877	364	2.18 %	65	36	29	Associate's	\$71,740

	Technologists and Technicians								degree	
<u>291071</u>	Physician Assistants	2,670	3,312	642	2.18 %	124	64	60	Master's degree	\$105,060
<u>291181</u>	Audiologists	456	565	109	2.17 %	22	11	11	Doctoral or professional degree	\$77,820
<u>312011</u>	Occupational Therapy Assistants	1,224	1,510	286	2.12 %	64	29	35	Associate's degree	\$55,410
<u>172031</u>	Biomedical Engineers	2,265	2,769	504	2.03 %	110	50	60	Bachelor's degree	\$93,020
<u>292041</u>	Emergency Medical Technicians and Paramedics	6,750	8,250	1,500	2.03 %	261	150	111	Postsecondary non-degree award	\$39,650
<u>151134</u>	Web Developers	4,651	5,675	1,024	2.01 %	162	102	60	Information Not Available	\$78,470
<u>251112</u>	Law Teachers, Postsecondary	977	1,184	207	1.94 %	38	21	17	Doctoral or professional degree	\$147,370
<u>251111</u>	Criminal Justice and Law Enforcement Teachers, Postsecondary	349	422	73	1.92 %	13	7	6	Doctoral or professional degree	\$68,660
<u>292099</u>	Health Technologists and Technicians, All Other	2,088	2,524	436	1.91 %	65	44	21	Information Not Available	\$54,350
<u>319097</u>	Phlebotomists	2,634	3,164	530	1.85 %	108	53	55	Information Not Available	\$38,240
<u>211013</u>	Marriage and Family Therapists	461	552	91	1.82 %	19	9	10	Master's degree	\$45,290
<u>291161</u>	Nurse Midwives	331	396	65	1.81 %	14	6	8	Information Not Available	\$108,710
<u>499041</u>	Industrial Machinery Mechanics	3,913	4,678	765	1.80 %	178	76	102	High school diploma or equivalent	\$56,580
<u>211011</u>	Substance Abuse and Behavioral Disorder Counselors	3,989	4,767	778	1.80 %	161	78	83	High school diploma or equivalent	\$42,630
<u>251072</u>	Nursing Instructors and Teachers, Postsecondary	1,130	1,350	220	1.79 %	42	22	20	Doctoral or professional degree	\$87,710
<u>193039</u>	Psychologists, All Other	941	1,122	181	1.77 %	38	18	20	Master's degree	\$83,670
<u>291041</u>	Optometrists	1,094	1,303	209	1.76 %	60	21	39	Doctoral or professional	\$115,790

									degree	
<u>212011</u>	Clergy	757	900	143	1.75 %	30	14	16	Bachelor's degree	\$48,370
<u>312012</u>	Occupational Therapy Aides	682	810	128	1.73 %	33	13	20	High school diploma or equivalent	\$33,150
<u>251071</u>	Health Specialties Teachers, Postsecondary	4,848	5,752	904	1.72 %	176	90	86	Doctoral or professional degree	\$122,540
<u>193031</u>	Clinical, Counseling, and School Psychologists	7,237	8,570	1,333	1.71 %	288	133	155	Doctoral or professional degree	\$77,580
<u>291122</u>	Occupational Therapists	4,691	5,554	863	1.70 %	177	86	91	Master's degree	\$83,190
<u>319011</u>	Massage Therapists	2,867	3,385	518	1.67 %	73	52	21	Postsecondary non-degree award	\$51,650
<u>514012</u>	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	688	810	122	1.65 %	33	12	21	High school diploma or equivalent	\$54,430
<u>292081</u>	Opticians, Dispensing	1,821	2,143	322	1.64 %	80	32	48	High school diploma or equivalent	\$51,850
<u>132052</u>	Personal Financial Advisors	7,827	9,208	1,381	1.64 %	334	138	196	Bachelor's degree	\$130,200
<u>151121</u>	Computer Systems Analysts	16,530	19,428	2,898	1.63 %	503	290	213	Bachelor's degree	\$93,010
<u>151122</u>	Information Security Analysts	2,677	3,144	467	1.62 %	81	47	34	Information Not Available	\$94,190
<u>152011</u>	Actuaries	979	1,143	164	1.56 %	45	16	29	Bachelor's degree	\$111,780
<u>274032</u>	Film and Video Editors	592	687	95	1.50 %	15	10	5	Bachelor's degree	\$50,100
<u>291031</u>	Dietitians and Nutritionists	1,999	2,319	320	1.50 %	47	32	15	Bachelor's degree	\$61,120
<u>251022</u>	Mathematical Science Teachers, Postsecondary	1,281	1,486	205	1.50 %	43	20	23	Doctoral or professional degree	\$89,700
<u>132071</u>	Credit Counselors	1,170	1,357	187	1.49 %	39	19	20	Bachelor's degree	\$66,010
<u>514011</u>	Computer-Controlled Machine Tool	2,324	2,691	367	1.48 %	108	37	71	High school diploma or equivalent	\$44,560

	Operators, Metal and Plastic									
292057	Ophthalmic Medical Technicians	1,254	1,452	198	1.48 %	32	20	12	Information Not Available	\$41,960
291141	Registered Nurses	81,259	94,080	12,821	1.48 %	3,199	1,282	1,917	Information Not Available	\$88,650
291199	Health Diagnosing and Treating Practitioners, All Other	671	776	105	1.46 %	26	10	16	Master's degree	\$80,770

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Most Job openings for Massachusetts

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SOC Code	Title	Employment		Change		Annual Average Openings			Education Level	2015 Mean Annual OES Wage
		2014	2024	Level	Annual Percent	Total	Growth	Replacements		
412031	Retail Salespersons	115,490	120,036	4,546	0.39 %	4,458	455	4,003	Less than high school	\$27,110
291141	Registered Nurses	81,259	94,080	12,821	1.48 %	3,199	1,282	1,917	Information Not Available	\$88,650
353031	Waiters and Waitresses	58,623	60,273	1,650	0.28 %	2,986	165	2,821	Less than high school	\$26,850
412011	Cashiers	68,873	69,356	483	0.07 %	2,978	48	2,930	Less than high school	\$23,070
353021	Combined Food Preparation and Serving Workers, Including Fast Food	49,320	54,492	5,172	1.00 %	2,111	517	1,594	Less than high school	\$22,390
353022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	31,555	33,347	1,792	0.55 %	2,076	179	1,897	Less than high school	\$20,760
111021	General and Operations Managers	62,022	65,298	3,276	0.52 %	1,898	328	1,570	Associate's degree	\$131,810
434051	Customer Service Representatives	54,108	57,552	3,444	0.62 %	1,676	344	1,332	High school diploma or equivalent	\$40,800
435081	Stock Clerks and Order Fillers	45,124	46,871	1,747	0.38 %	1,607	175	1,432	Less than high school	\$27,910
439061	Office Clerks, General	63,199	63,710	511	0.08 %	1,414	51	1,363	High school diploma or equivalent	\$36,210
311014	Nursing Assistants	42,356	46,534	4,178	0.95 %	1,375	418	957	Information Not Available	\$30,130

<u>311011</u>	Home Health Aides	22,749	31,287	8,538	3.24 %	1,368	854	514	Less than high school	\$28,670
<u>132011</u>	Accountants and Auditors	39,031	42,100	3,069	0.76 %	1,349	307	1,042	Bachelor's degree	\$82,540
<u>372011</u>	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	55,450	57,832	2,382	0.42 %	1,339	238	1,101	Less than high school	\$33,000
<u>537062</u>	Laborers and Freight, Stock, and Material Movers, Hand	33,174	34,596	1,422	0.42 %	1,129	142	987	Less than high school	\$30,870
<u>259041</u>	Teacher Assistants	35,540	38,165	2,625	0.72 %	1,114	262	852	High school diploma or equivalent	\$30,400
<u>399021</u>	Personal Care Aides	33,580	41,886	8,306	2.23 %	1,103	831	272	Less than high school	\$27,140
<u>352014</u>	Cooks, Restaurant	24,413	27,869	3,456	1.33 %	992	346	646	Less than high school	\$28,230
<u>411011</u>	First-Line Supervisors of Retail Sales Workers	36,434	37,138	704	0.19 %	884	70	814	High school diploma or equivalent	\$46,050
<u>399011</u>	Childcare Workers	22,049	24,238	2,189	0.95 %	870	219	651	High school diploma or equivalent	\$26,330
<u>353011</u>	Bartenders	17,920	19,775	1,855	0.99 %	859	186	673	Less than high school	\$26,550
<u>351012</u>	First-Line Supervisors of Food Preparation and Serving Workers	20,585	22,572	1,987	0.93 %	810	199	611	High school diploma or equivalent	\$37,220
<u>151132</u>	Software Developers, Applications	27,571	31,626	4,055	1.38 %	800	406	394	Bachelor's degree	\$109,430
<u>372012</u>	Maids and Housekeeping Cleaners	24,979	26,918	1,939	0.75 %	790	194	596	Less than high school	\$27,920
<u>431011</u>	First-Line Supervisors of Office and Administrative Support Workers	36,341	38,632	2,291	0.61 %	778	229	549	High school diploma or equivalent	\$61,690

<u>252011</u>	Preschool Teachers, Except Special Education	17,301	19,706	2,405	1.31 %	746	240	506	Associate's degree	\$36,090
<u>131111</u>	Management Analysts	26,231	29,989	3,758	1.35 %	740	376	364	Bachelor's degree	\$101,950
<u>499071</u>	Maintenance and Repair Workers, General	22,916	24,197	1,281	0.55 %	728	128	600	High school diploma or equivalent	\$44,490
<u>359031</u>	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	9,536	9,939	403	0.41 %	717	40	677	Less than high school	\$23,800
<u>252021</u>	Elementary School Teachers, Except Special Education	25,894	27,302	1,408	0.53 %	714	141	573	Bachelor's degree	\$71,390
<u>113031</u>	Financial Managers	24,264	25,533	1,269	0.51 %	702	127	575	Bachelor's degree	\$132,100
<u>395012</u>	Hairdressers, Hairstylists, and Cosmetologists	18,732	20,742	2,010	1.02 %	683	201	482	Postsecondary non-degree award	\$35,370
<u>352021</u>	Food Preparation Workers	20,387	21,508	1,121	0.54 %	680	112	568	Less than high school	\$25,220
<u>252031</u>	Secondary School Teachers, Except Special and Career/Technical Education	23,191	24,449	1,258	0.53 %	676	126	550	Bachelor's degree	\$72,280
<u>151133</u>	Software Developers, Systems Software	27,705	30,452	2,747	0.95 %	671	275	396	Bachelor's degree	\$113,410
<u>414012</u>	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	27,549	28,405	856	0.31 %	653	86	567	High school diploma or equivalent	\$79,320
<u>359021</u>	Dishwashers	14,980	14,323	-657	-0.45 %	647	0	647	Less than high school	\$22,710
<u>373011</u>	Landscaping and Groundskeeping Workers	28,949	30,103	1,154	0.39 %	637	115	522	Less than high school	\$34,220

<u>434171</u>	Receptionists and Information Clerks	19,907	20,731	824	0.41 %	618	82	536	High school diploma or equivalent	\$31,590
<u>211093</u>	Social and Human Service Assistants	19,906	22,139	2,233	1.07 %	613	223	390	High school diploma or equivalent	\$34,880
<u>413099</u>	Sales Representatives, Services, All Other	20,478	22,007	1,529	0.72 %	589	153	436	High school diploma or equivalent	\$78,380
<u>292061</u>	Licensed Practical and Licensed Vocational Nurses	16,459	17,605	1,146	0.68 %	583	115	468	Postsecondary non-degree award	\$54,160
<u>472061</u>	Construction Laborers	23,067	24,286	1,219	0.52 %	582	122	460	Less than high school	\$52,120
<u>319092</u>	Medical Assistants	16,275	18,686	2,411	1.39 %	580	241	339	High school diploma or equivalent	\$38,090
<u>333051</u>	Police and Sheriff's Patrol Officers	16,583	16,779	196	0.12 %	567	20	547	High school diploma or equivalent	\$64,250
<u>436014</u>	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	45,897	46,436	539	0.12 %	538	54	484	High school diploma or equivalent	\$43,570
<u>436013</u>	Medical Secretaries	21,372	24,444	3,072	1.35 %	532	307	225	High school diploma or equivalent	\$41,090
<u>533032</u>	Heavy and Tractor-Trailer Truck Drivers	24,854	25,930	1,076	0.42 %	531	108	423	High school diploma or equivalent	\$49,090
<u>359011</u>	Dining Room and Cafeteria Attendants and Bartender Helpers	9,573	10,065	492	0.50 %	527	49	478	Less than high school	\$23,590
<u>151121</u>	Computer Systems Analysts	16,530	19,428	2,898	1.63 %	503	290	213	Bachelor's degree	\$93,010
<u>533033</u>	Light Truck or Delivery Services Drivers	23,697	24,665	968	0.40 %	500	97	403	High school diploma or equivalent	\$36,070
<u>131161</u>	Market Research Analysts and	17,950	20,740	2,790	1.46 %	493	279	214	Bachelor's degree	\$76,140

	Marketing Specialists									
<u>132051</u>	Financial Analysts	17,228	18,564	1,336	0.75 %	488	134	354	Bachelor's degree	\$105,130
<u>493023</u>	Automotive Service Technicians and Mechanics	16,872	17,062	190	0.11 %	471	19	452	High school diploma or equivalent	\$45,940
<u>252022</u>	Middle School Teachers, Except Special and Career/Technical Education	17,017	17,944	927	0.53 %	469	93	376	Bachelor's degree	\$71,090
<u>119111</u>	Medical and Health Services Managers	11,320	12,951	1,631	1.36 %	449	163	286	Bachelor's degree	\$112,050
<u>211022</u>	Healthcare Social Workers	11,990	13,451	1,461	1.16 %	435	146	289	Master's degree	\$53,240
<u>433071</u>	Tellers	11,022	10,283	-739	-0.69 %	431	0	431	High school diploma or equivalent	\$30,750
<u>291069</u>	Physicians and Surgeons, All Other	10,898	12,269	1,371	1.19 %	430	137	293	Doctoral or professional degree	\$161,730
<u>433031</u>	Bookkeeping, Accounting, and Auditing Clerks	41,475	37,244	-4,231	-1.07 %	407	0	407	High school diploma or equivalent	\$44,260
<u>119199</u>	Managers, All Other	14,924	15,668	744	0.49 %	403	74	329	High school diploma or equivalent	\$120,690
<u>291123</u>	Physical Therapists	7,676	9,640	1,964	2.30 %	402	196	206	Doctoral or professional degree	\$83,000
<u>512092</u>	Team Assemblers	16,938	17,309	371	0.22 %	401	37	364	High school diploma or equivalent	\$31,330
<u>414011</u>	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	15,193	15,968	775	0.50 %	390	78	312	Bachelor's degree	\$101,420
<u>131071</u>	Human Resources Specialists	13,399	14,025	626	0.46 %	389	63	326	Information Not Available	\$72,410
<u>472111</u>	Electricians	15,703	17,114	1,411	0.86 %	381	141	240	High school	\$64,790

									diploma or equivalent	
<u>119033</u>	Education Administrators, Postsecondary	10,153	10,995	842	0.80 %	379	84	295	Master's degree	\$99,460
<u>112022</u>	Sales Managers	13,710	14,249	539	0.39 %	378	54	324	Bachelor's degree	\$146,380
<u>151151</u>	Computer User Support Specialists	16,645	18,285	1,640	0.94 %	378	164	214	Information Not Available	\$62,270
<u>191042</u>	Medical Scientists, Except Epidemiologists	10,165	10,746	581	0.56 %	373	58	315	Doctoral or professional degree	\$91,700
<u>113021</u>	Computer and Information Systems Managers	15,417	17,284	1,867	1.15 %	369	187	182	Bachelor's degree	\$145,550
<u>537064</u>	Packers and Packagers, Hand	13,735	13,672	-63	-0.05 %	365	0	365	Less than high school	\$24,740
<u>339032</u>	Security Guards	20,953	21,645	692	0.33 %	364	69	295	High school diploma or equivalent	\$30,320
<u>231011</u>	Lawyers	22,100	22,498	398	0.18 %	363	40	323	Doctoral or professional degree	\$152,990
<u>332011</u>	Firefighters	12,014	12,145	131	0.11 %	362	13	349	Postsecondary non-degree award	\$57,610
<u>253021</u>	Self-Enrichment Education Teachers	10,455	12,055	1,600	1.43 %	357	160	197	High school diploma or equivalent	\$45,050
<u>435071</u>	Shipping, Receiving, and Traffic Clerks	16,381	15,908	-473	-0.29 %	356	0	356	High school diploma or equivalent	\$36,200
<u>519111</u>	Packaging and Filling Machine Operators and Tenders	8,566	9,047	481	0.55 %	353	48	305	High school diploma or equivalent	\$27,940
<u>472031</u>	Carpenters	23,512	24,335	823	0.34 %	352	82	270	High school diploma or equivalent	\$58,370
<u>519198</u>	Helpers--Production Workers	10,010	10,086	76	0.08 %	335	8	327	Less than high school	\$26,170
<u>433021</u>	Billing and Posting	11,238	12,224	986	0.84 %	334	99	235	High school	\$41,260

	Clerks								diploma or equivalent	
<u>132052</u>	Personal Financial Advisors	7,827	9,208	1,381	1.64 %	334	138	196	Bachelor's degree	\$130,200
<u>113011</u>	Administrative Services Managers	13,156	14,030	874	0.65 %	333	87	246	High school diploma or equivalent	\$101,400
<u>172141</u>	Mechanical Engineers	9,497	9,774	277	0.29 %	329	28	301	Bachelor's degree	\$91,270
<u>514041</u>	Machinists	8,804	9,525	721	0.79 %	326	72	254	High school diploma or equivalent	\$49,220
<u>211014</u>	Mental Health Counselors	9,127	10,464	1,337	1.38 %	325	134	191	Master's degree	\$43,010
<u>533022</u>	Bus Drivers, School or Special Client	12,588	14,035	1,447	1.09 %	311	145	166	High school diploma or equivalent	\$32,860
<u>119151</u>	Social and Community Service Managers	7,938	8,869	931	1.12 %	303	93	210	Bachelor's degree	\$67,580
<u>399032</u>	Recreation Workers	11,436	12,360	924	0.78 %	303	92	211	Bachelor's degree	\$27,770
<u>393091</u>	Amusement and Recreation Attendants	6,235	6,637	402	0.63 %	301	40	261	Less than high school	\$23,530
<u>211021</u>	Child, Family, and School Social Workers	9,472	10,206	734	0.75 %	301	73	228	Bachelor's degree	\$47,040
<u>112021</u>	Marketing Managers	9,862	10,532	670	0.66 %	300	67	233	Bachelor's degree	\$139,170
<u>131031</u>	Claims Adjusters, Examiners, and Investigators	10,014	10,519	505	0.49 %	298	50	248	High school diploma or equivalent	\$69,120
<u>533041</u>	Taxi Drivers and Chauffeurs	10,148	11,208	1,060	1.00 %	298	106	192	Less than high school	\$26,860
<u>193031</u>	Clinical, Counseling, and School Psychologists	7,237	8,570	1,333	1.71 %	288	133	155	Doctoral or professional degree	\$77,580
<u>399031</u>	Fitness Trainers and Aerobics Instructors	11,015	11,859	844	0.74 %	287	84	203	High school diploma or equivalent	\$43,800
<u>436011</u>	Executive Secretaries and	26,981	24,945	-2,036	-0.78 %	284	0	284	High school diploma or	\$58,020

	Executive Administrative Assistants								equivalent	
<u>413021</u>	Insurance Sales Agents	8,048	8,751	703	0.84 %	281	70	211	High school diploma or equivalent	\$78,160
<u>291171</u>	Nurse Practitioners	5,250	6,799	1,549	2.62 %	279	155	124	Information Not Available	\$112,860
<u>272022</u>	Coaches and Scouts	7,015	7,402	387	0.54 %	276	39	237	High school diploma or equivalent	\$46,280

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STEM Occupation Projections in Massachusetts

Science, Technology, Engineering, and Mathematics occupations as defined by the Bureau of Labor Statistics are listed below. Clicking on the link in the SOC code column will open a page with an occupation description and the industries which employ people in the occupation. [Projection Table Definitions and Notes](#)

[CSV of this data](#)

SOC Code	Title	Employment		Change		Annual Average Openings			Education Level	2015 Mean Annual OES Wage
		2014	2024	Level	Percent	Total	Growth	Replacements		
113021	Computer and Information Systems Managers	15,417	17,284	1,867	1.15 %	369	187	182	Bachelor's degree	\$145,550
119041	Architectural and Engineering Managers	6,490	6,534	44	0.07 %	203	4	199	Bachelor's degree	\$140,210
119111	Medical and Health Services Managers	11,320	12,951	1,631	1.36 %	449	163	286	Bachelor's degree	\$112,050
119121	Natural Sciences Managers	3,091	3,220	129	0.41 %	77	13	64	Bachelor's degree	\$172,110
151111	Computer and Information Research Scientists	822	1,039	217	2.37 %	33	22	11	Doctoral or professional degree	\$122,130
151121	Computer Systems Analysts	16,530	19,428	2,898	1.63 %	503	290	213	Bachelor's degree	\$93,010
151122	Information Security Analysts	2,677	3,144	467	1.62 %	81	47	34	Information Not Available	\$94,190
151131	Computer Programmers	8,996	8,143	-853	-0.99 %	222	0	222	Bachelor's degree	\$95,370
151132	Software Developers, Applications	27,571	31,626	4,055	1.38 %	800	406	394	Bachelor's degree	\$109,430
151133	Software Developers, Systems Software	27,705	30,452	2,747	0.95 %	671	275	396	Bachelor's degree	\$113,410
151134	Web Developers	4,651	5,675	1,024	2.01 %	162	102	60	Information Not Available	\$78,470
151141	Database Administrators	3,803	4,180	377	0.95 %	120	38	82	Bachelor's degree	\$83,380
151142	Network and Computer Systems	9,873	10,511	638	0.63 %	191	64	127	Bachelor's degree	\$86,790

	Administrators									
<u>151143</u>	Computer Network Architects	4,501	4,902	401	0.86 %	98	40	58	Information Not Available	\$118,110
<u>151151</u>	Computer User Support Specialists	16,645	18,285	1,640	0.94 %	378	164	214	Information Not Available	\$62,270
<u>151152</u>	Computer Network Support Specialists	3,544	3,745	201	0.55 %	66	20	46	Information Not Available	\$83,000
<u>151199</u>	Computer Occupations, All Other	4,879	5,238	359	0.71 %	99	36	63	Information Not Available	\$93,740
<u>152011</u>	Actuaries	979	1,143	164	1.56 %	45	16	29	Bachelor's degree	\$111,780
<u>152031</u>	Operations Research Analysts	3,219	4,162	943	2.60 %	151	94	57	Bachelor's degree	\$82,050
<u>152041</u>	Statisticians	2,412	3,249	837	3.02 %	126	84	42	Master's degree	\$83,490
<u>171011</u>	Architects, Except Landscape and Naval	4,385	4,460	75	0.17 %	80	8	72	Bachelor's degree	\$90,430
<u>171012</u>	Landscape Architects	676	682	6	0.09 %	12	1	11	Bachelor's degree	\$86,670
<u>171022</u>	Surveyors	716	667	-49	-0.71 %	22	0	22	Bachelor's degree	\$60,030
<u>172011</u>	Aerospace Engineers	1,244	1,224	-20	-0.16 %	36	0	36	Bachelor's degree	\$110,800
<u>172031</u>	Biomedical Engineers	2,265	2,769	504	2.03 %	110	50	60	Bachelor's degree	\$93,020
<u>172041</u>	Chemical Engineers	875	897	22	0.25 %	26	2	24	Bachelor's degree	\$104,980
<u>172051</u>	Civil Engineers	6,441	6,691	250	0.38 %	215	25	190	Bachelor's degree	\$90,750
<u>172061</u>	Computer Hardware Engineers	3,634	3,816	182	0.49 %	93	18	75	Bachelor's degree	\$113,820
<u>172071</u>	Electrical Engineers	7,795	7,840	45	0.06 %	176	4	172	Bachelor's degree	\$107,820
<u>172072</u>	Electronics Engineers, Except Computer	4,383	4,473	90	0.20 %	106	9	97	Bachelor's degree	\$107,660
<u>172081</u>	Environmental Engineers	3,226	3,469	243	0.73 %	115	24	91	Bachelor's degree	\$86,670
<u>172111</u>	Health and Safety Engineers, Except Mining Safety	556	573	17	0.30 %	18	2	16	Bachelor's degree	\$92,730

	Engineers and Inspectors										
<u>172112</u>	Industrial Engineers	7,211	7,407	196	0.27 %	232	20	212	Bachelor's degree	\$95,880	
<u>172131</u>	Materials Engineers	1,371	1,388	17	0.12 %	50	2	48	Bachelor's degree	\$91,920	
<u>172141</u>	Mechanical Engineers	9,497	9,774	277	0.29 %	329	28	301	Bachelor's degree	\$91,270	
<u>172199</u>	Engineers, All Other	2,037	2,139	102	0.49 %	51	10	41	Bachelor's degree	\$109,980	
<u>173011</u>	Architectural and Civil Drafters	2,558	2,359	-199	-0.81 %	30	0	30	Associate's degree	\$57,020	
<u>173012</u>	Electrical and Electronics Drafters	721	734	13	0.18 %	9	1	8	Associate's degree	\$67,060	
<u>173013</u>	Mechanical Drafters	1,417	1,298	-119	-0.87 %	17	0	17	Associate's degree	\$64,780	
<u>173022</u>	Civil Engineering Technicians	799	797	-2	-0.03 %	20	0	20	Associate's degree	\$60,300	
<u>173023</u>	Electrical and Electronics Engineering Technicians	5,746	5,562	-184	-0.32 %	140	0	140	Associate's degree	\$64,440	
<u>173024</u>	Electro-Mechanical Technicians	1,107	1,069	-38	-0.35 %	27	0	27	Associate's degree	\$54,510	
<u>173025</u>	Environmental Engineering Technicians	795	848	53	0.65 %	24	5	19	Associate's degree	\$48,400	
<u>173026</u>	Industrial Engineering Technicians	2,167	2,136	-31	-0.14 %	53	0	53	Associate's degree	\$57,140	
<u>173027</u>	Mechanical Engineering Technicians	2,142	2,135	-7	-0.03 %	52	0	52	Associate's degree	\$56,550	
<u>173029</u>	Engineering Technicians, Except Drafters, All Other	980	971	-9	-0.09 %	24	0	24	Associate's degree	\$79,510	
<u>173031</u>	Surveying and Mapping Technicians	630	559	-71	-1.19 %	7	0	7	High school diploma or equivalent	\$48,840	
<u>191012</u>	Food Scientists and Technologists	248	261	13	0.51 %	10	1	9	Bachelor's degree	\$80,890	
<u>191021</u>	Biochemists and Biophysicists	5,028	5,338	310	0.60 %	165	31	134	Doctoral or professional degree	\$96,350	

<u>191022</u>	Microbiologists	2,050	2,136	86	0.41 %	64	9	55	Bachelor's degree	\$68,470
<u>191023</u>	Zoologists and Wildlife Biologists	318	336	18	0.55 %	10	2	8	Bachelor's degree	\$84,120
<u>191029</u>	Biological Scientists, All Other	1,965	2,072	107	0.53 %	64	11	53	Doctoral or professional degree	\$71,610
<u>191031</u>	Conservation Scientists	507	557	50	0.95 %	27	5	22	Bachelor's degree	\$69,520
<u>191032</u>	Foresters	118	124	6	0.50 %	6	1	5	Bachelor's degree	\$61,370
<u>191041</u>	Epidemiologists	426	466	40	0.90 %	17	4	13	Master's degree	\$81,750
<u>191042</u>	Medical Scientists, Except Epidemiologists	10,165	10,746	581	0.56 %	373	58	315	Doctoral or professional degree	\$91,700
<u>191099</u>	Life Scientists, All Other	775	815	40	0.50 %	28	4	24	Bachelor's degree	\$71,640
<u>192012</u>	Physicists	632	680	48	0.73 %	17	5	12	Doctoral or professional degree	\$95,470
<u>192021</u>	Atmospheric and Space Scientists	446	506	60	1.27 %	14	6	8	Bachelor's degree	\$83,340
<u>192031</u>	Chemists	3,583	3,763	180	0.49 %	97	18	79	Bachelor's degree	\$79,300
<u>192032</u>	Materials Scientists	534	545	11	0.20 %	13	1	12	Bachelor's degree	\$82,440
<u>192041</u>	Environmental Scientists and Specialists, Including Health	2,388	2,615	227	0.91 %	97	23	74	Bachelor's degree	\$78,830
<u>192042</u>	Geoscientists, Except Hydrologists and Geographers	206	222	16	0.75 %	8	2	6	Bachelor's degree	\$79,290
<u>192099</u>	Physical Scientists, All Other	310	328	18	0.57 %	5	2	3	Bachelor's degree	\$105,220
<u>193011</u>	Economists	1,167	1,229	62	0.52 %	37	6	31	Bachelor's degree	\$93,610
<u>193022</u>	Survey Researchers	338	363	25	0.72 %	6	2	4	Bachelor's degree	\$57,590
<u>193031</u>	Clinical, Counseling, and School Psychologists	7,237	8,570	1,333	1.71 %	288	133	155	Doctoral or professional degree	\$77,580
<u>193032</u>	Industrial-	357	385	28	0.76 %	11	3	8	Master's	\$93,500

	Organizational Psychologists								degree	
<u>193039</u>	Psychologists, All Other	941	1,122	181	1.77 %	38	18	20	Master's degree	\$83,670
<u>193051</u>	Urban and Regional Planners	1,298	1,320	22	0.17 %	26	2	24	Master's degree	\$75,410
<u>193099</u>	Social Scientists and Related Workers, All Other	802	851	49	0.59 %	15	5	10	Bachelor's degree	\$76,140
<u>194011</u>	Agricultural and Food Science Technicians	177	188	11	0.60 %	7	1	6	Associate's degree	\$43,980
<u>194021</u>	Biological Technicians	4,711	5,068	357	0.73 %	168	36	132	Bachelor's degree	\$50,200
<u>194031</u>	Chemical Technicians	1,972	2,033	61	0.31 %	65	6	59	Associate's degree	\$54,110
<u>194061</u>	Social Science Research Assistants	1,600	1,686	86	0.52 %	76	9	67	Associate's degree	\$53,340
<u>194091</u>	Environmental Science and Protection Technicians, Including Health	797	861	64	0.78 %	39	6	33	Associate's degree	\$48,150
<u>194093</u>	Forest and Conservation Technicians	183	192	9	0.48 %	9	1	8	Associate's degree	\$50,910
<u>194099</u>	Life, Physical, and Social Science Technicians, All Other	1,523	1,650	127	0.80 %	77	13	64	Associate's degree	\$60,690
<u>251021</u>	Computer Science Teachers, Postsecondary	946	1,024	78	0.80 %	25	8	17	Doctoral or professional degree	\$98,120
<u>251022</u>	Mathematical Science Teachers, Postsecondary	1,281	1,486	205	1.50 %	43	20	23	Doctoral or professional degree	\$89,700
<u>251031</u>	Architecture Teachers, Postsecondary	645	703	58	0.86 %	17	6	11	Doctoral or professional degree	\$84,910
<u>251032</u>	Engineering Teachers, Postsecondary	1,412	1,592	180	1.21 %	43	18	25	Doctoral or professional degree	\$119,810
<u>251042</u>	Biological Science Teachers,	2,405	2,770	365	1.42 %	78	36	42	Doctoral or professional	\$100,460

	Postsecondary								degree	
<u>251051</u>	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	180	195	15	0.80 %	5	2	3	Doctoral or professional degree	\$113,630
<u>251052</u>	Chemistry Teachers, Postsecondary	722	830	108	1.40 %	24	11	13	Doctoral or professional degree	\$106,810
<u>251053</u>	Environmental Science Teachers, Postsecondary	196	212	16	0.79 %	6	2	4	Doctoral or professional degree	\$96,070
<u>251054</u>	Physics Teachers, Postsecondary	519	594	75	1.36 %	17	8	9	Doctoral or professional degree	\$115,300
<u>251061</u>	Anthropology and Archeology Teachers, Postsecondary	173	188	15	0.84 %	5	2	3	Doctoral or professional degree	\$112,640
<u>251062</u>	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	334	383	49	1.38 %	11	5	6	Doctoral or professional degree	\$100,680
<u>251063</u>	Economics Teachers, Postsecondary	659	721	62	0.90 %	18	6	12	Doctoral or professional degree	\$132,820
<u>251064</u>	Geography Teachers, Postsecondary	166	178	12	0.70 %	4	1	3	Doctoral or professional degree	\$76,750
<u>251065</u>	Political Science Teachers, Postsecondary	566	619	53	0.90 %	15	5	10	Doctoral or professional degree	\$126,950
<u>251066</u>	Psychology Teachers, Postsecondary	1,373	1,585	212	1.45 %	45	21	24	Doctoral or professional degree	\$102,600
<u>251067</u>	Sociology Teachers, Postsecondary	675	776	101	1.40 %	22	10	12	Doctoral or professional degree	\$82,790
<u>251071</u>	Health Specialties Teachers, Postsecondary	4,848	5,752	904	1.72 %	176	90	86	Doctoral or professional degree	\$122,540
<u>251072</u>	Nursing Instructors and Teachers, Postsecondary	1,130	1,350	220	1.79 %	42	22	20	Doctoral or professional degree	\$87,710
<u>291011</u>	Chiropractors	627	677	50	0.77 %	16	5	11	Doctoral or professional degree	\$91,180

<u>291021</u>	Dentists, General	4,631	5,037	406	0.84 %	135	41	94	Doctoral or professional degree	\$179,390
<u>291022</u>	Oral and Maxillofacial Surgeons	327	353	26	0.77 %	10	3	7	Doctoral or professional degree	\$268,670
<u>291023</u>	Orthodontists	511	556	45	0.85 %	14	4	10	Doctoral or professional degree	\$225,620
<u>291029</u>	Dentists, All Other Specialists	141	158	17	1.14 %	5	2	3	Doctoral or professional degree	\$178,720
<u>291031</u>	Dietitians and Nutritionists	1,999	2,319	320	1.50 %	47	32	15	Bachelor's degree	\$61,120
<u>291041</u>	Optometrists	1,094	1,303	209	1.76 %	60	21	39	Doctoral or professional degree	\$115,790
<u>291051</u>	Pharmacists	6,993	7,172	179	0.25 %	181	18	163	Doctoral or professional degree	\$113,690
<u>291061</u>	Anesthesiologists	1,040	1,178	138	1.25 %	42	14	28	Doctoral or professional degree	\$258,230
<u>291062</u>	Family and General Practitioners	3,594	3,748	154	0.42 %	112	15	97	Doctoral or professional degree	\$212,210
<u>291063</u>	Internists, General	3,570	3,691	121	0.33 %	108	12	96	Doctoral or professional degree	\$230,440
<u>291064</u>	Obstetricians and Gynecologists	448	494	46	0.98 %	17	5	12	Doctoral or professional degree	\$249,510
<u>291066</u>	Psychiatrists	932	1,033	101	1.03 %	35	10	25	Doctoral or professional degree	\$176,640
<u>291067</u>	Surgeons	2,100	2,374	274	1.23 %	83	27	56	Doctoral or professional degree	\$232,760
<u>291069</u>	Physicians and Surgeons, All Other	10,898	12,269	1,371	1.19 %	430	137	293	Doctoral or professional degree	\$161,730
<u>291071</u>	Physician Assistants	2,670	3,312	642	2.18 %	124	64	60	Master's degree	\$105,060
<u>291081</u>	Podiatrists	276	298	22	0.77 %	8	2	6	Doctoral or professional	\$147,230

									degree	
<u>291122</u>	Occupational Therapists	4,691	5,554	863	1.70 %	177	86	91	Master's degree	\$83,190
<u>291123</u>	Physical Therapists	7,676	9,640	1,964	2.30 %	402	196	206	Doctoral or professional degree	\$83,000
<u>291124</u>	Radiation Therapists	574	645	71	1.17 %	20	7	13	Associate's degree	\$89,960
<u>291125</u>	Recreational Therapists	974	1,033	59	0.59 %	29	6	23	Bachelor's degree	\$42,130
<u>291126</u>	Respiratory Therapists	2,498	2,845	347	1.31 %	94	35	59	Associate's degree	\$69,970
<u>291127</u>	Speech-Language Pathologists	3,962	4,542	580	1.38 %	158	58	100	Master's degree	\$81,290
<u>291128</u>	Exercise Physiologists	320	329	9	0.28 %	4	1	3	Master's degree	\$66,090
<u>291129</u>	Therapists, All Other	322	380	58	1.67 %	9	6	3	Information Not Available	\$61,000
<u>291131</u>	Veterinarians	1,884	1,957	73	0.38 %	36	7	29	Doctoral or professional degree	\$112,040
<u>291141</u>	Registered Nurses	81,259	94,080	12,821	1.48 %	3,199	1,282	1,917	Information Not Available	\$88,650
<u>291151</u>	Nurse Anesthetists	816	931	115	1.33 %	31	12	19	Information Not Available	\$167,160
<u>291161</u>	Nurse Midwives	331	396	65	1.81 %	14	6	8	Information Not Available	\$108,710
<u>291171</u>	Nurse Practitioners	5,250	6,799	1,549	2.62 %	279	155	124	Information Not Available	\$112,860
<u>291181</u>	Audiologists	456	565	109	2.17 %	22	11	11	Doctoral or professional degree	\$77,820
<u>291199</u>	Health Diagnosing and Treating Practitioners, All Other	671	776	105	1.46 %	26	10	16	Master's degree	\$80,770
<u>292011</u>	Medical and Clinical Laboratory Technologists	6,367	7,165	798	1.19 %	232	80	152	Bachelor's degree	\$71,690
<u>292012</u>	Medical and Clinical Laboratory Technicians	5,986	6,767	781	1.23 %	221	78	143	Associate's degree	\$42,860
<u>292021</u>	Dental Hygienists	6,263	6,833	570	0.87 %	160	57	103	Associate's degree	\$80,490

<u>292031</u>	Cardiovascular Technologists and Technicians	1,513	1,877	364	2.18 %	65	36	29	Associate's degree	\$71,740
<u>292032</u>	Diagnostic Medical Sonographers	1,687	2,111	424	2.27 %	74	42	32	Associate's degree	\$81,370
<u>292033</u>	Nuclear Medicine Technologists	680	691	11	0.16 %	14	1	13	Associate's degree	\$76,160
<u>292034</u>	Radiologic Technologists	4,759	5,117	358	0.73 %	126	36	90	Information Not Available	\$71,790
<u>292035</u>	Magnetic Resonance Imaging Technologists	1,227	1,333	106	0.83 %	34	11	23	Information Not Available	\$82,660
<u>292041</u>	Emergency Medical Technicians and Paramedics	6,750	8,250	1,500	2.03 %	261	150	111	Postsecondary non-degree award	\$39,650
<u>292051</u>	Dietetic Technicians	1,624	1,779	155	0.92 %	32	16	16	High school diploma or equivalent	\$29,580
<u>292052</u>	Pharmacy Technicians	8,425	9,056	631	0.72 %	146	63	83	High school diploma or equivalent	\$31,680
<u>292053</u>	Psychiatric Technicians	6,872	6,875	3	0.00 %	68	0	68	Postsecondary non-degree award	\$34,110
<u>292054</u>	Respiratory Therapy Technicians	166	139	-27	-1.76 %	2	0	2	Associate's degree	\$55,720
<u>292055</u>	Surgical Technologists	3,153	3,625	472	1.40 %	78	47	31	Postsecondary non-degree award	\$51,400
<u>292056</u>	Veterinary Technologists and Technicians	2,656	2,986	330	1.18 %	59	33	26	Associate's degree	\$42,020
<u>292057</u>	Ophthalmic Medical Technicians	1,254	1,452	198	1.48 %	32	20	12	Information Not Available	\$41,960
<u>292061</u>	Licensed Practical and Licensed Vocational Nurses	16,459	17,605	1,146	0.68 %	583	115	468	Postsecondary non-degree award	\$54,160
<u>292071</u>	Medical Records and Health Information Technicians	5,627	6,402	775	1.30 %	204	78	126	Postsecondary non-degree award	\$45,720
<u>292081</u>	Opticians, Dispensing	1,821	2,143	322	1.64 %	80	32	48	High school diploma or equivalent	\$51,850
<u>292091</u>	Orthotists and Prosthetists	177	206	29	1.53 %	5	3	2	Master's degree	\$72,330

<u>292099</u>	Health Technologists and Technicians, All Other	2,088	2,524	436	1.91 %	65	44	21	Information Not Available	\$54,350
<u>299011</u>	Occupational Health and Safety Specialists	1,094	1,145	51	0.46 %	27	5	22	Bachelor's degree	\$76,340
<u>299012</u>	Occupational Health and Safety Technicians	157	165	8	0.50 %	4	1	3	High school diploma or equivalent	\$59,510
<u>299091</u>	Athletic Trainers	693	797	104	1.41 %	24	10	14	Bachelor's degree	\$52,310
<u>299092</u>	Genetic Counselors	160	203	43	2.41 %	7	4	3	Information Not Available	\$71,720
<u>299099</u>	Healthcare Practitioners and Technical Workers, All Other	543	627	84	1.45 %	19	8	11	Information Not Available	\$62,910
<u>414011</u>	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	15,193	15,968	775	0.50 %	390	78	312	Bachelor's degree	\$101,420
<u>419031</u>	Sales Engineers	3,454	3,668	214	0.60 %	110	21	89	Bachelor's degree	\$114,320

Occupation Projections by Entry Education Level in Massachusetts

Links below provide other data for this area. Clicking on the link in the SOC code column will open a page with an occupation description and the industries which employ people in the occupation. [Projection Table Definitions and Notes](#)

[All Occupational Projections](#)

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[CSV of this data](#)

SOC Code	Title	Employment		Change		Annual Average Openings			Education Level	2015 Mean Annual OES Wage
		2014	2024	Level	Annual Percent	Total	Growth	Replacements		
311011	Home Health Aides	22,749	31,287	8,538	3.24 %	1,368	854	514	Less than high school	\$28,670
352011	Cooks, Fast Food	8,308	6,989	-1,319	-1.71 %	220	0	220	Less than high school	\$21,890
352012	Cooks, Institution and Cafeteria	7,774	8,380	606	0.75 %	267	61	206	Less than high school	\$33,830
352014	Cooks, Restaurant	24,413	27,869	3,456	1.33 %	992	346	646	Less than high school	\$28,230
352015	Cooks, Short Order	5,211	4,893	-318	-0.63 %	138	0	138	Less than high school	\$26,660
352019	Cooks, All Other	293	320	27	0.89 %	11	3	8	Less than high school	\$32,170
352021	Food Preparation Workers	20,387	21,508	1,121	0.54 %	680	112	568	Less than high school	\$25,220
353011	Bartenders	17,920	19,775	1,855	0.99 %	859	186	673	Less than high school	\$26,550
353021	Combined Food Preparation and Serving Workers, Including Fast Food	49,320	54,492	5,172	1.00 %	2,111	517	1,594	Less than high school	\$22,390
353022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	31,555	33,347	1,792	0.55 %	2,076	179	1,897	Less than high school	\$20,760
353031	Waiters and Waitresses	58,623	60,273	1,650	0.28 %	2,986	165	2,821	Less than high school	\$26,850
353041	Food Servers, Nonrestaurant	6,566	7,209	643	0.94 %	225	64	161	Less than high school	\$24,790
359011	Dining Room and Cafeteria Attendants	9,573	10,065	492	0.50 %	527	49	478	Less than high school	\$23,590

	and Bartender Helpers									
<u>359021</u>	Dishwashers	14,980	14,323	-657	-0.45 %	647	0	647	Less than high school	\$22,710
<u>359031</u>	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	9,536	9,939	403	0.41 %	717	40	677	Less than high school	\$23,800
<u>359099</u>	Food Preparation and Serving Related Workers, All Other	788	843	55	0.68 %	45	6	39	Less than high school	\$34,660
<u>372011</u>	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	55,450	57,832	2,382	0.42 %	1,339	238	1,101	Less than high school	\$33,000
<u>372012</u>	Maids and Housekeeping Cleaners	24,979	26,918	1,939	0.75 %	790	194	596	Less than high school	\$27,920
<u>373011</u>	Landscaping and Groundskeeping Workers	28,949	30,103	1,154	0.39 %	637	115	522	Less than high school	\$34,220
<u>392021</u>	Nonfarm Animal Caretakers	4,059	4,586	527	1.23 %	137	53	84	Less than high school	\$24,850
<u>393021</u>	Motion Picture Projectionists	284	225	-59	-2.30 %	11	0	11	Less than high school	\$27,460
<u>393031</u>	Ushers, Lobby Attendants, and Ticket Takers	2,701	2,854	153	0.55 %	185	15	170	Less than high school	\$23,400
<u>393091</u>	Amusement and Recreation Attendants	6,235	6,637	402	0.63 %	301	40	261	Less than high school	\$23,530
<u>395093</u>	Shampooers	614	677	63	0.98 %	11	6	5	Less than high school	\$21,440
<u>399021</u>	Personal Care Aides	33,580	41,886	8,306	2.23 %	1,103	831	272	Less than high school	\$27,140
<u>412011</u>	Cashiers	68,873	69,356	483	0.07 %	2,978	48	2,930	Less than high school	\$23,070
<u>412021</u>	Counter and Rental Clerks	9,282	9,467	185	0.20 %	248	18	230	Less than high school	\$32,950
<u>412022</u>	Parts Salespersons	3,531	3,655	124	0.35 %	90	12	78	Less than high school	\$37,670
<u>412031</u>	Retail Salespersons	115,490	120,036	4,546	0.39 %	4,458	455	4,003	Less than high school	\$27,110
<u>419041</u>	Telemarketers	3,702	3,490	-212	-0.59 %	68	0	68	Less than high	\$33,210

									school	
<u>435081</u>	Stock Clerks and Order Fillers	45,124	46,871	1,747	0.38 %	1,607	175	1,432	Less than high school	\$27,910
<u>472041</u>	Carpet Installers	1,246	1,198	-48	-0.39 %	18	0	18	Less than high school	\$52,160
<u>472044</u>	Tile and Marble Setters	1,103	1,109	6	0.05 %	16	1	15	Less than high school	\$75,660
<u>472051</u>	Cement Masons and Concrete Finishers	1,286	1,364	78	0.59 %	24	8	16	Less than high school	\$46,620
<u>472061</u>	Construction Laborers	23,067	24,286	1,219	0.52 %	582	122	460	Less than high school	\$52,120
<u>472081</u>	Drywall and Ceiling Tile Installers	1,958	1,926	-32	-0.16 %	12	0	12	Less than high school	\$48,010
<u>472131</u>	Insulation Workers, Floor, Ceiling, and Wall	487	483	-4	-0.08 %	16	0	16	Less than high school	\$37,080
<u>472141</u>	Painters, Construction and Maintenance	6,560	6,687	127	0.19 %	117	13	104	Less than high school	\$49,740
<u>472181</u>	Roofers	2,106	2,226	120	0.56 %	44	12	32	Less than high school	\$47,900
<u>473011</u>	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	497	571	74	1.40 %	13	7	6	Less than high school	\$45,610
<u>473012</u>	Helpers--Carpenters	1,247	1,317	70	0.55 %	23	7	16	Less than high school	\$36,860
<u>474071</u>	Septic Tank Servicers and Sewer Pipe Cleaners	565	647	82	1.36 %	22	8	14	Less than high school	\$38,230
<u>513011</u>	Bakers	3,967	4,220	253	0.62 %	112	25	87	Less than high school	\$30,460
<u>513021</u>	Butchers and Meat Cutters	1,945	2,044	99	0.50 %	48	10	38	Less than high school	\$41,110
<u>513022</u>	Meat, Poultry, and Fish Cutters and Trimmers	1,255	1,318	63	0.49 %	31	6	25	Less than high school	\$29,990
<u>513091</u>	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	556	585	29	0.51 %	15	3	12	Less than high school	\$29,050
<u>516011</u>	Laundry and Dry-	5,934	5,816	-118	-0.20 %	85	0	85	Less than high	\$23,860

	Cleaning Workers								school	
<u>516021</u>	Pressers, Textile, Garment, and Related Materials	798	751	-47	-0.61 %	19	0	19	Less than high school	\$27,240
<u>516031</u>	Sewing Machine Operators	2,960	2,585	-375	-1.35 %	18	0	18	Less than high school	\$28,060
<u>516051</u>	Sewers, Hand	594	501	-93	-1.69 %	20	0	20	Less than high school	\$32,610
<u>516052</u>	Tailors, Dressmakers, and Custom Sewers	891	831	-60	-0.69 %	30	0	30	Less than high school	\$28,880
<u>519022</u>	Grinding and Polishing Workers, Hand	706	643	-63	-0.93 %	15	0	15	Less than high school	\$35,110
<u>519192</u>	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	404	415	11	0.27 %	12	1	11	Less than high school	\$32,060
<u>519198</u>	Helpers--Production Workers	10,010	10,086	76	0.08 %	335	8	327	Less than high school	\$26,170
<u>533041</u>	Taxi Drivers and Chauffeurs	10,148	11,208	1,060	1.00 %	298	106	192	Less than high school	\$26,860
<u>535011</u>	Sailors and Marine Oilers	467	498	31	0.64 %	15	3	12	Less than high school	\$36,280
<u>536021</u>	Parking Lot Attendants	2,990	3,104	114	0.37 %	177	11	166	Less than high school	\$32,880
<u>536031</u>	Automotive and Watercraft Service Attendants	2,667	2,848	181	0.66 %	124	18	106	Less than high school	\$24,090
<u>537021</u>	Crane and Tower Operators	453	470	17	0.37 %	18	2	16	Less than high school	\$53,530
<u>537032</u>	Excavating and Loading Machine and Dragline Operators	1,158	1,193	35	0.30 %	18	4	14	Less than high school	\$70,660
<u>537051</u>	Industrial Truck and Tractor Operators	6,922	7,041	119	0.17 %	184	12	172	Less than high school	\$38,800
<u>537061</u>	Cleaners of Vehicles and Equipment	4,287	4,609	322	0.73 %	181	32	149	Less than high school	\$25,710
<u>537062</u>	Laborers and Freight, Stock, and Material Movers, Hand	33,174	34,596	1,422	0.42 %	1,129	142	987	Less than high school	\$30,870
<u>537063</u>	Machine Feeders	1,721	1,651	-70	-0.41 %	38	0	38	Less than high	\$30,930

	and Offbearers								school	
<u>537064</u>	Packers and Packagers, Hand	13,735	13,672	-63	-0.05 %	365	0	365	Less than high school	\$24,740
<u>537081</u>	Refuse and Recyclable Material Collectors	2,271	2,449	178	0.76 %	75	18	57	Less than high school	\$38,280
<u>537199</u>	Material Moving Workers, All Other	561	581	20	0.35 %	20	2	18	Less than high school	\$27,280
<u>113011</u>	Administrative Services Managers	13,156	14,030	874	0.65 %	333	87	246	High school diploma or equivalent	\$101,400
<u>113071</u>	Transportation, Storage, and Distribution Managers	2,443	2,527	84	0.34 %	62	8	54	High school diploma or equivalent	\$96,450
<u>119013</u>	Farmers, Ranchers, and Other Agricultural Managers	4,660	5,038	378	0.78 %	117	38	79	High school diploma or equivalent	\$51,810
<u>119051</u>	Food Service Managers	8,867	9,274	407	0.45 %	219	41	178	High school diploma or equivalent	\$59,880
<u>119081</u>	Lodging Managers	966	1,026	60	0.60 %	24	6	18	High school diploma or equivalent	\$72,000
<u>119141</u>	Property, Real Estate, and Community Association Managers	7,656	8,066	410	0.52 %	174	41	133	High school diploma or equivalent	\$88,430
<u>119199</u>	Managers, All Other	14,924	15,668	744	0.49 %	403	74	329	High school diploma or equivalent	\$120,690
<u>131022</u>	Wholesale and Retail Buyers, Except Farm Products	4,057	4,236	179	0.43 %	147	18	129	High school diploma or equivalent	\$63,760
<u>131023</u>	Purchasing Agents, Except Wholesale, Retail, and Farm Products	6,407	6,378	-29	-0.05 %	176	0	176	High school diploma or equivalent	\$72,190
<u>131031</u>	Claims Adjusters, Examiners, and Investigators	10,014	10,519	505	0.49 %	298	50	248	High school diploma or equivalent	\$69,120
<u>131199</u>	Business Operations	12,286	13,122	836	0.66 %	230	84	146	High school diploma or	\$78,480

	Specialists, All Other								equivalent	
<u>132021</u>	Appraisers and Assessors of Real Estate	2,024	2,133	109	0.53 %	43	11	32	High school diploma or equivalent	\$64,430
<u>132072</u>	Loan Officers	5,505	5,947	442	0.78 %	136	44	92	High school diploma or equivalent	\$94,970
<u>132082</u>	Tax Preparers	3,202	3,069	-133	-0.42 %	80	0	80	High school diploma or equivalent	\$58,450
<u>211011</u>	Substance Abuse and Behavioral Disorder Counselors	3,989	4,767	778	1.80 %	161	78	83	High school diploma or equivalent	\$42,630
<u>211093</u>	Social and Human Service Assistants	19,906	22,139	2,233	1.07 %	613	223	390	High school diploma or equivalent	\$34,880
<u>253021</u>	Self-Enrichment Education Teachers	10,455	12,055	1,600	1.43 %	357	160	197	High school diploma or equivalent	\$45,050
<u>259041</u>	Teacher Assistants	35,540	38,165	2,625	0.72 %	1,114	262	852	High school diploma or equivalent	\$30,400
<u>271013</u>	Fine Artists, Including Painters, Sculptors, and Illustrators	581	592	11	0.19 %	12	1	11	High school diploma or equivalent	\$43,700
<u>271019</u>	Artists and Related Workers, All Other	498	546	48	0.92 %	14	5	9	High school diploma or equivalent	\$52,720
<u>271022</u>	Fashion Designers	347	388	41	1.12 %	12	4	8	High school diploma or equivalent	\$86,600
<u>271023</u>	Floral Designers	1,079	1,056	-23	-0.22 %	26	0	26	High school diploma or equivalent	\$31,720
<u>271026</u>	Merchandise Displayers and Window Trimmers	1,890	1,759	-131	-0.72 %	45	0	45	High school diploma or equivalent	\$32,740
<u>272022</u>	Coaches and Scouts	7,015	7,402	387	0.54 %	276	39	237	High school diploma or equivalent	\$46,280
<u>272023</u>	Umpires, Referees, and Other Sports Officials	351	352	1	0.03 %	12	0	12	High school diploma or equivalent	\$29,850

<u>272042</u>	Musicians and Singers	1,003	1,042	39	0.38 %	33	4	29	High school diploma or equivalent	\$0
<u>274021</u>	Photographers	3,281	3,370	89	0.27 %	89	9	80	High school diploma or equivalent	\$51,190
<u>292051</u>	Dietetic Technicians	1,624	1,779	155	0.92 %	32	16	16	High school diploma or equivalent	\$29,580
<u>292052</u>	Pharmacy Technicians	8,425	9,056	631	0.72 %	146	63	83	High school diploma or equivalent	\$31,680
<u>292081</u>	Opticians, Dispensing	1,821	2,143	322	1.64 %	80	32	48	High school diploma or equivalent	\$51,850
<u>311013</u>	Psychiatric Aides	2,680	2,793	113	0.41 %	71	11	60	High school diploma or equivalent	\$28,070
<u>312012</u>	Occupational Therapy Aides	682	810	128	1.73 %	33	13	20	High school diploma or equivalent	\$33,150
<u>312022</u>	Physical Therapist Aides	994	1,285	291	2.60 %	58	29	29	High school diploma or equivalent	\$30,340
<u>319092</u>	Medical Assistants	16,275	18,686	2,411	1.39 %	580	241	339	High school diploma or equivalent	\$38,090
<u>319093</u>	Medical Equipment Preparers	1,280	1,455	175	1.29 %	45	18	27	High school diploma or equivalent	\$41,930
<u>319095</u>	Pharmacy Aides	1,026	1,015	-11	-0.11 %	21	0	21	High school diploma or equivalent	\$28,040
<u>319096</u>	Veterinary Assistants and Laboratory Animal Caretakers	1,933	2,046	113	0.57 %	51	11	40	High school diploma or equivalent	\$33,540
<u>331012</u>	First-Line Supervisors of Police and Detectives	4,149	4,189	40	0.10 %	152	4	148	High school diploma or equivalent	\$94,190
<u>331099</u>	First-Line Supervisors of Protective Service Workers, All Other	1,821	1,895	74	0.40 %	53	7	46	High school diploma or equivalent	\$48,500
<u>333012</u>	Correctional Officers	5,834	5,796	-38	-0.07 %	160	0	160	High school	\$66,880

	and Jailers								diploma or equivalent	
<u>333021</u>	Detectives and Criminal Investigators	1,943	1,966	23	0.12 %	49	2	47	High school diploma or equivalent	\$81,740
<u>333041</u>	Parking Enforcement Workers	646	495	-151	-2.63 %	19	0	19	High school diploma or equivalent	\$41,840
<u>333051</u>	Police and Sheriff's Patrol Officers	16,583	16,779	196	0.12 %	567	20	547	High school diploma or equivalent	\$64,250
<u>339032</u>	Security Guards	20,953	21,645	692	0.33 %	364	69	295	High school diploma or equivalent	\$30,320
<u>339091</u>	Crossing Guards	1,680	1,731	51	0.30 %	35	5	30	High school diploma or equivalent	\$27,070
<u>339092</u>	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	3,011	3,184	173	0.56 %	59	17	42	High school diploma or equivalent	\$23,200
<u>339093</u>	Transportation Security Screeners	1,113	1,171	58	0.51 %	22	6	16	High school diploma or equivalent	\$40,450
<u>339099</u>	Protective Service Workers, All Other	2,455	2,630	175	0.69 %	52	18	34	High school diploma or equivalent	\$30,030
<u>351011</u>	Chefs and Head Cooks	4,141	4,484	343	0.80 %	96	34	62	High school diploma or equivalent	\$55,840
<u>351012</u>	First-Line Supervisors of Food Preparation and Serving Workers	20,585	22,572	1,987	0.93 %	810	199	611	High school diploma or equivalent	\$37,220
<u>371011</u>	First-Line Supervisors of Housekeeping and Janitorial Workers	6,608	6,891	283	0.42 %	132	28	104	High school diploma or equivalent	\$47,700
<u>371012</u>	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	5,653	5,829	176	0.31 %	112	18	94	High school diploma or equivalent	\$53,330
<u>372019</u>	Building Cleaning	451	466	15	0.33 %	11	2	9	High school	\$35,880

	Workers, All Other								diploma or equivalent	
<u>372021</u>	Pest Control Workers	1,103	1,069	-34	-0.31 %	28	0	28	High school diploma or equivalent	\$43,430
<u>373013</u>	Tree Trimmers and Pruners	1,755	1,817	62	0.35 %	38	6	32	High school diploma or equivalent	\$48,860
<u>392011</u>	Animal Trainers	359	401	42	1.11 %	17	4	13	High school diploma or equivalent	\$34,490
<u>393093</u>	Locker Room, Coatroom, and Dressing Room Attendants	542	574	32	0.58 %	26	3	23	High school diploma or equivalent	\$29,270
<u>396011</u>	Baggage Porters and Bellhops	799	855	56	0.68 %	22	6	16	High school diploma or equivalent	\$22,770
<u>396012</u>	Concierges	792	847	55	0.67 %	22	6	16	High school diploma or equivalent	\$33,480
<u>397011</u>	Tour Guides and Escorts	1,655	1,695	40	0.24 %	69	4	65	High school diploma or equivalent	\$25,970
<u>399011</u>	Childcare Workers	22,049	24,238	2,189	0.95 %	870	219	651	High school diploma or equivalent	\$26,330
<u>399031</u>	Fitness Trainers and Aerobics Instructors	11,015	11,859	844	0.74 %	287	84	203	High school diploma or equivalent	\$43,800
<u>399099</u>	Personal Care and Service Workers, All Other	380	399	19	0.49 %	11	2	9	High school diploma or equivalent	\$34,540
<u>411011</u>	First-Line Supervisors of Retail Sales Workers	36,434	37,138	704	0.19 %	884	70	814	High school diploma or equivalent	\$46,050
<u>411012</u>	First-Line Supervisors of Non-Retail Sales Workers	9,834	10,080	246	0.25 %	138	25	113	High school diploma or equivalent	\$94,950
<u>413011</u>	Advertising Sales Agents	3,199	3,034	-165	-0.53 %	95	0	95	High school diploma or equivalent	\$72,180
<u>413021</u>	Insurance Sales Agents	8,048	8,751	703	0.84 %	281	70	211	High school diploma or	\$78,160

									equivalent	
<u>413041</u>	Travel Agents	2,251	1,947	-304	-1.44 %	35	0	35	High school diploma or equivalent	\$47,170
<u>413099</u>	Sales Representatives, Services, All Other	20,478	22,007	1,529	0.72 %	589	153	436	High school diploma or equivalent	\$78,380
<u>414012</u>	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	27,549	28,405	856	0.31 %	653	86	567	High school diploma or equivalent	\$79,320
<u>419011</u>	Demonstrators and Product Promoters	1,641	1,640	-1	-0.01 %	49	0	49	High school diploma or equivalent	\$36,960
<u>419021</u>	Real Estate Brokers	1,868	1,860	-8	-0.04 %	13	0	13	High school diploma or equivalent	\$111,530
<u>419022</u>	Real Estate Sales Agents	5,565	5,556	-9	-0.02 %	39	0	39	High school diploma or equivalent	\$78,760
<u>431011</u>	First-Line Supervisors of Office and Administrative Support Workers	36,341	38,632	2,291	0.61 %	778	229	549	High school diploma or equivalent	\$61,690
<u>432011</u>	Switchboard Operators, Including Answering Service	3,047	2,028	-1,019	-3.99 %	36	0	36	High school diploma or equivalent	\$31,380
<u>432021</u>	Telephone Operators	651	367	-284	-5.57 %	16	0	16	High school diploma or equivalent	\$43,630
<u>433011</u>	Bill and Account Collectors	6,530	6,111	-419	-0.66 %	160	0	160	High school diploma or equivalent	\$43,790
<u>433021</u>	Billing and Posting Clerks	11,238	12,224	986	0.84 %	334	99	235	High school diploma or equivalent	\$41,260
<u>433031</u>	Bookkeeping, Accounting, and Auditing Clerks	41,475	37,244	-4,231	-1.07 %	407	0	407	High school diploma or equivalent	\$44,260
<u>433051</u>	Payroll and Timekeeping Clerks	4,025	3,826	-199	-0.51 %	108	0	108	High school diploma or equivalent	\$47,880

<u>433061</u>	Procurement Clerks	1,544	1,435	-109	-0.73 %	54	0	54	High school diploma or equivalent	\$45,860
<u>433071</u>	Tellers	11,022	10,283	-739	-0.69 %	431	0	431	High school diploma or equivalent	\$30,750
<u>434011</u>	Brokerage Clerks	1,960	1,899	-61	-0.32 %	48	0	48	High school diploma or equivalent	\$52,560
<u>434031</u>	Court, Municipal, and License Clerks	2,078	2,098	20	0.10 %	14	2	12	High school diploma or equivalent	\$45,770
<u>434051</u>	Customer Service Representatives	54,108	57,552	3,444	0.62 %	1,676	344	1,332	High school diploma or equivalent	\$40,800
<u>434071</u>	File Clerks	2,437	2,231	-206	-0.88 %	49	0	49	High school diploma or equivalent	\$31,860
<u>434081</u>	Hotel, Motel, and Resort Desk Clerks	3,751	4,037	286	0.74 %	223	29	194	High school diploma or equivalent	\$28,080
<u>434111</u>	Interviewers, Except Eligibility and Loan	2,531	2,639	108	0.42 %	69	11	58	High school diploma or equivalent	\$38,440
<u>434121</u>	Library Assistants, Clerical	2,951	3,030	79	0.26 %	99	8	91	High school diploma or equivalent	\$31,300
<u>434131</u>	Loan Interviewers and Clerks	2,893	3,158	265	0.88 %	70	26	44	High school diploma or equivalent	\$44,690
<u>434141</u>	New Accounts Clerks	1,195	1,110	-85	-0.74 %	29	0	29	High school diploma or equivalent	\$39,880
<u>434151</u>	Order Clerks	3,504	3,234	-270	-0.80 %	95	0	95	High school diploma or equivalent	\$37,590
<u>434161</u>	Human Resources Assistants, Except Payroll and Timekeeping	3,180	3,041	-139	-0.45 %	36	0	36	High school diploma or equivalent	\$43,930
<u>434171</u>	Receptionists and Information Clerks	19,907	20,731	824	0.41 %	618	82	536	High school diploma or equivalent	\$31,590
<u>434181</u>	Reservation and Transportation	3,347	3,325	-22	-0.07 %	42	0	42	High school diploma or equivalent	\$39,360

	Ticket Agents and Travel Clerks									
<u>434199</u>	Information and Record Clerks, All Other	1,679	1,767	88	0.51 %	52	9	43	High school diploma or equivalent	\$42,210
<u>435011</u>	Cargo and Freight Agents	703	752	49	0.68 %	28	5	23	High school diploma or equivalent	\$46,290
<u>435021</u>	Couriers and Messengers	3,097	3,281	184	0.58 %	57	18	39	High school diploma or equivalent	\$32,580
<u>435031</u>	Police, Fire, and Ambulance Dispatchers	2,797	2,619	-178	-0.66 %	70	0	70	High school diploma or equivalent	\$44,860
<u>435032</u>	Dispatchers, Except Police, Fire, and Ambulance	3,621	3,712	91	0.25 %	99	9	90	High school diploma or equivalent	\$42,480
<u>435051</u>	Postal Service Clerks	2,188	1,881	-307	-1.50 %	26	0	26	High school diploma or equivalent	\$51,310
<u>435052</u>	Postal Service Mail Carriers	7,719	6,635	-1,084	-1.50 %	149	0	149	High school diploma or equivalent	\$52,450
<u>435053</u>	Postal Service Mail Sorters, Processors, and Processing Machine Operators	3,424	2,644	-780	-2.55 %	40	0	40	High school diploma or equivalent	\$51,260
<u>435061</u>	Production, Planning, and Expediting Clerks	7,083	7,297	214	0.30 %	213	21	192	High school diploma or equivalent	\$52,780
<u>435071</u>	Shipping, Receiving, and Traffic Clerks	16,381	15,908	-473	-0.29 %	356	0	356	High school diploma or equivalent	\$36,200
<u>435111</u>	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	1,302	1,332	30	0.23 %	42	3	39	High school diploma or equivalent	\$38,520
<u>436011</u>	Executive Secretaries and Executive Administrative Assistants	26,981	24,945	-2,036	-0.78 %	284	0	284	High school diploma or equivalent	\$58,020
<u>436012</u>	Legal Secretaries	5,758	5,214	-544	-0.99 %	61	0	61	High school diploma or equivalent	\$51,000

<u>436013</u>	Medical Secretaries	21,372	24,444	3,072	1.35 %	532	307	225	High school diploma or equivalent	\$41,090
<u>436014</u>	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	45,897	46,436	539	0.12 %	538	54	484	High school diploma or equivalent	\$43,570
<u>439011</u>	Computer Operators	2,145	1,685	-460	-2.38 %	16	0	16	High school diploma or equivalent	\$50,130
<u>439021</u>	Data Entry Keyers	3,112	2,919	-193	-0.64 %	40	0	40	High school diploma or equivalent	\$36,690
<u>439041</u>	Insurance Claims and Policy Processing Clerks	7,246	7,616	370	0.50 %	218	37	181	High school diploma or equivalent	\$44,650
<u>439051</u>	Mail Clerks and Mail Machine Operators, Except Postal Service	2,087	1,724	-363	-1.89 %	43	0	43	High school diploma or equivalent	\$34,950
<u>439061</u>	Office Clerks, General	63,199	63,710	511	0.08 %	1,414	51	1,363	High school diploma or equivalent	\$36,210
<u>439071</u>	Office Machine Operators, Except Computer	1,855	1,536	-319	-1.87 %	42	0	42	High school diploma or equivalent	\$34,400
<u>471011</u>	First-Line Supervisors of Construction Trades and Extraction Workers	10,167	10,631	464	0.45 %	127	46	81	High school diploma or equivalent	\$77,840
<u>472021</u>	Brickmasons and Blockmasons	2,174	2,441	267	1.17 %	45	27	18	High school diploma or equivalent	\$72,460
<u>472031</u>	Carpenters	23,512	24,335	823	0.34 %	352	82	270	High school diploma or equivalent	\$58,370
<u>472042</u>	Floor Layers, Except Carpet, Wood, and Hard Tiles	650	696	46	0.69 %	14	5	9	High school diploma or equivalent	\$43,550
<u>472071</u>	Paving, Surfacing, and Tamping Equipment Operators	1,066	1,066	0	0.00 %	26	0	26	High school diploma or equivalent	\$55,850

<u>472073</u>	Operating Engineers and Other Construction Equipment Operators	5,737	5,919	182	0.31 %	114	18	96	High school diploma or equivalent	\$65,370
<u>472111</u>	Electricians	15,703	17,114	1,411	0.86 %	381	141	240	High school diploma or equivalent	\$64,790
<u>472121</u>	Glaziers	1,010	993	-17	-0.17 %	14	0	14	High school diploma or equivalent	\$55,830
<u>472132</u>	Insulation Workers, Mechanical	342	388	46	1.27 %	17	5	12	High school diploma or equivalent	\$57,260
<u>472152</u>	Plumbers, Pipefitters, and Steamfitters	10,823	11,395	572	0.52 %	200	57	143	High school diploma or equivalent	\$69,950
<u>472211</u>	Sheet Metal Workers	2,500	2,563	63	0.25 %	60	6	54	High school diploma or equivalent	\$57,860
<u>472221</u>	Structural Iron and Steel Workers	866	840	-26	-0.30 %	14	0	14	High school diploma or equivalent	\$69,450
<u>473013</u>	Helpers--Electricians	1,470	1,626	156	1.01 %	34	16	18	High school diploma or equivalent	\$33,500
<u>473015</u>	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	885	939	54	0.59 %	16	5	11	High school diploma or equivalent	\$33,150
<u>474011</u>	Construction and Building Inspectors	2,217	2,274	57	0.25 %	68	6	62	High school diploma or equivalent	\$62,180
<u>474021</u>	Elevator Installers and Repairers	551	586	35	0.62 %	12	4	8	High school diploma or equivalent	\$81,530
<u>474041</u>	Hazardous Materials Removal Workers	1,311	1,414	103	0.76 %	39	10	29	High school diploma or equivalent	\$46,990
<u>474051</u>	Highway Maintenance Workers	2,212	2,229	17	0.08 %	61	2	59	High school diploma or equivalent	\$47,570
<u>474061</u>	Rail-Track Laying and Maintenance Equipment Operators	514	519	5	0.10 %	13	0	13	High school diploma or equivalent	\$54,320

<u>491011</u>	First-Line Supervisors of Mechanics, Installers, and Repairers	9,208	9,582	374	0.40 %	221	37	184	High school diploma or equivalent	\$72,430
<u>492098</u>	Security and Fire Alarm Systems Installers	1,311	1,423	112	0.82 %	43	11	32	High school diploma or equivalent	\$55,520
<u>493021</u>	Automotive Body and Related Repairers	4,061	4,308	247	0.59 %	118	25	93	High school diploma or equivalent	\$45,980
<u>493022</u>	Automotive Glass Installers and Repairers	647	672	25	0.38 %	11	2	9	High school diploma or equivalent	\$32,160
<u>493023</u>	Automotive Service Technicians and Mechanics	16,872	17,062	190	0.11 %	471	19	452	High school diploma or equivalent	\$45,940
<u>493031</u>	Bus and Truck Mechanics and Diesel Engine Specialists	3,399	3,725	326	0.92 %	91	33	58	High school diploma or equivalent	\$54,410
<u>493042</u>	Mobile Heavy Equipment Mechanics, Except Engines	1,449	1,491	42	0.29 %	38	4	34	High school diploma or equivalent	\$65,280
<u>493051</u>	Motorboat Mechanics and Service Technicians	872	874	2	0.02 %	18	0	18	High school diploma or equivalent	\$44,520
<u>493053</u>	Outdoor Power Equipment and Other Small Engine Mechanics	547	561	14	0.25 %	12	1	11	High school diploma or equivalent	\$42,260
<u>493093</u>	Tire Repairers and Changers	1,387	1,359	-28	-0.20 %	47	0	47	High school diploma or equivalent	\$26,600
<u>499011</u>	Mechanical Door Repairers	356	369	13	0.36 %	15	1	14	High school diploma or equivalent	\$36,590
<u>499012</u>	Control and Valve Installers and Repairers, Except Mechanical Door	702	725	23	0.32 %	30	2	28	High school diploma or equivalent	\$58,120
<u>499031</u>	Home Appliance Repairers	981	962	-19	-0.20 %	26	0	26	High school diploma or equivalent	\$42,080

<u>499041</u>	Industrial Machinery Mechanics	3,913	4,678	765	1.80 %	178	76	102	High school diploma or equivalent	\$56,580
<u>499043</u>	Maintenance Workers, Machinery	1,337	1,478	141	1.01 %	35	14	21	High school diploma or equivalent	\$47,930
<u>499044</u>	Millwrights	592	683	91	1.44 %	21	9	12	High school diploma or equivalent	\$61,110
<u>499051</u>	Electrical Power-Line Installers and Repairers	1,761	1,828	67	0.37 %	77	7	70	High school diploma or equivalent	\$83,340
<u>499052</u>	Telecommunications Line Installers and Repairers	3,014	2,771	-243	-0.84 %	55	0	55	High school diploma or equivalent	\$74,430
<u>499071</u>	Maintenance and Repair Workers, General	22,916	24,197	1,281	0.55 %	728	128	600	High school diploma or equivalent	\$44,490
<u>499094</u>	Locksmiths and Safe Repairers	473	393	-80	-1.84 %	24	0	24	High school diploma or equivalent	\$51,880
<u>499098</u>	Helpers--Installation, Maintenance, and Repair Workers	1,836	1,920	84	0.45 %	67	8	59	High school diploma or equivalent	\$36,550
<u>512022</u>	Electrical and Electronic Equipment Assemblers	5,732	5,432	-300	-0.54 %	71	0	71	High school diploma or equivalent	\$38,360
<u>512023</u>	Electromechanical Equipment Assemblers	2,083	1,950	-133	-0.66 %	26	0	26	High school diploma or equivalent	\$40,880
<u>512041</u>	Structural Metal Fabricators and Fitters	1,506	1,519	13	0.09 %	26	1	25	High school diploma or equivalent	\$43,120
<u>512092</u>	Team Assemblers	16,938	17,309	371	0.22 %	401	37	364	High school diploma or equivalent	\$31,330
<u>512099</u>	Assemblers and Fabricators, All Other	3,678	3,862	184	0.49 %	97	18	79	High school diploma or equivalent	\$38,230
<u>513092</u>	Food Batchmakers	2,183	2,289	106	0.48 %	58	11	47	High school diploma or equivalent	\$27,880
<u>514011</u>	Computer-Controlled Machine Tool	2,324	2,691	367	1.48 %	108	37	71	High school diploma or equivalent	\$44,560

	Operators, Metal and Plastic									
<u>514012</u>	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	688	810	122	1.65 %	33	12	21	High school diploma or equivalent	\$54,430
<u>514021</u>	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	1,738	1,362	-376	-2.41 %	43	0	43	High school diploma or equivalent	\$38,590
<u>514031</u>	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	2,807	2,239	-568	-2.24 %	36	0	36	High school diploma or equivalent	\$36,500
<u>514033</u>	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2,066	1,640	-426	-2.28 %	86	0	86	High school diploma or equivalent	\$43,350
<u>514034</u>	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	1,034	818	-216	-2.32 %	26	0	26	High school diploma or equivalent	\$48,610
<u>514035</u>	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	1,006	791	-215	-2.38 %	18	0	18	High school diploma or equivalent	\$47,250
<u>514041</u>	Machinists	8,804	9,525	721	0.79 %	326	72	254	High school diploma or equivalent	\$49,220
<u>514072</u>	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	2,573	1,982	-591	-2.58 %	38	0	38	High school diploma or equivalent	\$36,120
<u>514081</u>	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	1,704	1,693	-11	-0.06 %	30	0	30	High school diploma or equivalent	\$36,470

<u>514121</u>	Welders, Cutters, Solderers, and Brazers	3,408	3,427	19	0.06 %	100	2	98	High school diploma or equivalent	\$46,290
<u>514122</u>	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	1,065	857	-208	-2.15 %	30	0	30	High school diploma or equivalent	\$41,000
<u>514193</u>	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	1,135	921	-214	-2.07 %	28	0	28	High school diploma or equivalent	\$36,000
<u>515112</u>	Printing Press Operators	3,838	3,603	-235	-0.63 %	58	0	58	High school diploma or equivalent	\$43,490
<u>515113</u>	Print Binding and Finishing Workers	1,031	972	-59	-0.59 %	16	0	16	High school diploma or equivalent	\$36,400
<u>516093</u>	Upholsterers	435	426	-9	-0.21 %	11	0	11	High school diploma or equivalent	\$36,060
<u>517011</u>	Cabinetmakers and Bench Carpenters	1,882	1,952	70	0.37 %	22	7	15	High school diploma or equivalent	\$40,310
<u>518012</u>	Power Distributors and Dispatchers	417	432	15	0.35 %	16	2	14	High school diploma or equivalent	\$93,250
<u>518013</u>	Power Plant Operators	857	887	30	0.34 %	32	3	29	High school diploma or equivalent	\$75,770
<u>518021</u>	Stationary Engineers and Boiler Operators	1,089	1,151	62	0.56 %	36	6	30	High school diploma or equivalent	\$60,900
<u>518031</u>	Water and Wastewater Treatment Plant and System Operators	2,116	2,236	120	0.55 %	66	12	54	High school diploma or equivalent	\$51,260
<u>518091</u>	Chemical Plant and System Operators	547	537	-10	-0.18 %	21	0	21	High school diploma or equivalent	\$58,290
<u>518092</u>	Gas Plant Operators	363	374	11	0.30 %	15	1	14	High school diploma or equivalent	\$71,850
<u>519011</u>	Chemical Equipment Operators and	590	579	-11	-0.19 %	19	0	19	High school diploma or	\$49,700

	Tenders								equivalent	
<u>519012</u>	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	764	786	22	0.28 %	26	2	24	High school diploma or equivalent	\$38,400
<u>519023</u>	Mixing and Blending Machine Setters, Operators, and Tenders	1,988	1,990	2	0.01 %	43	0	43	High school diploma or equivalent	\$38,410
<u>519032</u>	Cutting and Slicing Machine Setters, Operators, and Tenders	1,348	1,307	-41	-0.31 %	27	0	27	High school diploma or equivalent	\$36,730
<u>519041</u>	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	965	880	-85	-0.92 %	35	0	35	High school diploma or equivalent	\$34,640
<u>519061</u>	Inspectors, Testers, Sorters, Samplers, and Weighers	8,825	8,854	29	0.03 %	225	3	222	High school diploma or equivalent	\$44,730
<u>519071</u>	Jewelers and Precious Stone and Metal Workers	878	745	-133	-1.63 %	14	0	14	High school diploma or equivalent	\$45,220
<u>519081</u>	Dental Laboratory Technicians	693	772	79	1.09 %	25	8	17	High school diploma or equivalent	\$47,090
<u>519083</u>	Ophthalmic Laboratory Technicians	694	654	-40	-0.59 %	17	0	17	High school diploma or equivalent	\$32,980
<u>519111</u>	Packaging and Filling Machine Operators and Tenders	8,566	9,047	481	0.55 %	353	48	305	High school diploma or equivalent	\$27,940
<u>519121</u>	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	1,726	1,722	-4	-0.02 %	33	0	33	High school diploma or equivalent	\$36,010
<u>519122</u>	Painters, Transportation Equipment	651	686	35	0.53 %	16	4	12	High school diploma or equivalent	\$46,080
<u>519151</u>	Photographic Process Workers	788	507	-281	-4.31 %	15	0	15	High school diploma or	\$36,610

	and Processing Machine Operators								equivalent	
<u>519191</u>	Adhesive Bonding Machine Operators and Tenders	552	592	40	0.70 %	18	4	14	High school diploma or equivalent	\$32,880
<u>519194</u>	Etchers and Engravers	415	411	-4	-0.10 %	11	0	11	High school diploma or equivalent	\$36,740
<u>519195</u>	Molders, Shapers, and Casters, Except Metal and Plastic	953	932	-21	-0.22 %	33	0	33	High school diploma or equivalent	\$38,340
<u>519196</u>	Paper Goods Machine Setters, Operators, and Tenders	1,530	1,450	-80	-0.54 %	22	0	22	High school diploma or equivalent	\$37,660
<u>531021</u>	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	3,266	3,349	83	0.25 %	113	8	105	High school diploma or equivalent	\$51,570
<u>531031</u>	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	3,464	3,608	144	0.41 %	125	14	111	High school diploma or equivalent	\$60,230
<u>532031</u>	Flight Attendants	1,639	1,690	51	0.31 %	35	5	30	High school diploma or equivalent	\$46,220
<u>533011</u>	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	825	1,062	237	2.56 %	38	24	14	High school diploma or equivalent	\$31,380
<u>533021</u>	Bus Drivers, Transit and Intercity	4,322	4,547	225	0.51 %	79	22	57	High school diploma or equivalent	\$47,900
<u>533022</u>	Bus Drivers, School or Special Client	12,588	14,035	1,447	1.09 %	311	145	166	High school diploma or equivalent	\$32,860
<u>533031</u>	Driver/Sales Workers	8,158	8,534	376	0.45 %	177	38	139	High school diploma or equivalent	\$30,790
<u>533032</u>	Heavy and Tractor-Trailer Truck Drivers	24,854	25,930	1,076	0.42 %	531	108	423	High school diploma or equivalent	\$49,090

<u>533033</u>	Light Truck or Delivery Services Drivers	23,697	24,665	968	0.40 %	500	97	403	High school diploma or equivalent	\$36,070
<u>533099</u>	Motor Vehicle Operators, All Other	544	582	38	0.68 %	21	4	17	High school diploma or equivalent	\$35,940
<u>534011</u>	Locomotive Engineers	864	879	15	0.17 %	36	2	34	High school diploma or equivalent	\$50,600
<u>534021</u>	Railroad Brake, Signal, and Switch Operators	639	651	12	0.19 %	25	1	24	High school diploma or equivalent	\$63,650
<u>534031</u>	Railroad Conductors and Yardmasters	820	833	13	0.16 %	32	1	31	High school diploma or equivalent	\$46,800
<u>535022</u>	Motorboat Operators	251	261	10	0.39 %	11	1	10	High school diploma or equivalent	\$46,110
<u>536099</u>	Transportation Workers, All Other	929	931	2	0.02 %	47	0	47	High school diploma or equivalent	\$43,450
<u>339021</u>	Private Detectives and Investigators	1,744	1,764	20	0.11 %	48	2	46	Some college, no degree	\$47,620
<u>399041</u>	Residential Advisors	5,010	5,436	426	0.82 %	195	43	152	Some college, no degree	\$30,150
<u>536051</u>	Transportation Inspectors	639	647	8	0.12 %	17	1	16	Some college, no degree	\$69,540
<u>131032</u>	Insurance Appraisers, Auto Damage	875	861	-14	-0.16 %	22	0	22	Postsecondary non-degree award	\$65,630
<u>254031</u>	Library Technicians	3,111	3,183	72	0.23 %	155	7	148	Postsecondary non-degree award	\$42,300
<u>274011</u>	Audio and Video Equipment Technicians	1,951	2,185	234	1.14 %	60	23	37	Postsecondary non-degree award	\$46,320
<u>292041</u>	Emergency Medical Technicians and Paramedics	6,750	8,250	1,500	2.03 %	261	150	111	Postsecondary non-degree award	\$39,650
<u>292053</u>	Psychiatric Technicians	6,872	6,875	3	0.00 %	68	0	68	Postsecondary non-degree award	\$34,110
<u>292055</u>	Surgical Technologists	3,153	3,625	472	1.40 %	78	47	31	Postsecondary non-degree award	\$51,400

<u>292061</u>	Licensed Practical and Licensed Vocational Nurses	16,459	17,605	1,146	0.68 %	583	115	468	Postsecondary non-degree award	\$54,160
<u>292071</u>	Medical Records and Health Information Technicians	5,627	6,402	775	1.30 %	204	78	126	Postsecondary non-degree award	\$45,720
<u>319011</u>	Massage Therapists	2,867	3,385	518	1.67 %	73	52	21	Postsecondary non-degree award	\$51,650
<u>319091</u>	Dental Assistants	7,290	7,969	679	0.89 %	248	68	180	Postsecondary non-degree award	\$42,080
<u>319094</u>	Medical Transcriptionists	1,224	1,082	-142	-1.23 %	26	0	26	Postsecondary non-degree award	\$46,910
<u>331021</u>	First-Line Supervisors of Fire Fighting and Prevention Workers	3,090	3,120	30	0.10 %	150	3	147	Postsecondary non-degree award	\$83,250
<u>332011</u>	Firefighters	12,014	12,145	131	0.11 %	362	13	349	Postsecondary non-degree award	\$57,610
<u>395012</u>	Hairdressers, Hairstylists, and Cosmetologists	18,732	20,742	2,010	1.02 %	683	201	482	Postsecondary non-degree award	\$35,370
<u>395092</u>	Manicurists and Pedicurists	5,575	6,162	587	1.01 %	103	59	44	Postsecondary non-degree award	\$24,370
<u>395094</u>	Skincare Specialists	1,472	1,631	159	1.03 %	28	16	12	Postsecondary non-degree award	\$44,140
<u>492011</u>	Computer, Automated Teller, and Office Machine Repairers	2,444	2,462	18	0.07 %	49	2	47	Postsecondary non-degree award	\$44,540
<u>492022</u>	Telecommunications Equipment Installers and Repairers, Except Line Installers	3,757	3,745	-12	-0.03 %	34	0	34	Postsecondary non-degree award	\$65,360
<u>492092</u>	Electric Motor, Power Tool, and Related Repairers	354	360	6	0.17 %	11	1	10	Postsecondary non-degree award	\$38,940
<u>492094</u>	Electrical and Electronics	1,882	1,893	11	0.06 %	33	1	32	Postsecondary non-degree	\$60,150

	Repairers, Commercial and Industrial Equipment								award	
<u>493011</u>	Aircraft Mechanics and Service Technicians	1,630	1,674	44	0.27 %	43	4	39	Postsecondary non-degree award	\$61,440
<u>499021</u>	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	8,464	8,717	253	0.30 %	154	25	129	Postsecondary non-degree award	\$57,470
<u>511011</u>	First-Line Supervisors of Production and Operating Workers	12,353	12,247	-106	-0.09 %	195	0	195	Postsecondary non-degree award	\$65,780
<u>515111</u>	Prepress Technicians and Workers	1,103	901	-202	-2.00 %	17	0	17	Postsecondary non-degree award	\$45,900
<u>532012</u>	Commercial Pilots	975	1,089	114	1.11 %	35	11	24	Postsecondary non-degree award	\$71,460
<u>111021</u>	General and Operations Managers	62,022	65,298	3,276	0.52 %	1,898	328	1,570	Associate's degree	\$131,810
<u>119021</u>	Construction Managers	8,684	8,745	61	0.07 %	128	6	122	Associate's degree	\$107,430
<u>173011</u>	Architectural and Civil Drafters	2,558	2,359	-199	-0.81 %	30	0	30	Associate's degree	\$57,020
<u>173013</u>	Mechanical Drafters	1,417	1,298	-119	-0.87 %	17	0	17	Associate's degree	\$64,780
<u>173022</u>	Civil Engineering Technicians	799	797	-2	-0.03 %	20	0	20	Associate's degree	\$60,300
<u>173023</u>	Electrical and Electronics Engineering Technicians	5,746	5,562	-184	-0.32 %	140	0	140	Associate's degree	\$64,440
<u>173024</u>	Electro-Mechanical Technicians	1,107	1,069	-38	-0.35 %	27	0	27	Associate's degree	\$54,510
<u>173025</u>	Environmental Engineering Technicians	795	848	53	0.65 %	24	5	19	Associate's degree	\$48,400
<u>173026</u>	Industrial Engineering Technicians	2,167	2,136	-31	-0.14 %	53	0	53	Associate's degree	\$57,140
<u>173027</u>	Mechanical	2,142	2,135	-7	-0.03 %	52	0	52	Associate's	\$56,550

	Engineering Technicians								degree	
<u>173029</u>	Engineering Technicians, Except Drafters, All Other	980	971	-9	-0.09 %	24	0	24	Associate's degree	\$79,510
<u>194031</u>	Chemical Technicians	1,972	2,033	61	0.31 %	65	6	59	Associate's degree	\$54,110
<u>194061</u>	Social Science Research Assistants	1,600	1,686	86	0.52 %	76	9	67	Associate's degree	\$53,340
<u>194091</u>	Environmental Science and Protection Technicians, Including Health	797	861	64	0.78 %	39	6	33	Associate's degree	\$48,150
<u>194099</u>	Life, Physical, and Social Science Technicians, All Other	1,523	1,650	127	0.80 %	77	13	64	Associate's degree	\$60,690
<u>232011</u>	Paralegals and Legal Assistants	6,909	7,162	253	0.36 %	177	25	152	Associate's degree	\$52,790
<u>252011</u>	Preschool Teachers, Except Special Education	17,301	19,706	2,405	1.31 %	746	240	506	Associate's degree	\$36,090
<u>274012</u>	Broadcast Technicians	734	721	-13	-0.18 %	14	0	14	Associate's degree	\$49,800
<u>291124</u>	Radiation Therapists	574	645	71	1.17 %	20	7	13	Associate's degree	\$89,960
<u>291126</u>	Respiratory Therapists	2,498	2,845	347	1.31 %	94	35	59	Associate's degree	\$69,970
<u>292012</u>	Medical and Clinical Laboratory Technicians	5,986	6,767	781	1.23 %	221	78	143	Associate's degree	\$42,860
<u>292021</u>	Dental Hygienists	6,263	6,833	570	0.87 %	160	57	103	Associate's degree	\$80,490
<u>292031</u>	Cardiovascular Technologists and Technicians	1,513	1,877	364	2.18 %	65	36	29	Associate's degree	\$71,740
<u>292032</u>	Diagnostic Medical Sonographers	1,687	2,111	424	2.27 %	74	42	32	Associate's degree	\$81,370
<u>292033</u>	Nuclear Medicine Technologists	680	691	11	0.16 %	14	1	13	Associate's degree	\$76,160
<u>292056</u>	Veterinary Technologists and Technicians	2,656	2,986	330	1.18 %	59	33	26	Associate's degree	\$42,020

<u>312011</u>	Occupational Therapy Assistants	1,224	1,510	286	2.12 %	64	29	35	Associate's degree	\$55,410
<u>312021</u>	Physical Therapist Assistants	2,295	2,968	673	2.60 %	133	67	66	Associate's degree	\$57,290
<u>434061</u>	Eligibility Interviewers, Government Programs	1,457	1,544	87	0.58 %	25	9	16	Associate's degree	\$51,710
<u>439031</u>	Desktop Publishers	455	350	-105	-2.59 %	12	0	12	Associate's degree	\$50,260
<u>499062</u>	Medical Equipment Repairers	1,190	1,203	13	0.11 %	22	1	21	Associate's degree	\$57,080
<u>519141</u>	Semiconductor Processors	789	735	-54	-0.71 %	16	0	16	Associate's degree	\$36,150
<u>111011</u>	Chief Executives	14,329	13,965	-364	-0.26 %	244	0	244	Bachelor's degree	\$207,510
<u>111031</u>	Legislators	698	662	-36	-0.53 %	15	0	15	Bachelor's degree	\$37,430
<u>112011</u>	Advertising and Promotions Managers	946	951	5	0.05 %	30	0	30	Bachelor's degree	\$129,440
<u>112021</u>	Marketing Managers	9,862	10,532	670	0.66 %	300	67	233	Bachelor's degree	\$139,170
<u>112022</u>	Sales Managers	13,710	14,249	539	0.39 %	378	54	324	Bachelor's degree	\$146,380
<u>112031</u>	Public Relations and Fundraising Managers	3,406	3,641	235	0.67 %	140	24	116	Bachelor's degree	\$120,660
<u>113021</u>	Computer and Information Systems Managers	15,417	17,284	1,867	1.15 %	369	187	182	Bachelor's degree	\$145,550
<u>113031</u>	Financial Managers	24,264	25,533	1,269	0.51 %	702	127	575	Bachelor's degree	\$132,100
<u>113051</u>	Industrial Production Managers	4,571	4,489	-82	-0.18 %	130	0	130	Bachelor's degree	\$113,430
<u>113061</u>	Purchasing Managers	2,781	2,804	23	0.08 %	68	2	66	Bachelor's degree	\$116,250
<u>113111</u>	Compensation and Benefits Managers	899	950	51	0.55 %	31	5	26	Bachelor's degree	\$132,720
<u>113121</u>	Human Resources Managers	4,330	4,652	322	0.72 %	158	32	126	Bachelor's degree	\$119,690
<u>113131</u>	Training and Development Managers	1,436	1,538	102	0.69 %	52	10	42	Bachelor's degree	\$131,600

<u>119031</u>	Education Administrators, Preschool and Childcare Center/Program	3,145	3,569	424	1.27 %	134	42	92	Bachelor's degree	\$60,740
<u>119039</u>	Education Administrators, All Other	908	977	69	0.74 %	33	7	26	Bachelor's degree	\$77,640
<u>119041</u>	Architectural and Engineering Managers	6,490	6,534	44	0.07 %	203	4	199	Bachelor's degree	\$140,210
<u>119111</u>	Medical and Health Services Managers	11,320	12,951	1,631	1.36 %	449	163	286	Bachelor's degree	\$112,050
<u>119121</u>	Natural Sciences Managers	3,091	3,220	129	0.41 %	77	13	64	Bachelor's degree	\$172,110
<u>119151</u>	Social and Community Service Managers	7,938	8,869	931	1.12 %	303	93	210	Bachelor's degree	\$67,580
<u>131041</u>	Compliance Officers	6,661	7,019	358	0.52 %	130	36	94	Bachelor's degree	\$82,020
<u>131051</u>	Cost Estimators	5,472	5,735	263	0.47 %	182	26	156	Bachelor's degree	\$70,980
<u>131081</u>	Logisticians	2,012	2,099	87	0.42 %	37	9	28	Bachelor's degree	\$79,970
<u>131111</u>	Management Analysts	26,231	29,989	3,758	1.35 %	740	376	364	Bachelor's degree	\$101,950
<u>131121</u>	Meeting, Convention, and Event Planners	2,501	2,727	226	0.87 %	53	23	30	Bachelor's degree	\$60,860
<u>131141</u>	Compensation, Benefits, and Job Analysis Specialists	3,142	3,250	108	0.34 %	87	11	76	Bachelor's degree	\$67,900
<u>131151</u>	Training and Development Specialists	6,029	6,418	389	0.63 %	186	39	147	Bachelor's degree	\$73,830
<u>131161</u>	Market Research Analysts and Marketing Specialists	17,950	20,740	2,790	1.46 %	493	279	214	Bachelor's degree	\$76,140
<u>132011</u>	Accountants and Auditors	39,031	42,100	3,069	0.76 %	1,349	307	1,042	Bachelor's degree	\$82,540
<u>132031</u>	Budget Analysts	1,777	1,896	119	0.65 %	56	12	44	Bachelor's degree	\$74,650
<u>132041</u>	Credit Analysts	2,097	2,200	103	0.48 %	101	10	91	Bachelor's	\$79,750

									degree	
<u>132051</u>	Financial Analysts	17,228	18,564	1,336	0.75 %	488	134	354	Bachelor's degree	\$105,130
<u>132052</u>	Personal Financial Advisors	7,827	9,208	1,381	1.64 %	334	138	196	Bachelor's degree	\$130,200
<u>132053</u>	Insurance Underwriters	4,016	3,545	-471	-1.24 %	76	0	76	Bachelor's degree	\$82,550
<u>132061</u>	Financial Examiners	1,371	1,481	110	0.77 %	45	11	34	Bachelor's degree	\$101,290
<u>132071</u>	Credit Counselors	1,170	1,357	187	1.49 %	39	19	20	Bachelor's degree	\$66,010
<u>132081</u>	Tax Examiners and Collectors, and Revenue Agents	2,162	2,108	-54	-0.25 %	89	0	89	Bachelor's degree	\$65,100
<u>132099</u>	Financial Specialists, All Other	2,564	2,731	167	0.63 %	43	17	26	Bachelor's degree	\$83,000
<u>151121</u>	Computer Systems Analysts	16,530	19,428	2,898	1.63 %	503	290	213	Bachelor's degree	\$93,010
<u>151131</u>	Computer Programmers	8,996	8,143	-853	-0.99 %	222	0	222	Bachelor's degree	\$95,370
<u>151132</u>	Software Developers, Applications	27,571	31,626	4,055	1.38 %	800	406	394	Bachelor's degree	\$109,430
<u>151133</u>	Software Developers, Systems Software	27,705	30,452	2,747	0.95 %	671	275	396	Bachelor's degree	\$113,410
<u>151141</u>	Database Administrators	3,803	4,180	377	0.95 %	120	38	82	Bachelor's degree	\$83,380
<u>151142</u>	Network and Computer Systems Administrators	9,873	10,511	638	0.63 %	191	64	127	Bachelor's degree	\$86,790
<u>152011</u>	Actuaries	979	1,143	164	1.56 %	45	16	29	Bachelor's degree	\$111,780
<u>152031</u>	Operations Research Analysts	3,219	4,162	943	2.60 %	151	94	57	Bachelor's degree	\$82,050
<u>171011</u>	Architects, Except Landscape and Naval	4,385	4,460	75	0.17 %	80	8	72	Bachelor's degree	\$90,430
<u>171012</u>	Landscape Architects	676	682	6	0.09 %	12	1	11	Bachelor's degree	\$86,670
<u>171022</u>	Surveyors	716	667	-49	-0.71 %	22	0	22	Bachelor's degree	\$60,030
<u>172011</u>	Aerospace	1,244	1,224	-20	-0.16 %	36	0	36	Bachelor's	\$110,800

	Engineers								degree	
<u>172031</u>	Biomedical Engineers	2,265	2,769	504	2.03 %	110	50	60	Bachelor's degree	\$93,020
<u>172041</u>	Chemical Engineers	875	897	22	0.25 %	26	2	24	Bachelor's degree	\$104,980
<u>172051</u>	Civil Engineers	6,441	6,691	250	0.38 %	215	25	190	Bachelor's degree	\$90,750
<u>172061</u>	Computer Hardware Engineers	3,634	3,816	182	0.49 %	93	18	75	Bachelor's degree	\$113,820
<u>172071</u>	Electrical Engineers	7,795	7,840	45	0.06 %	176	4	172	Bachelor's degree	\$107,820
<u>172072</u>	Electronics Engineers, Except Computer	4,383	4,473	90	0.20 %	106	9	97	Bachelor's degree	\$107,660
<u>172081</u>	Environmental Engineers	3,226	3,469	243	0.73 %	115	24	91	Bachelor's degree	\$86,670
<u>172111</u>	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	556	573	17	0.30 %	18	2	16	Bachelor's degree	\$92,730
<u>172112</u>	Industrial Engineers	7,211	7,407	196	0.27 %	232	20	212	Bachelor's degree	\$95,880
<u>172131</u>	Materials Engineers	1,371	1,388	17	0.12 %	50	2	48	Bachelor's degree	\$91,920
<u>172141</u>	Mechanical Engineers	9,497	9,774	277	0.29 %	329	28	301	Bachelor's degree	\$91,270
<u>172199</u>	Engineers, All Other	2,037	2,139	102	0.49 %	51	10	41	Bachelor's degree	\$109,980
<u>191022</u>	Microbiologists	2,050	2,136	86	0.41 %	64	9	55	Bachelor's degree	\$68,470
<u>191031</u>	Conservation Scientists	507	557	50	0.95 %	27	5	22	Bachelor's degree	\$69,520
<u>191099</u>	Life Scientists, All Other	775	815	40	0.50 %	28	4	24	Bachelor's degree	\$71,640
<u>192021</u>	Atmospheric and Space Scientists	446	506	60	1.27 %	14	6	8	Bachelor's degree	\$83,340
<u>192031</u>	Chemists	3,583	3,763	180	0.49 %	97	18	79	Bachelor's degree	\$79,300
<u>192032</u>	Materials Scientists	534	545	11	0.20 %	13	1	12	Bachelor's degree	\$82,440
<u>192041</u>	Environmental Scientists and	2,388	2,615	227	0.91 %	97	23	74	Bachelor's degree	\$78,830

	Specialists, Including Health									
<u>193011</u>	Economists	1,167	1,229	62	0.52 %	37	6	31	Bachelor's degree	\$93,610
<u>193099</u>	Social Scientists and Related Workers, All Other	802	851	49	0.59 %	15	5	10	Bachelor's degree	\$76,140
<u>194021</u>	Biological Technicians	4,711	5,068	357	0.73 %	168	36	132	Bachelor's degree	\$50,200
<u>211021</u>	Child, Family, and School Social Workers	9,472	10,206	734	0.75 %	301	73	228	Bachelor's degree	\$47,040
<u>211023</u>	Mental Health and Substance Abuse Social Workers	5,916	6,826	910	1.44 %	233	91	142	Bachelor's degree	\$47,470
<u>211029</u>	Social Workers, All Other	840	921	81	0.92 %	28	8	20	Bachelor's degree	\$72,200
<u>211091</u>	Health Educators	2,405	2,681	276	1.09 %	75	28	47	Bachelor's degree	\$56,110
<u>212011</u>	Clergy	757	900	143	1.75 %	30	14	16	Bachelor's degree	\$48,370
<u>252012</u>	Kindergarten Teachers, Except Special Education	3,668	3,950	282	0.74 %	135	28	107	Bachelor's degree	\$68,270
<u>252021</u>	Elementary School Teachers, Except Special Education	25,894	27,302	1,408	0.53 %	714	141	573	Bachelor's degree	\$71,390
<u>252022</u>	Middle School Teachers, Except Special and Career/Technical Education	17,017	17,944	927	0.53 %	469	93	376	Bachelor's degree	\$71,090
<u>252023</u>	Career/Technical Education Teachers, Middle School	447	472	25	0.55 %	12	2	10	Bachelor's degree	\$76,000
<u>252031</u>	Secondary School Teachers, Except Special and Career/Technical Education	23,191	24,449	1,258	0.53 %	676	126	550	Bachelor's degree	\$72,280
<u>252032</u>	Career/Technical Education Teachers, Secondary School	2,370	2,370	0	0.00 %	56	0	56	Bachelor's degree	\$72,670
<u>252053</u>	Special Education Teachers, Middle School	3,845	4,055	210	0.53 %	93	21	72	Bachelor's degree	\$67,910

<u>252054</u>	Special Education Teachers, Secondary School	4,122	4,346	224	0.53 %	100	22	78	Bachelor's degree	\$67,090
<u>253011</u>	Adult Basic and Secondary Education and Literacy Teachers and Instructors	2,145	2,300	155	0.70 %	56	16	40	Bachelor's degree	\$48,280
<u>254013</u>	Museum Technicians and Conservators	413	433	20	0.47 %	15	2	13	Bachelor's degree	\$53,450
<u>271011</u>	Art Directors	1,684	1,643	-41	-0.25 %	32	0	32	Bachelor's degree	\$108,590
<u>271014</u>	Multimedia Artists and Animators	1,837	1,880	43	0.23 %	38	4	34	Bachelor's degree	\$74,440
<u>271021</u>	Commercial and Industrial Designers	1,038	1,052	14	0.13 %	26	1	25	Bachelor's degree	\$75,510
<u>271024</u>	Graphic Designers	6,426	6,333	-93	-0.15 %	153	0	153	Bachelor's degree	\$56,520
<u>271025</u>	Interior Designers	1,326	1,332	6	0.05 %	33	1	32	Bachelor's degree	\$63,890
<u>272012</u>	Producers and Directors	2,850	3,027	177	0.60 %	110	18	92	Bachelor's degree	\$70,400
<u>272041</u>	Music Directors and Composers	680	687	7	0.10 %	21	1	20	Bachelor's degree	\$69,020
<u>273022</u>	Reporters and Correspondents	1,358	1,214	-144	-1.11 %	44	0	44	Bachelor's degree	\$55,660
<u>273031</u>	Public Relations Specialists	7,443	7,841	398	0.52 %	129	40	89	Bachelor's degree	\$64,760
<u>273041</u>	Editors	4,253	3,880	-373	-0.91 %	154	0	154	Bachelor's degree	\$74,370
<u>273042</u>	Technical Writers	2,288	2,444	156	0.66 %	68	16	52	Bachelor's degree	\$82,420
<u>273043</u>	Writers and Authors	2,891	2,946	55	0.19 %	54	6	48	Bachelor's degree	\$84,300
<u>273091</u>	Interpreters and Translators	2,326	3,066	740	2.80 %	111	74	37	Bachelor's degree	\$59,090
<u>274032</u>	Film and Video Editors	592	687	95	1.50 %	15	10	5	Bachelor's degree	\$50,100
<u>291031</u>	Dietitians and Nutritionists	1,999	2,319	320	1.50 %	47	32	15	Bachelor's degree	\$61,120
<u>291125</u>	Recreational Therapists	974	1,033	59	0.59 %	29	6	23	Bachelor's degree	\$42,130
<u>292011</u>	Medical and Clinical	6,367	7,165	798	1.19 %	232	80	152	Bachelor's	\$71,690

	Laboratory Technologists								degree	
<u>299011</u>	Occupational Health and Safety Specialists	1,094	1,145	51	0.46 %	27	5	22	Bachelor's degree	\$76,340
<u>299091</u>	Athletic Trainers	693	797	104	1.41 %	24	10	14	Bachelor's degree	\$52,310
<u>399032</u>	Recreation Workers	11,436	12,360	924	0.78 %	303	92	211	Bachelor's degree	\$27,770
<u>413031</u>	Securities, Commodities, and Financial Services Sales Agents	8,805	8,812	7	0.01 %	153	1	152	Bachelor's degree	\$125,870
<u>414011</u>	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	15,193	15,968	775	0.50 %	390	78	312	Bachelor's degree	\$101,420
<u>419031</u>	Sales Engineers	3,454	3,668	214	0.60 %	110	21	89	Bachelor's degree	\$114,320
<u>439081</u>	Proofreaders and Copy Markers	609	557	-52	-0.89 %	12	0	12	Bachelor's degree	\$46,070
<u>439111</u>	Statistical Assistants	653	592	-61	-0.98 %	26	0	26	Bachelor's degree	\$56,080
<u>532011</u>	Airline Pilots, Copilots, and Flight Engineers	436	449	13	0.29 %	12	1	11	Bachelor's degree	\$51,580
<u>535021</u>	Captains, Mates, and Pilots of Water Vessels	585	621	36	0.60 %	27	4	23	Bachelor's degree	\$64,260
<u>119032</u>	Education Administrators, Elementary and Secondary School	6,766	7,144	378	0.55 %	235	38	197	Master's degree	\$101,280
<u>119033</u>	Education Administrators, Postsecondary	10,153	10,995	842	0.80 %	379	84	295	Master's degree	\$99,460
<u>152041</u>	Statisticians	2,412	3,249	837	3.02 %	126	84	42	Master's degree	\$83,490
<u>191041</u>	Epidemiologists	426	466	40	0.90 %	17	4	13	Master's degree	\$81,750
<u>193032</u>	Industrial-Organizational Psychologists	357	385	28	0.76 %	11	3	8	Master's degree	\$93,500

<u>193039</u>	Psychologists, All Other	941	1,122	181	1.77 %	38	18	20	Master's degree	\$83,670
<u>193051</u>	Urban and Regional Planners	1,298	1,320	22	0.17 %	26	2	24	Master's degree	\$75,410
<u>211012</u>	Educational, Guidance, School, and Vocational Counselors	7,180	7,785	605	0.81 %	210	60	150	Master's degree	\$62,530
<u>211013</u>	Marriage and Family Therapists	461	552	91	1.82 %	19	9	10	Master's degree	\$45,290
<u>211014</u>	Mental Health Counselors	9,127	10,464	1,337	1.38 %	325	134	191	Master's degree	\$43,010
<u>211015</u>	Rehabilitation Counselors	6,704	7,281	577	0.83 %	198	58	140	Master's degree	\$34,580
<u>211022</u>	Healthcare Social Workers	11,990	13,451	1,461	1.16 %	435	146	289	Master's degree	\$53,240
<u>254012</u>	Curators	561	593	32	0.56 %	20	3	17	Master's degree	\$56,930
<u>254021</u>	Librarians	4,626	4,638	12	0.03 %	88	1	87	Master's degree	\$68,070
<u>259031</u>	Instructional Coordinators	3,591	3,862	271	0.73 %	62	27	35	Master's degree	\$66,960
<u>291071</u>	Physician Assistants	2,670	3,312	642	2.18 %	124	64	60	Master's degree	\$105,060
<u>291122</u>	Occupational Therapists	4,691	5,554	863	1.70 %	177	86	91	Master's degree	\$83,190
<u>291127</u>	Speech-Language Pathologists	3,962	4,542	580	1.38 %	158	58	100	Master's degree	\$81,290
<u>291199</u>	Health Diagnosing and Treating Practitioners, All Other	671	776	105	1.46 %	26	10	16	Master's degree	\$80,770
<u>151111</u>	Computer and Information Research Scientists	822	1,039	217	2.37 %	33	22	11	Doctoral or professional degree	\$122,130
<u>191021</u>	Biochemists and Biophysicists	5,028	5,338	310	0.60 %	165	31	134	Doctoral or professional degree	\$96,350
<u>191029</u>	Biological Scientists, All Other	1,965	2,072	107	0.53 %	64	11	53	Doctoral or professional degree	\$71,610
<u>191042</u>	Medical Scientists, Except Epidemiologists	10,165	10,746	581	0.56 %	373	58	315	Doctoral or professional degree	\$91,700

<u>192012</u>	Physicists	632	680	48	0.73 %	17	5	12	Doctoral or professional degree	\$95,470
<u>193031</u>	Clinical, Counseling, and School Psychologists	7,237	8,570	1,333	1.71 %	288	133	155	Doctoral or professional degree	\$77,580
<u>231011</u>	Lawyers	22,100	22,498	398	0.18 %	363	40	323	Doctoral or professional degree	\$152,990
<u>251011</u>	Business Teachers, Postsecondary	2,712	2,940	228	0.81 %	71	23	48	Doctoral or professional degree	\$139,500
<u>251021</u>	Computer Science Teachers, Postsecondary	946	1,024	78	0.80 %	25	8	17	Doctoral or professional degree	\$98,120
<u>251022</u>	Mathematical Science Teachers, Postsecondary	1,281	1,486	205	1.50 %	43	20	23	Doctoral or professional degree	\$89,700
<u>251031</u>	Architecture Teachers, Postsecondary	645	703	58	0.86 %	17	6	11	Doctoral or professional degree	\$84,910
<u>251032</u>	Engineering Teachers, Postsecondary	1,412	1,592	180	1.21 %	43	18	25	Doctoral or professional degree	\$119,810
<u>251042</u>	Biological Science Teachers, Postsecondary	2,405	2,770	365	1.42 %	78	36	42	Doctoral or professional degree	\$100,460
<u>251052</u>	Chemistry Teachers, Postsecondary	722	830	108	1.40 %	24	11	13	Doctoral or professional degree	\$106,810
<u>251054</u>	Physics Teachers, Postsecondary	519	594	75	1.36 %	17	8	9	Doctoral or professional degree	\$115,300
<u>251062</u>	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	334	383	49	1.38 %	11	5	6	Doctoral or professional degree	\$100,680
<u>251063</u>	Economics Teachers, Postsecondary	659	721	62	0.90 %	18	6	12	Doctoral or professional degree	\$132,820
<u>251065</u>	Political Science Teachers, Postsecondary	566	619	53	0.90 %	15	5	10	Doctoral or professional degree	\$126,950
<u>251066</u>	Psychology Teachers, Postsecondary	1,373	1,585	212	1.45 %	45	21	24	Doctoral or professional degree	\$102,600

<u>251067</u>	Sociology Teachers, Postsecondary	675	776	101	1.40 %	22	10	12	Doctoral or professional degree	\$82,790
<u>251071</u>	Health Specialties Teachers, Postsecondary	4,848	5,752	904	1.72 %	176	90	86	Doctoral or professional degree	\$122,540
<u>251072</u>	Nursing Instructors and Teachers, Postsecondary	1,130	1,350	220	1.79 %	42	22	20	Doctoral or professional degree	\$87,710
<u>251081</u>	Education Teachers, Postsecondary	1,263	1,373	110	0.84 %	33	11	22	Doctoral or professional degree	\$78,260
<u>251111</u>	Criminal Justice and Law Enforcement Teachers, Postsecondary	349	422	73	1.92 %	13	7	6	Doctoral or professional degree	\$68,660
<u>251112</u>	Law Teachers, Postsecondary	977	1,184	207	1.94 %	38	21	17	Doctoral or professional degree	\$147,370
<u>251113</u>	Social Work Teachers, Postsecondary	348	395	47	1.27 %	11	5	6	Doctoral or professional degree	\$72,220
<u>251121</u>	Art, Drama, and Music Teachers, Postsecondary	3,936	4,344	408	0.99 %	111	41	70	Doctoral or professional degree	\$96,110
<u>251122</u>	Communications Teachers, Postsecondary	637	697	60	0.90 %	17	6	11	Doctoral or professional degree	\$75,670
<u>251123</u>	English Language and Literature Teachers, Postsecondary	2,200	2,420	220	0.96 %	61	22	39	Doctoral or professional degree	\$75,390
<u>251124</u>	Foreign Language and Literature Teachers, Postsecondary	1,312	1,449	137	1.00 %	37	14	23	Doctoral or professional degree	\$82,940
<u>251125</u>	History Teachers, Postsecondary	781	856	75	0.92 %	22	8	14	Doctoral or professional degree	\$92,520
<u>251126</u>	Philosophy and Religion Teachers, Postsecondary	565	628	63	1.06 %	16	6	10	Doctoral or professional degree	\$98,360
<u>251191</u>	Graduate Teaching Assistants	1,465	1,564	99	0.66 %	36	10	26	Doctoral or professional degree	\$30,840
<u>251194</u>	Vocational	2,246	2,369	123	0.53 %	52	12	40	Doctoral or	\$54,640

	Education Teachers, Postsecondary								professional degree	
<u>291011</u>	Chiropractors	627	677	50	0.77 %	16	5	11	Doctoral or professional degree	\$91,180
<u>291021</u>	Dentists, General	4,631	5,037	406	0.84 %	135	41	94	Doctoral or professional degree	\$179,390
<u>291023</u>	Orthodontists	511	556	45	0.85 %	14	4	10	Doctoral or professional degree	\$225,620
<u>291041</u>	Optometrists	1,094	1,303	209	1.76 %	60	21	39	Doctoral or professional degree	\$115,790
<u>291051</u>	Pharmacists	6,993	7,172	179	0.25 %	181	18	163	Doctoral or professional degree	\$113,690
<u>291061</u>	Anesthesiologists	1,040	1,178	138	1.25 %	42	14	28	Doctoral or professional degree	\$258,230
<u>291062</u>	Family and General Practitioners	3,594	3,748	154	0.42 %	112	15	97	Doctoral or professional degree	\$212,210
<u>291063</u>	Internists, General	3,570	3,691	121	0.33 %	108	12	96	Doctoral or professional degree	\$230,440
<u>291064</u>	Obstetricians and Gynecologists	448	494	46	0.98 %	17	5	12	Doctoral or professional degree	\$249,510
<u>291066</u>	Psychiatrists	932	1,033	101	1.03 %	35	10	25	Doctoral or professional degree	\$176,640
<u>291067</u>	Surgeons	2,100	2,374	274	1.23 %	83	27	56	Doctoral or professional degree	\$232,760
<u>291069</u>	Physicians and Surgeons, All Other	10,898	12,269	1,371	1.19 %	430	137	293	Doctoral or professional degree	\$161,730
<u>291123</u>	Physical Therapists	7,676	9,640	1,964	2.30 %	402	196	206	Doctoral or professional degree	\$83,000
<u>291131</u>	Veterinarians	1,884	1,957	73	0.38 %	36	7	29	Doctoral or professional degree	\$112,040
<u>291181</u>	Audiologists	456	565	109	2.17 %	22	11	11	Doctoral or professional	\$77,820

									degree	
<u>119061</u>	Funeral Service Managers	762	789	27	0.35 %	20	3	17	Information Not Available	\$101,130
<u>131071</u>	Human Resources Specialists	13,399	14,025	626	0.46 %	389	63	326	Information Not Available	\$72,410
<u>131075</u>	Labor Relations Specialists	2,581	2,458	-123	-0.49 %	63	0	63	Information Not Available	\$64,310
<u>131131</u>	Fundraisers	3,040	3,380	340	1.07 %	76	34	42	Information Not Available	\$63,240
<u>151122</u>	Information Security Analysts	2,677	3,144	467	1.62 %	81	47	34	Information Not Available	\$94,190
<u>151134</u>	Web Developers	4,651	5,675	1,024	2.01 %	162	102	60	Information Not Available	\$78,470
<u>151143</u>	Computer Network Architects	4,501	4,902	401	0.86 %	98	40	58	Information Not Available	\$118,110
<u>151151</u>	Computer User Support Specialists	16,645	18,285	1,640	0.94 %	378	164	214	Information Not Available	\$62,270
<u>151152</u>	Computer Network Support Specialists	3,544	3,745	201	0.55 %	66	20	46	Information Not Available	\$83,000
<u>151199</u>	Computer Occupations, All Other	4,879	5,238	359	0.71 %	99	36	63	Information Not Available	\$93,740
<u>211094</u>	Community Health Workers	2,034	2,299	265	1.23 %	66	26	40	Information Not Available	\$43,220
<u>211099</u>	Community and Social Service Specialists, All Other	2,019	2,262	243	1.14 %	64	24	40	Information Not Available	\$41,460
<u>252051</u>	Special Education Teachers, Preschool	899	974	75	0.80 %	25	8	17	Information Not Available	\$58,040
<u>252052</u>	Special Education Teachers, Kindergarten and Elementary School	6,685	7,084	399	0.58 %	166	40	126	Information Not Available	\$68,190
<u>252059</u>	Special Education Teachers, All Other	745	813	68	0.88 %	21	7	14	Information Not Available	\$64,670
<u>291141</u>	Registered Nurses	81,259	94,080	12,821	1.48 %	3,199	1,282	1,917	Information Not Available	\$88,650
<u>291151</u>	Nurse Anesthetists	816	931	115	1.33 %	31	12	19	Information Not Available	\$167,160
<u>291161</u>	Nurse Midwives	331	396	65	1.81 %	14	6	8	Information Not Available	\$108,710
<u>291171</u>	Nurse Practitioners	5,250	6,799	1,549	2.62 %	279	155	124	Information	\$112,860

									Not Available	
<u>292034</u>	Radiologic Technologists	4,759	5,117	358	0.73 %	126	36	90	Information Not Available	\$71,790
<u>292035</u>	Magnetic Resonance Imaging Technologists	1,227	1,333	106	0.83 %	34	11	23	Information Not Available	\$82,660
<u>292057</u>	Ophthalmic Medical Technicians	1,254	1,452	198	1.48 %	32	20	12	Information Not Available	\$41,960
<u>292099</u>	Health Technologists and Technicians, All Other	2,088	2,524	436	1.91 %	65	44	21	Information Not Available	\$54,350
<u>299099</u>	Healthcare Practitioners and Technical Workers, All Other	543	627	84	1.45 %	19	8	11	Information Not Available	\$62,910
<u>311014</u>	Nursing Assistants	42,356	46,534	4,178	0.95 %	1,375	418	957	Information Not Available	\$30,130
<u>311015</u>	Orderlies	2,124	2,403	279	1.24 %	76	28	48	Information Not Available	\$34,820
<u>319097</u>	Phlebotomists	2,634	3,164	530	1.85 %	108	53	55	Information Not Available	\$38,240
<u>319099</u>	Healthcare Support Workers, All Other	1,373	1,516	143	1.00 %	43	14	29	Information Not Available	\$41,080
<u>394031</u>	Morticians, Undertakers, and Funeral Directors	705	756	51	0.70 %	21	5	16	Information Not Available	\$67,410
<u>419099</u>	Sales and Related Workers, All Other	1,155	1,232	77	0.65 %	24	8	16	Information Not Available	\$54,860
<u>439199</u>	Office and Administrative Support Workers, All Other	2,887	3,085	198	0.67 %	98	20	78	Information Not Available	\$54,380
<u>452092</u>	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	2,736	2,754	18	0.07 %	75	2	73	Information Not Available	\$26,660
<u>452093</u>	Farmworkers, Farm, Ranch, and Aquacultural Animals	1,032	1,084	52	0.49 %	33	5	28	Information Not Available	\$26,120
<u>499099</u>	Installation, Maintenance, and Repair Workers, All Other	2,121	2,172	51	0.24 %	37	5	32	Information Not Available	\$40,960

<u>513099</u>	Food Processing Workers, All Other	653	697	44	0.65 %	17	4	13	Information Not Available	\$29,300
<u>519199</u>	Production Workers, All Other	3,423	3,503	80	0.23 %	78	8	70	Information Not Available	\$34,330

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Industry Projections

Publishing Industries (except Internet)

Industries in the Publishing Industries subsector group comprises establishments engaged in the publishing of newspapers, magazines, other periodicals, and books, as well as database and software publishing. In general, these establishments, which are kno

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Software Developers, Applications	5,040	18.3	6,130	19.4	1,090	22 %	\$129,950
Software Developers, Systems Software	3,930	14.2	4,320	14.2	390	10 %	\$117,530
Editors	2,110	49.6	1,620	41.7	-490	-23 %	\$72,320
Market Research Analysts and Marketing Specialists	1,530	8.5	1,720	8.3	190	13 %	\$81,790
Computer and Information Systems Managers	1,250	8.1	1,440	8.3	190	16 %	\$163,690
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	1,250	8.2	1,530	9.6	280	23 %	\$118,790
Computer Programmers	1,240	13.8	1,360	16.7	120	9 %	\$105,010
Computer User Support Specialists	1,220	7.3	1,450	7.9	230	19 %	\$69,960
General and Operations Managers	1,030	1.7	1,000	1.5	-30	-4 %	\$171,610
Customer Service Representatives	940	1.7	870	1.5	-70	-7 %	\$47,180
Advertising Sales Agents	880	27.4	700	23.0	-180	-21 %	\$72,270
Computer Systems Analysts	780	4.7	990	5.1	210	27 %	\$103,250

Reporters and Correspondents	780	57.1	560	46.1	-220	-28 %	\$54,840
Office Clerks, General	710	1.1	550	0.9	-160	-23 %	\$34,430
Sales Managers	640	4.7	640	4.5	0	1 %	\$157,350
Marketing Managers	590	6.0	640	6.0	50	8 %	\$140,390
Accountants and Auditors	580	1.5	610	1.4	30	5 %	\$86,110
Graphic Designers	530	8.2	350	5.5	-180	-33 %	\$55,310
First-Line Supervisors of Office and Administrative Support Workers	520	1.4	450	1.2	-70	-13 %	\$87,810
Computer Occupations, All Other	510	10.4	580	11.1	70	15 %	\$106,590
Financial Managers	500	2.1	520	2.0	20	3 %	\$152,290
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	480	1.1	400	0.9	-80	-17 %	\$57,740
Bookkeeping, Accounting, and Auditing Clerks	460	1.1	330	0.9	-130	-27 %	\$48,660
Network and Computer Systems Administrators	450	4.6	490	4.6	40	8 %	\$95,620
Technical Writers	430	18.9	460	18.7	30	5 %	\$94,550
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	430	1.6	430	1.5	0	-0 %	\$81,440
Financial Analysts	410	2.4	450	2.4	40	9 %	\$91,600
Management Analysts	390	1.5	460	1.5	70	17 %	\$100,840
Computer Hardware Engineers	390	10.7	520	13.6	130	34 %	\$120,390
Web Developers	380	8.1	420	7.5	40	13 %	\$73,050
Sales Engineers	290	8.5	360	9.9	70	24 %	\$116,140
Industrial Engineers	260	3.6	310	4.1	50	17 %	\$99,830
Business Operations Specialists, All Other	250	2.0	270	2.0	20	9 %	\$98,010
Administrative Services Managers	240	1.8	240	1.7	0	-1 %	\$131,370
Managers, All Other	240	1.6	220	1.4	-20	-9 %	\$124,610
Industrial Production Managers	220	4.9	200	4.4	-20	-13 %	\$125,380

Human Resources Specialists	210	1.6	220	1.6	10	4 %	\$77,580
Training and Development Specialists	200	3.3	230	3.5	30	15 %	\$87,910
Computer Network Support Specialists	190	5.3	210	5.7	20	14 %	\$89,350
Chief Executives	180	1.2	160	1.2	-20	-10 %	\$243,720
Information Security Analysts	170	6.3	190	6.1	20	13 %	\$108,480
Lawyers	170	0.8	210	0.9	40	26 %	\$184,030
Shipping, Receiving, and Traffic Clerks	170	1.0	140	0.9	-30	-17 %	\$37,450
Architectural and Engineering Managers	160	2.4	190	2.9	30	21 %	\$153,900
Computer Network Architects	160	3.6	180	3.8	20	15 %	\$134,590
Human Resources Managers	150	3.4	160	3.4	10	7 %	\$147,640
Public Relations Specialists	150	2.0	140	1.8	-10	-5 %	\$64,970
Advertising and Promotions Managers	140	15.2	110	11.7	-30	-23 %	\$137,500
Art Directors	140	8.4	120	7.2	-20	-16 %	\$95,010
Production, Planning, and Expediting Clerks	140	2.0	120	1.6	-20	-16 %	\$53,210
Multimedia Artists and Animators	120	6.7	140	7.5	20	15 %	\$83,560
Billing and Posting Clerks	120	1.1	110	0.9	-10	-14 %	\$46,480

Industry Projections

Personal and Laundry Services

Industries in the Personal and Laundry Services subsector group establishments that provide personal and laundry services to individuals, households, and businesses. Services performed include: personal care services; death care services; laundry and drycleaning services; and a wide range of other personal services, such as pet care (except veterinary) services, photofinishing services, temporary parking services, and dating services. The Personal and Laundry Services subsector is by no means all-inclusive of the services that could be termed personal services (i.e., those provided to individuals rather than businesses). There are many other subsectors, as well as sectors, that provide services to persons. Establishments providing legal, accounting, tax preparation, architectural, portrait photography, and similar professional services are classified in Sector 54, Professional, Scientific, and Technical Services; those providing job placement, travel arrangement, home security, interior and exterior house cleaning, exterminating, lawn and garden care, and similar support services are classified in Sector 56, Administrative and Support, Waste Management and Remediation Services; those providing health and social services are classified in Sector 62, Health Care and Social Assistance; those providing amusement and recreation services are classified in Sector 71, Arts, Entertainment and Recreation; those providing educational instruction are classified in Sector 61, Educational Services; those providing repair services are classified in Subsector 811, Repair and Maintenance; and those providing spiritual, civic, and advocacy services are classified in Subsector 813, Religious, Grantmaking, Civic, Professional, and Similar Organizations.

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Hairdressers, Hairstylists, and Cosmetologists	10,520	56.1	11,650	56.2	1,130	11 %	\$35,450
Manicurists and Pedicurists	3,890	69.7	4,310	69.9	420	11 %	\$24,330
Receptionists and Information Clerks	2,650	13.3	2,890	13.9	240	9 %	\$26,560
Nonfarm Animal Caretakers	2,100	51.7	2,470	53.8	370	18 %	\$24,580
Parking Lot Attendants	1,900	63.7	1,930	62.3	30	2 %	\$34,290
Counter and Rental Clerks	1,520	16.4	1,510	16.0	-10	-0 %	\$22,410
First-Line Supervisors of Personal Service Workers	990	12.1	1,080	11.9	90	10 %	\$42,360
Skincare Specialists	870	59.3	970	59.2	100	11 %	\$43,240

Funeral Attendants	680	96.4	670	96.4	-10	-1 %	\$36,200
Cashiers	620	0.9	620	0.9	0	-0 %	\$24,450
Fitness Trainers and Aerobics Instructors	570	5.2	610	5.2	40	8 %	\$32,620
Pressers, Textile, Garment, and Related Materials	540	67.2	510	67.5	-30	-5 %	\$24,730
Landscaping and Groundskeeping Workers	480	1.7	500	1.7	20	4 %	\$36,740
Customer Service Representatives	450	0.8	470	0.8	20	5 %	\$35,670
Shampooers	430	69.7	470	70.0	40	11 %	\$21,440
General and Operations Managers	380	0.6	400	0.6	20	4 %	\$84,570
First-Line Supervisors of Production and Operating Workers	300	2.4	280	2.3	-20	-5 %	\$43,160
First-Line Supervisors of Office and Administrative Support Workers	250	0.7	260	0.7	10	5 %	\$63,100
Taxi Drivers and Chauffeurs	250	2.4	260	2.3	10	6 %	\$27,820
Bookkeeping, Accounting, and Auditing Clerks	220	0.5	190	0.5	-30	-11 %	\$35,760
Funeral Service Managers	210	27.6	210	27.0	0	1 %	\$101,130
Retail Salespersons	170	0.1	190	0.2	20	13 %	\$22,760
First-Line Supervisors of Non-Retail Sales Workers	130	1.3	140	1.3	10	4 %	\$70,100
First-Line Supervisors of Retail Sales Workers	110	0.3	120	0.3	10	6 %	\$35,760
Laborers and Freight, Stock, and Material Movers, Hand	100	0.3	100	0.3	0	0 %	\$23,920

Industry Projections

Social Assistance

Industries in the Social Assistance subsector provide a wide variety of social assistance services directly to their clients. These services do not include residential or accommodation services, except on a short stay basis.

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Personal Care Aides	15,300	45.6	19,080	45.6	3,780	25 %	\$27,470
Preschool Teachers, Except Special Education	13,920	80.4	16,010	81.3	2,090	15 %	\$33,100
Social and Human Service Assistants	8,250	41.5	9,470	42.8	1,220	15 %	\$32,880
Childcare Workers	6,980	31.7	8,040	33.2	1,060	15 %	\$26,570
Teacher Assistants	5,360	15.1	6,190	16.2	830	16 %	\$25,230
Home Health Aides	4,150	18.3	5,220	16.7	1,070	26 %	\$26,920
Social and Community Service Managers	3,460	43.5	3,970	44.7	510	15 %	\$62,530
Child, Family, and School Social Workers	3,150	33.2	3,550	34.8	400	13 %	\$41,200
Rehabilitation Counselors	3,140	46.8	3,430	47.1	290	9 %	\$33,320
Office Clerks, General	2,890	4.6	3,180	5.0	290	10 %	\$32,140
Healthcare Social Workers	2,830	23.6	3,440	25.5	610	21 %	\$48,120
Registered Nurses	2,590	3.2	3,150	3.3	560	21 %	\$63,030
Education Administrators, Preschool and Childcare Center/Program	2,340	74.3	2,690	75.4	350	15 %	\$58,400
Mental Health and Substance Abuse Social Workers	2,170	36.7	2,480	36.3	310	14 %	\$42,840
Mental Health	2,120	23.2	2,400	22.9	280	13 %	\$38,830

Counselors							
Nursing Assistants	1,680	4.0	2,090	4.5	410	24 %	\$28,340
Residential Advisors	1,520	30.3	1,730	31.8	210	14 %	\$28,540
First-Line Supervisors of Personal Service Workers	1,430	17.4	1,700	18.6	270	19 %	\$45,080
General and Operations Managers	1,410	2.3	1,640	2.5	230	16 %	\$84,750
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,350	2.9	1,480	3.2	130	10 %	\$36,130
Community and Social Service Specialists, All Other	1,080	53.4	1,240	54.9	160	15 %	\$37,310
Bookkeeping, Accounting, and Auditing Clerks	1,070	2.6	1,060	2.8	-10	-1 %	\$40,280
Educational, Guidance, School, and Vocational Counselors	960	13.3	1,020	13.1	60	6 %	\$45,650
Bus Drivers, School or Special Client	900	7.2	1,060	7.6	160	18 %	\$26,360
Executive Secretaries and Executive Administrative Assistants	860	3.2	860	3.4	0	0 %	\$47,740
Receptionists and Information Clerks	830	4.2	870	4.2	40	4 %	\$29,690
Clinical, Counseling, and School Psychologists	810	11.2	950	11.1	140	17 %	\$71,740
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	800	1.4	880	1.5	80	10 %	\$29,580
First-Line Supervisors of Office and Administrative Support Workers	790	2.2	910	2.4	120	15 %	\$53,160
Licensed Practical and Licensed Vocational Nurses	700	4.2	860	4.9	160	22 %	\$47,830
Adult Basic and Secondary Education and Literacy Teachers and Instructors	620	29.1	680	29.7	60	9 %	\$47,770
Accountants and Auditors	580	1.5	660	1.6	80	14 %	\$64,890

Light Truck or Delivery Services Drivers	580	2.5	690	2.8	110	18 %	\$25,280
Taxi Drivers and Chauffeurs	580	5.7	700	6.3	120	20 %	\$26,110
Medical and Health Services Managers	560	5.0	680	5.2	120	20 %	\$107,860
Cooks, Institution and Cafeteria	500	6.4	580	7.0	80	17 %	\$31,170
Occupational Therapists	470	9.9	540	9.7	70	15 %	\$74,040
Human Resources Specialists	460	3.4	500	3.5	40	7 %	\$54,560
Training and Development Specialists	430	7.1	460	7.2	30	8 %	\$49,350
Community Health Workers	420	20.7	490	21.2	70	16 %	\$37,360
Fundraisers	410	13.4	470	13.8	60	14 %	\$49,490
Public Relations Specialists	410	5.5	470	6.0	60	15 %	\$56,890
Speech-Language Pathologists	410	10.5	490	10.8	80	18 %	\$67,830
Chief Executives	400	2.8	410	2.9	10	3 %	\$147,160
Self-Enrichment Education Teachers	400	3.8	450	3.7	50	13 %	\$53,150
Administrative Services Managers	380	2.9	430	3.1	50	15 %	\$70,630
Billing and Posting Clerks	380	3.4	440	3.6	60	17 %	\$37,900
Financial Managers	370	1.5	430	1.7	60	14 %	\$93,340
Substance Abuse and Behavioral Disorder Counselors	370	9.2	410	8.6	40	13 %	\$38,370
Social Workers, All Other	300	36.2	350	38.0	50	15 %	\$59,250
Maids and Housekeeping Cleaners	300	1.2	350	1.3	50	19 %	\$26,720
Health Educators	290	12.1	330	12.4	40	14 %	\$43,400
Eligibility Interviewers, Government Programs	280	19.1	310	20.3	30	13 %	\$47,080
Combined Food Preparation and Serving Workers, Including Fast Food	250	0.5	300	0.6	50	17 %	\$27,370

Public Relations and Fundraising Managers	230	6.7	260	7.2	30	15 %	\$114,410
Dietitians and Nutritionists	230	11.4	270	11.5	40	17 %	\$53,390
Special Education Teachers, Preschool	220	24.4	260	26.7	40	19 %	\$42,640
Physical Therapists	220	2.9	270	2.8	50	20 %	\$79,480
Marriage and Family Therapists	180	38.8	200	36.4	20	12 %	\$43,940
Human Resources Assistants, Except Payroll and Timekeeping	180	5.6	190	6.1	10	4 %	\$38,220
Stock Clerks and Order Fillers	180	0.4	180	0.4	0	5 %	\$29,630
Psychologists, All Other	160	17.4	190	16.5	30	13 %	\$50,030
Recreational Therapists	150	15.8	180	17.7	30	19 %	\$42,400
Human Resources Managers	140	3.2	160	3.4	20	15 %	\$85,360
Occupational Therapy Aides	140	20.4	160	19.9	20	16 %	\$27,270
Management Analysts	130	0.5	150	0.5	20	13 %	\$68,650
Business Operations Specialists, All Other	130	1.0	140	1.1	10	14 %	\$54,840
Protective Service Workers, All Other	130	5.2	150	5.6	20	16 %	\$30,440
Psychiatrists	110	11.4	120	11.7	10	14 %	\$169,240
Payroll and Timekeeping Clerks	110	2.8	120	3.1	10	4 %	\$43,750
Compliance Officers	100	1.5	120	1.7	20	15 %	\$79,520

Industry Projections

Nursing and Residential Care Facilities

Industries in the Nursing and Residential Care Facilities subsector provide residential care combined with either nursing, supervisory, or other types of care as required by the residents. In this subsector, the facilities are a significant part of the production process and the care provided is a mix of health and social services with the health services being largely some level of nursing services.

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Nursing Assistants	25,190	59.5	26,070	56.0	880	3 %	\$28,480
Licensed Practical and Licensed Vocational Nurses	8,040	48.8	8,090	46.0	50	1 %	\$54,220
Registered Nurses	7,590	9.3	8,100	8.6	510	7 %	\$70,670
Social and Human Service Assistants	4,270	21.5	4,680	21.1	410	9 %	\$30,390
Food Servers, Nonrestaurant	3,280	49.9	3,740	51.9	460	14 %	\$21,760
Maids and Housekeeping Cleaners	2,560	10.2	2,790	10.4	230	9 %	\$24,990
Cooks, Institution and Cafeteria	2,150	27.7	2,390	28.5	240	11 %	\$32,280
Mental Health Counselors	2,140	23.5	2,440	23.3	300	14 %	\$34,600
Recreation Workers	2,050	17.9	2,210	17.9	160	8 %	\$28,970
Residential Advisors	1,840	36.7	1,950	36.0	110	6 %	\$27,930
Rehabilitation Counselors	1,750	26.1	1,910	26.2	160	9 %	\$30,880
Medical and Health Services Managers	1,510	13.3	1,620	12.5	110	7 %	\$82,730
Receptionists and Information Clerks	1,440	7.2	1,640	7.9	200	14 %	\$27,990
Social and Community	1,190	15.0	1,290	14.6	100	9 %	\$55,030

Service Managers							
Healthcare Social Workers	1,150	9.6	1,190	8.8	40	3 %	\$53,430
Maintenance and Repair Workers, General	1,090	4.8	1,220	5.0	130	12 %	\$40,960
Substance Abuse and Behavioral Disorder Counselors	1,050	26.4	1,250	26.1	200	18 %	\$33,680
Mental Health and Substance Abuse Social Workers	1,020	17.3	1,190	17.4	170	16 %	\$33,940
Food Preparation Workers	980	4.8	920	4.3	-60	-6 %	\$24,100
Laundry and Dry-Cleaning Workers	910	15.3	930	16.0	20	2 %	\$23,940
Dishwashers	880	5.9	1,020	7.1	140	15 %	\$21,420
Child, Family, and School Social Workers	850	9.0	860	8.4	10	1 %	\$37,910
Dietetic Technicians	790	48.8	830	46.7	40	5 %	\$23,160
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	770	1.4	840	1.5	70	9 %	\$29,360
Combined Food Preparation and Serving Workers, Including Fast Food	730	1.5	790	1.5	60	9 %	\$22,630
First-Line Supervisors of Personal Service Workers	720	8.8	800	8.8	80	11 %	\$41,370
Physical Therapists	690	9.0	670	6.9	-20	-3 %	\$88,840
Office Clerks, General	690	1.1	720	1.1	30	4 %	\$32,470
Occupational Therapists	660	14.2	640	11.5	-20	-3 %	\$88,090
General and Operations Managers	650	1.0	720	1.1	70	12 %	\$101,980
Psychiatric Aides	630	23.6	710	25.6	80	13 %	\$27,570
Childcare Workers	560	2.5	560	2.3	0	-0 %	\$26,430
First-Line Supervisors of Food Preparation and Serving Workers	540	2.6	590	2.6	50	11 %	\$45,930
First-Line Supervisors of Office and Administrative Support Workers	500	1.4	540	1.4	40	9 %	\$59,330

Medical Records and Health Information Technicians	450	8.0	460	7.1	10	2 %	\$43,430
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	430	0.9	450	1.0	20	5 %	\$35,640
Bookkeeping, Accounting, and Auditing Clerks	420	1.0	390	1.0	-30	-8 %	\$43,400
Occupational Therapy Assistants	390	31.9	430	28.2	40	9 %	\$60,370
Special Education Teachers, All Other	380	50.9	410	50.1	30	7 %	\$54,330
Physical Therapist Assistants	370	16.3	410	13.7	40	9 %	\$63,860
Recreational Therapists	340	35.0	360	34.7	20	5 %	\$40,950
Speech-Language Pathologists	320	8.1	330	7.2	10	2 %	\$91,520
Food Service Managers	270	3.0	300	3.3	30	14 %	\$68,010
Training and Development Specialists	250	4.2	260	4.0	10	3 %	\$56,770
First-Line Supervisors of Housekeeping and Janitorial Workers	250	3.8	270	4.0	20	8 %	\$48,170
Administrative Services Managers	240	1.8	260	1.9	20	10 %	\$75,270
Taxi Drivers and Chauffeurs	240	2.4	280	2.5	40	17 %	\$27,720
Dietitians and Nutritionists	230	11.5	240	10.2	10	3 %	\$55,600
Payroll and Timekeeping Clerks	210	5.3	200	5.2	-10	-7 %	\$45,750
First-Line Supervisors of Mechanics, Installers, and Repairers	210	2.2	230	2.4	20	10 %	\$65,190
Human Resources Specialists	200	1.5	210	1.5	10	4 %	\$53,350
Educational, Guidance, School, and Vocational Counselors	200	2.8	210	2.7	10	4 %	\$46,170
Community Health Workers	200	9.9	230	9.8	30	12 %	\$33,530
Accountants and Auditors	180	0.5	190	0.5	10	8 %	\$66,910

Switchboard Operators, Including Answering Service	180	5.9	120	5.9	-60	-34 %	\$27,280
Security Guards	150	0.7	180	0.8	30	16 %	\$30,930
Billing and Posting Clerks	140	1.2	150	1.2	10	7 %	\$42,600
Financial Managers	130	0.5	140	0.5	10	8 %	\$117,410
Chief Executives	120	0.8	120	0.8	0	-2 %	\$141,220
Healthcare Support Workers, All Other	120	8.4	120	8.2	0	8 %	\$26,260
Market Research Analysts and Marketing Specialists	100	0.6	130	0.6	30	23 %	\$68,550

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Industry Projections

Food Services and Drinking Places

Industries in the Food Services and Drinking Places subsector prepare meals, snacks, and beverages to customer order for immediate on-premises and off-premises consumption. There is a wide range of establishments in these industries. Some provide food and drink only; while others provide various combinations of seating space, waiter/waitress services and incidental amenities, such as limited entertainment. The industries in the subsector are grouped based on the type and level of services provided. The industry groups are full-service restaurants; limited-service eating places; special food services, such as food service contractors, caterers, and mobile food services, and drinking places. Food services and drink activities at hotels and motels; amusement parks, theaters, casinos, country clubs, and similar recreational facilities; and civic and social organizations are included in this subsector only if these services are provided by a separate establishment primarily engaged in providing food and beverage services. Excluded from this subsector are establishments operating dinner cruises. These establishments are classified in Subsector 487, Scenic and Sightseeing Transportation because those establishments utilize transportation equipment to provide scenic recreational entertainment.

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Waiters and Waitresses	51,290	87.5	52,250	86.7	960	2 %	\$26,980
Cooks, Restaurant	22,130	90.6	25,430	91.2	3,300	15 %	\$27,750
First-Line Supervisors of Food Preparation and Serving Workers	16,000	77.7	17,730	78.5	1,730	11 %	\$35,510
Bartenders	12,880	71.9	14,380	72.7	1,500	12 %	\$27,270
Dishwashers	12,150	81.1	11,220	78.4	-930	-8 %	\$22,260
Food Preparation Workers	11,490	56.3	12,330	57.3	840	7 %	\$23,600
Dining Room and Cafeteria Attendants and Bartender Helpers	7,190	75.1	7,520	74.7	330	5 %	\$22,610
Cashiers	5,720	8.3	5,900	8.5	180	3 %	\$23,970
Cooks, Short Order	4,320	82.8	3,950	80.6	-370	-9 %	\$26,250
Chefs and Head Cooks	2,960	71.5	3,200	71.3	240	8 %	\$54,100
General and Operations Managers	2,480	4.0	2,650	4.1	170	7 %	\$99,820
Driver/Sales Workers	2,280	27.9	2,490	29.2	210	9 %	\$25,510

Light Truck or Delivery Services Drivers	2,280	9.6	2,460	10.0	180	8 %	\$29,130
Cooks, Institution and Cafeteria	1,880	24.1	2,180	26.0	300	16 %	\$33,660
Office Clerks, General	1,150	1.8	1,160	1.8	10	0 %	\$34,000
Bookkeeping, Accounting, and Auditing Clerks	760	1.8	680	1.8	-80	-10 %	\$42,680
Maintenance and Repair Workers, General	410	1.8	430	1.8	20	7 %	\$36,150
Sales Representatives, Services, All Other	210	1.1	220	1.0	10	4 %	\$60,290
Food Batchmakers	180	8.2	200	8.6	20	10 %	\$24,200
Chief Executives	170	1.2	160	1.2	-10	-5 %	\$184,120
Stock Clerks and Order Fillers	140	0.3	150	0.3	10	5 %	\$23,440
Customer Service Representatives	130	0.2	140	0.2	10	7 %	\$32,150

Industry Projections

Broadcasting (except Internet)

Industries in the Broadcasting (except Internet) subsector include establishments that create content or acquire the right to distribute content and subsequently broadcast the content. The industry groups (Radio and Television Broadcasting and Cable and Other Subscription Programming) are based on differences in the methods of communication and the nature of services provided. The Radio and Television Broadcasting industry group includes establishments that operate broadcasting studios and facilities for over the air or satellite delivery of radio and television programs of entertainment, news, talk, and the like. These establishments are often engaged in the production and purchase of programs and generating revenues from the sale of air time to advertisers and from donations, subsidies, and/or the sale of programs. The Cable and Other Subscription Programming industry group includes establishments operating studios and facilities for the broadcasting of programs that are typically narrowcast in nature (limited format, such as news, sports, education, and youth-oriented programming) on a subscription or fee basis. The distribution of cable and other subscription programming is included in Subsector 517, Telecommunications. Establishments that broadcast exclusively on the Internet are included in Subsector 516, Internet Publishing and Broadcasting.

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Broadcast Technicians	590	80.0	570	79.2	-20	-3 %	\$49,910
Camera Operators, Television, Video, and Motion Picture	230	39.3	250	41.2	20	9 %	\$52,440
Public Relations Specialists	180	2.4	180	2.3	0	2 %	\$51,520
General and Operations Managers	170	0.3	180	0.3	10	4 %	\$105,710
Film and Video Editors	110	18.1	140	19.8	30	27 %	\$35,650

Industry Projections

Construction

The construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this sector.

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Construction Laborers	13,500	58.5	14,710	60.6	1,210	9 %	\$53,560
Carpenters	12,990	55.3	13,520	55.6	530	4 %	\$58,350
Electricians	11,490	73.2	12,780	74.7	1,290	11 %	\$64,520
Plumbers, Pipefitters, and Steamfitters	7,680	71.0	8,180	71.7	500	6 %	\$70,160
First-Line Supervisors of Construction Trades and Extraction Workers	6,690	65.8	7,080	66.6	390	6 %	\$80,540
Office Clerks, General	5,110	8.1	5,140	8.1	30	0 %	\$35,970
Operating Engineers and Other Construction Equipment Operators	4,080	71.2	4,240	71.6	160	4 %	\$69,200
Construction Managers	4,020	46.3	3,980	45.5	-40	-1 %	\$107,420
General and Operations Managers	3,940	6.4	4,170	6.4	230	6 %	\$128,850
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	3,940	46.6	4,400	50.4	460	12 %	\$54,920
Cost Estimators	3,620	66.1	3,820	66.6	200	6 %	\$73,620
Painters, Construction and Maintenance	3,000	45.8	3,100	46.4	100	3 %	\$50,480
Bookkeeping, Accounting, and Auditing Clerks	2,930	7.1	2,640	7.1	-290	-10 %	\$46,010
Heavy and Tractor-Trailer	2,130	8.6	2,180	8.4	50	3 %	\$55,910

Truck Drivers							
Roofers	1,640	78.1	1,770	79.5	130	8 %	\$47,680
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,630	3.6	1,640	3.5	10	0 %	\$41,350
Sheet Metal Workers	1,620	64.8	1,650	64.3	30	2 %	\$61,250
Brickmasons and Blockmasons	1,590	73.2	1,860	76.2	270	17 %	\$79,440
Drywall and Ceiling Tile Installers	1,590	81.2	1,560	81.2	-30	-2 %	\$48,010
Helpers--Electricians	1,430	96.9	1,580	97.2	150	11 %	\$33,430
Cement Masons and Concrete Finishers	1,050	81.3	1,120	82.0	70	7 %	\$46,850
First-Line Supervisors of Office and Administrative Support Workers	1,040	2.9	1,100	2.9	60	6 %	\$58,320
Helpers--Carpenters	1,040	83.2	1,090	83.0	50	5 %	\$37,360
Sales Representatives, Services, All Other	910	4.5	970	4.4	60	6 %	\$77,970
Paving, Surfacing, and Tamping Equipment Operators	830	77.4	820	76.6	-10	-1 %	\$53,540
Glaziers	820	80.7	800	80.3	-20	-2 %	\$57,110
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	800	90.5	850	90.6	50	6 %	\$33,200
Excavating and Loading Machine and Dragline Operators	800	68.7	820	68.8	20	3 %	\$77,060
Structural Iron and Steel Workers	790	90.9	760	90.1	-30	-4 %	\$69,680
Accountants and Auditors	750	1.9	790	1.9	40	5 %	\$84,670
First-Line Supervisors of Mechanics, Installers, and Repairers	740	8.1	800	8.4	60	8 %	\$83,000
Chief Executives	670	4.7	640	4.6	-30	-4 %	\$206,680
Maintenance and Repair Workers, General	640	2.8	680	2.8	40	5 %	\$42,960
Tile and Marble Setters	560	51.0	570	51.6	10	2 %	\$75,790
Elevator Installers and Repairers	550	100.0	590	100.0	40	6 %	\$81,460

Security and Fire Alarm Systems Installers	550	41.8	600	42.5	50	10 %	\$61,610
Telecommunications Line Installers and Repairers	540	18.0	630	22.6	90	16 %	\$64,920
Helpers--Installation, Maintenance, and Repair Workers	540	29.3	570	29.9	30	7 %	\$47,470
Carpet Installers	520	41.7	470	39.2	-50	-10 %	\$56,760
Tapers	510	81.2	500	81.2	-10	-2 %	\$76,940
Financial Managers	490	2.0	510	2.0	20	5 %	\$135,170
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	480	96.8	550	97.0	70	15 %	\$46,260
Laborers and Freight, Stock, and Material Movers, Hand	480	1.5	510	1.5	30	5 %	\$33,930
Insulation Workers, Floor, Ceiling, and Wall	470	96.1	460	95.9	-10	-1 %	\$37,050
Installation, Maintenance, and Repair Workers, All Other	460	21.8	470	21.8	10	2 %	\$42,070
Boilermakers	430	93.6	460	93.8	30	7 %	\$64,760
Fence Erectors	430	85.2	440	86.0	10	2 %	\$36,760
Receptionists and Information Clerks	420	2.1	400	1.9	-20	-5 %	\$34,580
Mobile Heavy Equipment Mechanics, Except Engines	420	29.1	430	29.1	10	3 %	\$76,900
Civil Engineers	370	5.8	400	5.9	30	6 %	\$110,270
Stonemasons	350	62.3	390	65.1	40	13 %	\$80,040
Floor Layers, Except Carpet, Wood, and Hard Tiles	350	54.5	400	57.3	50	13 %	\$40,220
Light Truck or Delivery Services Drivers	350	1.5	370	1.5	20	5 %	\$39,570
Dispatchers, Except Police, Fire, and Ambulance	330	9.2	360	9.6	30	7 %	\$46,040
Insulation Workers, Mechanical	330	95.9	370	96.4	40	14 %	\$57,270
Payroll and Timekeeping Clerks	310	7.8	300	7.8	-10	-5 %	\$45,760

Welders, Cutters, Solderers, and Brazers	310	9.1	320	9.3	10	3 %	\$59,400
Customer Service Representatives	290	0.5	310	0.5	20	6 %	\$38,800
Retail Salespersons	280	0.2	300	0.3	20	9 %	\$31,630
Bus and Truck Mechanics and Diesel Engine Specialists	250	7.2	260	6.9	10	5 %	\$55,200
Hazardous Materials Removal Workers	240	18.0	250	17.5	10	5 %	\$57,890
Structural Metal Fabricators and Fitters	240	15.8	240	15.9	0	1 %	\$47,070
Production, Planning, and Expediting Clerks	220	3.1	240	3.2	20	6 %	\$51,330
Administrative Services Managers	210	1.6	220	1.6	10	7 %	\$104,290
Plasterers and Stucco Masons	210	69.9	220	70.5	10	3 %	\$51,520
Millwrights	210	35.0	240	35.4	30	17 %	\$58,770
Pipelayers	190	50.7	200	50.8	10	3 %	\$81,450
Construction and Related Workers, All Other	190	71.0	200	71.0	10	3 %	\$38,990
Mechanical Door Repairers	190	52.3	200	53.7	10	6 %	\$40,450
Cabinetmakers and Bench Carpenters	180	9.8	190	9.6	10	2 %	\$45,710
Architectural and Engineering Managers	170	2.6	180	2.8	10	8 %	\$114,520
Purchasing Agents, Except Wholesale, Retail, and Farm Products	170	2.6	180	2.8	10	7 %	\$69,640
Billing and Posting Clerks	160	1.4	170	1.4	10	7 %	\$41,040
Pile-Driver Operators	160	94.5	160	95.2	0	3 %	\$72,510
Crane and Tower Operators	160	35.3	170	35.1	10	3 %	\$64,480
Sales Managers	150	1.1	160	1.1	10	6 %	\$138,650
Stock Clerks and Order Fillers	150	0.3	160	0.4	10	6 %	\$30,710
Helpers--Roofers	140	100.0	150	100.0	10	9 %	\$29,580
Architectural and Civil Drafters	130	4.9	120	5.1	-10	-5 %	\$59,660

Industrial Truck and Tractor Operators	130	1.9	140	1.9	10	6 %	\$46,560
Market Research Analysts and Marketing Specialists	110	0.6	130	0.6	20	12 %	\$52,260
Industrial Machinery Mechanics	110	2.8	140	3.0	30	28 %	\$73,110
Riggers	110	55.2	120	55.2	10	4 %	\$49,070
First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	110	3.2	120	3.2	10	4 %	\$82,680

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Industry Projections

Repair and Maintenance

Industries in the Repair and Maintenance subsector restore machinery, equipment, and other products to working order. These establishments also typically provide general or routine maintenance (i.e., servicing) on such products to ensure they work efficie

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Automotive Service Technicians and Mechanics	5,550	32.9	5,760	33.8	210	4 %	\$43,280
Automotive Body and Related Repairers	2,860	70.3	3,020	70.1	160	6 %	\$45,320
Cleaners of Vehicles and Equipment	2,180	50.8	2,380	51.7	200	10 %	\$24,110
First-Line Supervisors of Mechanics, Installers, and Repairers	1,170	12.7	1,250	13.0	80	6 %	\$64,530
General and Operations Managers	870	1.4	920	1.4	50	5 %	\$92,900
Bookkeeping, Accounting, and Auditing Clerks	710	1.7	630	1.7	-80	-10 %	\$39,880
Automotive and Watercraft Service Attendants	660	24.6	720	25.3	60	10 %	\$23,310
Automotive Glass Installers and Repairers	490	75.4	510	76.5	20	5 %	\$31,570
Computer, Automated Teller, and Office Machine Repairers	480	19.8	480	19.5	0	-1 %	\$47,360
Painters, Transportation Equipment	450	68.7	470	68.7	20	5 %	\$45,530
Heating, Air Conditioning, and Refrigeration	430	5.1	440	5.0	10	1 %	\$54,400

Mechanics and Installers							
Customer Service Representatives	340	0.6	350	0.6	10	4 %	\$44,620
Electrical and Electronics Repairers, Commercial and Industrial Equipment	340	17.8	340	17.8	0	1 %	\$58,870
First-Line Supervisors of Office and Administrative Support Workers	310	0.9	330	0.8	20	4 %	\$70,380
Bus and Truck Mechanics and Diesel Engine Specialists	290	8.4	360	9.6	70	25 %	\$52,490
Industrial Machinery Mechanics	260	6.7	320	6.8	60	22 %	\$52,260
Helpers--Installation, Maintenance, and Repair Workers	260	14.3	280	14.5	20	6 %	\$25,320
Cost Estimators	240	4.4	250	4.4	10	6 %	\$59,510
Sales Representatives, Services, All Other	220	1.1	220	1.0	0	4 %	\$56,370
Upholsterers	190	43.5	190	43.9	0	-1 %	\$38,050
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	160	1.0	160	1.0	0	1 %	\$85,000
Home Appliance Repairers	160	15.9	150	15.7	-10	-3 %	\$40,260
Computer User Support Specialists	150	0.9	150	0.8	0	0 %	\$62,850
Motorboat Mechanics and Service Technicians	140	16.4	140	15.8	0	-3 %	\$42,450
Medical Equipment Repairers	130	11.3	130	11.1	0	-1 %	\$72,400
Maintenance and Repair Workers, General	130	0.6	130	0.6	0	3 %	\$34,740
First-Line Supervisors of Retail Sales Workers	120	0.3	120	0.3	0	7 %	\$39,420
Electrical and Electronics Engineering Technicians	110	1.8	110	1.9	0	0 %	\$57,090
Shipping, Receiving, and Traffic Clerks	110	0.7	110	0.7	0	-4 %	\$32,670

First-Line Supervisors of Production and Operating Workers	100	0.8	100	0.8	0	1 %	\$61,030
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Industry Projections

General Merchandise Stores

Industries in the General Merchandise Stores subsector retail new general merchandise from fixed point-of-sale locations. Establishments in this subsector are unique in that they have the equipment and staff capable of retailing a large variety of goods from a single location. This includes a variety of display equipment and staff trained to provide information on many lines of products.

Occupational Projections for this Industry

in the Massachusetts

[Excel of this data](#)

Occupation	2014 Employment		Projected 2024 Employment		Change 2014-2024		2015 Mean Annual OES Wage
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent	
Retail Salespersons	20,070	17.4	20,970	17.5	900	4 %	\$23,750
Stock Clerks and Order Fillers	7,690	17.1	8,020	17.1	330	4 %	\$23,960
Cashiers	7,120	10.3	7,440	10.7	320	4 %	\$21,470
First-Line Supervisors of Retail Sales Workers	3,550	9.8	4,020	10.8	470	13 %	\$42,100
Laborers and Freight, Stock, and Material Movers, Hand	2,540	7.7	2,420	7.0	-120	-5 %	\$24,890
First-Line Supervisors of Office and Administrative Support Workers	900	2.5	1,020	2.6	120	13 %	\$42,130
Customer Service Representatives	810	1.5	890	1.6	80	10 %	\$28,420
Shipping, Receiving, and Traffic Clerks	690	4.2	650	4.1	-40	-7 %	\$27,100
Security Guards	610	2.9	510	2.4	-100	-17 %	\$26,190
General and Operations Managers	540	0.9	610	0.9	70	13 %	\$77,970
Combined Food Preparation and Serving Workers, Including Fast Food	510	1.0	500	0.9	-10	-1 %	\$23,170
Merchandise Displayers and Window Trimmers	480	25.2	390	22.3	-90	-18 %	\$30,640

Pharmacy Technicians	370	4.3	440	4.9	70	21 %	\$31,390
Pharmacists	310	4.4	320	4.5	10	6 %	\$114,340
Office Clerks, General	240	0.4	220	0.4	-20	-5 %	\$27,830
Human Resources Assistants, Except Payroll and Timekeeping	230	7.4	210	7.0	-20	-9 %	\$30,900
Bakers	160	4.1	200	4.7	40	23 %	\$29,950
Business Operations Specialists, All Other	140	1.1	120	0.9	-20	-12 %	\$41,690
First-Line Supervisors of Protective Service Workers, All Other	140	7.6	150	7.7	10	5 %	\$55,540

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BMC Durfee High School – Fall River, MA
Chapter 74 Programming Submission

**4. Curriculum Subcommittee and Program Advisory Committee Meeting
Minutes and Recommendations to the School Committee**

Environmental Science and Technology Advisory Mtg

January 12, 2017, 8:30am Tradewinds Restaurant, Durfee High School

Attendance: Jayne DiCandio, Program Teacher: Ray Medeiros, Director of CVTE Programs: Terry Sullivan, Fall River community Utilities: Shelli Costa, Westport River Watershed Alliance; Mitchell Zahn, MA Rehabilitation Commission; Kirk Franklin, Frank Corp Environmental Services

Minutes:

Chairperson: The committee would like to nominate Linton Harrington to continue as Chairperson for 2016-17 school year. If Linton is unable to continue than Terry will volunteer.

Review of Program: Ray Medeiros introduced himself to the commit as the new Director of CVTE Programs at Durfee. Ray and Jayne let the commit know the Environmental program has had a slow start. At the end of the school year 2016, we had a few freshman interested in the sophomore program and a few sophomores moving up to junior program. But the school decided not to offer those programs in 2016-17 and decided to “restart” the program with Freshman Discovery this year. Jayne in teaching 5 classes in the science department and 1 discovery class. The discovery classes are now 5 weeks long and we will be seeing more students than last year.

It is not unusual for a new program and an environmental program to get a slow start which has happened to other Vocation schools. Jayne also started last year late in October and there were some issues with freshman being randomly put in shops instead of them choosing shops.

Job Outlook and Certifications: Terry reiterated what he had told Bob when the program was started. There is a lot of Demand for jobs in the water industry. In Fall River they cannot fill positions. They need more qualified applicants and they are well paying positions. Terry works with Bob Rak at BCC (a committee member) to get students from their environmental program who have completed water certifications.

Shelli reminded the group there are other certification programs besides water including soil, wetlands delineation, pesticides, and GIS.

Recruitment: The committee agreed that having a funneling system from Durfee to BCC would be one pathway choice for students. Talking to BCC and seeing where they are getting their students in the environmental program. Mitch reminded the committee that if a student has an IEP, his department can help the students pay for college.

The committee began to brainstorm some ideas on how to get more freshman interested. One difficultly is Environmental is not as clear of pathway as carpentry or cosmetology. It is difficult to get 14 year olds excited about working with water quality and sewage plants.

Ray suggested we have an optional bus trip for freshman in the spring and visit some sites like the Fall River Water Treatment Plant. Having the students see potential job sites may be incentive for them to

join the program.

Other suggestions were having an environmental career day at the school or adding an environmental arm to the current career day. Having guests come in and talk to students. Jayne also wants to reach out to more students in the school who may not be taking the Discovery Program. Make a stronger connection with the science department and Environmental Science AP.

Wrap Up: The committee said they will pass on any information they think of that can help the program grow. Jayne said she will follow up if she needs help in coordinating a bus trip, career day or guest speakers.

Meeting adjourn: 9:45am

Minutes: Jayne DiCandio

MEETING MINUTES

VISUAL DESIGN ADVISORY COMMITTEE

VISUAL DESIGN ADVISORY COMMITTEE MEETING Fall Semester, 2016

<i>Name</i>	<i>School/ Industry Affiliation</i>
<u>Ryan Manchester - Chair</u>	<u>Industry Professional</u>
<u>Marisa Millard</u>	<u>BCC Design Dept. Head</u>
<u>Rene Gagnon</u>	<u>Visual Design Teacher</u>
<u>Maria Lauer</u>	<u>Visual Design Teacher</u>
<u>Maria Fernandes</u>	<u>Parent</u>
<u>Colby DaCosta</u>	<u>Student</u>
<u>Eric Smith</u>	<u>Industry Professional</u>
<u>Chelsea Arruda</u>	<u>Industry Professional</u>

Agenda Items	Discussion Points	Recommendations
Integration of drawing portfolio curriculum.	Building of students drawing portfolio and preparing a portfolio for entry into art schools.	Parents and industry back the idea and feel it will broaden the scope of who may be interested in the program.
Use of online quizzes.	All advisory agree that online experiences that include visuals increase student engagement.	Continue to explore and implement new software into program.
Video production.	Equipment, and software.	Members were excited to learn that the students are now using the new Adobe creative suite, but did mention the lack of a quality camera for video production. They cite that while the current cameras are capable of shooting video they lack the complexity of an industry standard motion capture camera.

Spring public project.	City wide mural project.	Members fully back the proposal created by Mr. Gagnon for a mural project in the city next year.
OSHA	Currently no OSHA for juniors.	Give students opportunity for OSHA certification.
New curriculum frameworks/state regulations update	SBU overview. New web delivery system.	Continue trend of tiered or scaffolded instruction. Also provide work-based instruction to students as an option.
New trends in the field/employment outlook	Continue to introduce InDesign training. Most college level layout assignments require the software knowledge.	Incorporate more page layout for students going to school for design.
Recommendations from participants	Strong focus on the fundamentals.	Additional advisory committee members from industry.
Equipment	Drawing tablets.	Students should have access to tablets for a more intuitive drawing experience on the computer.

Durfee High School Career and Technical Education

Program Advisory Committee Agenda

Cosmetology



December 5, 2016 (11:30am-1 pm)

Members/Affiliation: (attendance)

- Member 1 Heidi Gubala- Instructor
- Member 2 Kerry Torres- Instructor
- Member 3 Karina Silva- Salon Ambiance
- Member 4 Victoria Souza- Divine Tranquility
- Member 5 Quianna Michel- Student

1. Select chairperson for SY 2016-17 (General Advisory Membership) Victoria Souza
2. Review of Enrollment/Placement Senior-10, Sophomore -11, Junior- 9. New schedule affects placement. AP students that need labs, High school requirements, Art Gym etc, High demand program only 12 allowed with instructor's license.
3. Review Budget and Course of Study for SY 16-17 Ordered from the Perkins Grant 6 Ventilated manicure tables, 3 new steamers to replace broken steamers. Consumable account need to be increased from \$800.00 per year. Can just afford the basics.
4. Strategic Plan for Recruitment. End of year meet and greet at school with local salon owners
5. Certification, Licenses, and Job Outlook Skills USA, Osha Career Safe, Cosmetology License
6. New Trends in the Occupational Area Gel Polish, Balayage techniques
7. New Business Battle of Schools Field Trip, Paul Mitchell School Field Trip, NYC field Trip
Junior Achievement
8. Program Comments and Concerns
9. Program Recommendations Increase consumables

Meeting Minutes - (recorder: Heidi Gubala _____)

CTE ADVISORY BOARD MINUTES

Early Education and Care Committee

The meeting was held on Wednesday, November 30, 2016 at The Tradewinds Restaurant, BMC Durfee High School.

The following were in attendance:

1. Kathleen Garcia
2. Urania Ferreira
3. Donna Valente
4. Mary Midura
5. Melissa Cardelli
6. Kiara Baptista (student)
7. Justin Hebert (student)

Subject:

Members were informed of enrollment in all grades (sophomore-senior) as well as freshman who are indicating interest in being in the program. Discussed ideas regarding alleviating congestion and noise level in the preschool lab (too many students and children in one space).

Action:

Presently juniors are rotated out of the preschool lab on a weekly basis and spend time in YPLC as well as special needs classrooms. Mary Midura from People, Inc. suggested the possibility of small groups of juniors being transported by school department van to People Inc.'s facility on North Main Street in the morning in order to assist with their community playgroups. Teachers will set up a meeting with Robin Jones, Program Director in order to explore this option for next year as well as the seniors engaging in home visits with Early Intervention personnel. Also discussed proposed new morning schedule next year in which the sophomore class would be moved to Period 3 and be able to be part of the preschool lab.

Subject:

Discussed the purchase of Teaching Strategies Gold assessment tool and how the Juniors will begin being trained in using this tool. Teachers have already been trained on its' use.

Action:

Members encouraged the possibility of also accessing the online assessment version in order for students to experience the true capabilities of the tool and also this is how they would be using the tool in industry.

Subject: Discussed voting in a new advisory board chairperson. Donna Valente volunteered to fulfill this role once again. Also discussed recruitment of new board members as well as preschoolers for next year.

Action: Haylee Xavier, a former student and owner of a local home child care center, had in the past expressed an interest in being a member of our board. Mrs. Garcia will speak to her again about this possibility. Mrs. Ferreira will also explore advertising for preschoolers in a variety of places in the community that parents have access to (elementary schools, YMCA, Boys and Girls Club, etc.).

Subject: Informed board that all seniors are on course to graduate and earn EEC certification (Preschool and Infant/Toddler). They are also all certified in CPR/AED, First Aid, OSHA and have completed four online EEC trainings before beginning their affiliations. Affiliations are going well and the students today had an opportunity to inform the board of their plans once they graduate from the program. Melissa Cardelli from BCC also spoke to the students about requirements of her program as well as how one transfers from BCC to a four year institution.

Action:

Continue to monitor the requirements of various programs in local colleges and universities that the students are interested in.

Subject: Meeting at to take place at BCC on Thursday, December 15th at 9:30 regarding the Early Education and Care Articulation Agreement. Melissa Cardelli from BCC (EEC Professor) will be in attendance.

Action: Mrs. Garcia and Mrs. Ferreira will attend this meeting in order to gain information on the new articulation agreement process.

Health Assistant Advisory Meeting Minutes Fall 2016

Attendees:

Judith Cook	Jen Martin
Cheryl Thompson	Kristy Sabetino
Bella Archambault	Karen Gallaway
Alex Le	Cameron Correira
Krystelle Andre	Austin Resendes
Selena Boleates	Anne Cabucio
Marybeth Vargas	Pamela Pittman

Agenda:

- 1. Shop/Laboratory tour – review equipment and supplies**
- 2. Select Chairperson – Judy Cook**
- 3. Program overview:**
 - a. Freshman Exploratory – Pamela Pittman review health professions, first aid, fire safety, nutrition and infection**
 - b. Sophomore - topics covered in the curriculum**
 - c. Junior – Skill attainment in the lab area, new clinical affiliation at Highland Adult Day Care where students can practice their communication skills with the elderly clients.**
 - d. Seniors – Anne Cabucio discussed senior curriculum and clinical rotations at St. Anne’s Hospital and ancillary shadowing at Charlton Memorial Hospital.**
- 4. Budget & Recommendations – replace wheelchairs so there is five working wheelchairs.**
- 5. Certification and job outlook: Industry participants suggested on site job interviews for senior students with Southpointe Rehabilitation & Nursing Care and St. Anne’s Hospital.**
- 6. Mock Testing – test student for certification using the mock test model has had very good success and we would continue the process.**
- 7. Recommendations: focus on infection control protocols, precautions equipment regarding new regulations on Clostridium Difficile, handwashing and pressure relief equipment/protocols. Flu shots now required for clinical affiliation at Southpointe Rehabilitation and St. Anne’s Hospital.**
- 8. Five senior students who have not received the flu shot can secure this immunization with parental permission at Southpointe free of charge.**

Durfee High School Career and Technical Education

Program Advisory Committee Agenda

Culinary Arts



December 19, 2016 (11:30am-1 pm)

Members/Affiliation: (attendance)

- Member 1 - **Instructor** Matt Bettencourt
- Member 2 - **Instructor** Alana Yasso
- Member 3 - **Paraprofessional** Jenna Michael
- Member 4 - **Post Secondary (BCC)** Gloria Cabral
- Member 5 - **Labor (The Cove)** Mona Lima
- Member 6 - **Labor/Past Student** David Santsaver
- Member 7 - **Junior Student** Chhavee Nhean
- Member 8 - **Senior Student** Devin McCauley
- Member 9 - **Parent** Cecilia Cabral

1. Select chairperson for SY 2016-17 (General Advisory Membership)

-**David Santsaver**

2. Review of Enrollment/Placement

- There was some concern from a student's parent about students leaving for MCAS and other classes during culinary arts time. This takes lab time away from students that want this as their career. Are there any other options?

3. Review Budget and Course of Study for SY 16-17

-Gloria asked if we could apply for a lowes or home depot grants to help with funding for repairs?

-Some of the past students thought that the course of study should include community service. (Making gingerbread houses for nursing homes, soup kitchen)

4. Strategic Plan for Recruitment

- Some suggestions was to be tough sophomore year, students need to know that this is a serious program and that it's not just about eating. Gloria said that you might lose some students from being tough on them but this will just be beneficial in the long run.

-Another suggestion to increase enrollment was to have sophomores every day. The rotating schedule prevents students from finding out if Culinary is really for them because of the lack of time spent in the program. The more time you give them Sophomore year the more students you could in the spots of dropped students.



-Lastly was to find students that actually want a career in Culinary Arts.

5. Certification, Licenses, and Job Outlook

-ACF (American Culinary Federation) student membership, Working with this organization to better the students with support and networking in the culinary world.

-Serv Safe, Trying to figure out how to get the students serv safe certified.

-Finding students jobs in the culinary field by senior year.

6. New Trends in the Occupational Area

-More entrepreneurial activity in recent years. (Food trucks, bakeries, online health consulting) Try to incorporate this into the Culinary program.

7. New Business

-A student asked if a senior students work with Cafeteria like an In school internship?

8. Program Comments and Concerns

-Multiple Broken Items (Ice Machine, Steam Kettle, Griddle, etc.)

-Lack of chef teachers per room.

9. Program Recommendations

- Hire another teacher (3 Teachers and 1 Para)

- Students required to buy non-slip shoes as well as their uniform.

- Blast chiller for safety and sanitation.

- Call in a representative to help use CVAP equipment.

- Walk in freezer fix or repair? Diman help repair?
- Digital scales in bakery.

Meeting Minutes - (recorder: Mona Lima)



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**5. School Committee Meeting Minutes Recording Vote of Approval of Future
BMC Durfee High School Chapter 74 Programming**

BMC Durfee High School – Fall River, MA
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**6. School Building Committee Meeting Minutes Recording Vote to Approve
Submitting Durfee BMC High School Chapter 74 Programming Submission**

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7. Current Career/Vocational Technical Education Program Offerings at BMC Durfee High School

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3. Current CVTE Course Offerings at BMC Durfee High School

CVTE COURSE OFFERINGS					
CONSTRUCTION CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
	Construction Technology I	CP	10	YR	.5
	Construction Technology II	CP	11	YR	1
	Construction Technology III	HON	12	YR	2
08304	Wood Technology I (elective)	CP	10-12	SEM	.25
08314	Wood Technology II (elective)	CP	11-12	EM	.25
ARTS & COMMUNICATIONS CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
02284	Cosmetology I	CP	10	YR	1
02382	Cosmetology II	CP	11	YR	2
02482	Cosmetology III	HON	12	YR	3
HOSPITALITY AND TOURISM CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
02274	Culinary Arts I	CP	10	YR	1
02372	Culinary Arts II	CP	11	YR	2
02424	Culinary Arts III	HON	12	YR	3
	Introduction to Culinary Arts (elective)	CP	10	SEM	.25
ARTS & COMMUNICATIONS CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
02214	Visual Design I	CP, HON	10	YR	.5
02312	Visual Design II	CP, HON	11	YR	1
02412	Visual Design III	HON	12	YR	2
	Introduction to Visual Design (elective)	CP	10	SEM	.25

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EDUCATION CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
02234	Early Education & Care I	CP	10	YR	.5
02232	Early Education & Care II	CP	11	YR	2
02432	Early Education & Care III	HON	12	YR	3
MANUFACTURING, ENGINEERING AND TECHNOLOGY CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
08614	Introductions to Electronics	CP	10	YR	.5
08624	Mechatronics (Electronics II)	HON	11	YR	1
AGRICULTURE & NATURAL RESOURCES CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
40304	Environmental Science & Technology I	CP, HON	10	YR	.5
	Environmental Science & Technology II	CP, HON	11	YR	1
	Environmental Science & Technology III	HON	12	YR	2
HEALTH SERVICES CLUSTER					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
02254	Health Assisting I	CP, HON	10	YR	.5
02352	Health Assisting II	CP, HON	11	YR	2
02452	Health Assisting III	HON	12	YR	3
PROJECT LEAD THE WAY - ENGINEERING					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
40084	Honors Engineering I: Introduction to Engineering Design (PLTW)	HON	9-12	YR	.5
40004	Honors Engineering II: Principals of Engineering (PLTW)	HON	10-12	YR	.5
02143	Honors Engineering III: Digital Electronics (PLTW)	HON	11-12	YR	1

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44101	Honors Engineering III: Aerospace Engineering (PLTW)	HON	11-12	YR	1
40091	Honors Engineering Design & Development (PLTW)	HON	12	YR	1
	Manufacturing and Fabrication Methods (elective)	HON	11-12	?	?
RADIO AND TV BROADCASTING					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
62104	Radio and TV Broadcasting I	CP	9-12	YR	.5
75121	Radio and TV Broadcasting II	CP	10-12	YR	1
75131	Radio and TV Broadcasting III	CP	11-12	YR	1
62454	TV Studio Independent Study	CP	10-12	YR	.25

CONSTRUCTION

CONSTRUCTION TECHNOLOGY I (Sophomore Year, College)

.5 Credit

This course provides students with an introduction to construction site safety, basic hand and power tools, and skills required for construction of commercial, residential, and institutional structures. The course provides experiences and information (including career opportunities and training requirements) regarding construction-related occupations such as carpentry, bricklaying, and concrete masonry. Students engage in activities such as reading blueprints, rigging, roofing, framing, erecting structures, finishing surfaces, and maintenance of tools and equipment. This is a full year course meeting on alternating days (red/black days).

CONSTRUCTION TECHNOLOGY II (Junior Year, College prep)

1 Credit

A continuation towards proficiency in the knowledge and skills from Construction Technology I. This is a full year course meeting five days a week.

CONSTRUCTION TECHNOLOGY III (Senior Year, Honors)

2 Credits

This course is a continuation of Construction Technology II, expanding student skills and knowledge required for construction of commercial, residential, and institutional structures. The course provides experiences and information including hands on opportunities within the Durfee facility in construction-related occupations such as carpentry, and concrete masonry. Students engage in activities such as reading blueprints, erecting ladders and scaffolds, measuring, marking, and cutting materials for construction, erecting structures, installing cabinets and equipment, finishing surfaces, and maintenance of tools and equipment. This is a full year course meeting 2 periods a day/ five days a week.

Construction Electives:

08304 WOOD TECHNOLOGY I

.25 Credit

This elective course offers an introductory experience designed to give students insight into the major areas of woodworking. Students develop basic technical skills; learn design concepts, woodworking methods and basic construction principles. This is a semester course meeting on alternating days (red/black days).

08314 WOOD TECHNOLOGY II

.25 Credit

In this follow-up elective to Wood Technology I to course, students use their knowledge from Wood I to design and construct class projects. Concepts used are design, power tools, model making, construction basics and reading scale drawings. Students construct various independent projects including a scale house model. This is a semester course meeting on alternating days (red/black days).

Prerequisite: Wood technology I.

COSMETOLOGY

Upon completion of this program, students are eligible to become certified as a licensed Cosmetologist in the Commonwealth of Massachusetts.

02284 COSMETOLOGY I (Sophomore Year, CP)

.5 Credit

Students are taught basic skills of hairstyling, haircutting, and professional communication, along with aspects of hygiene and safety. This is a full year course meeting on alternating days (red/black days).

02382 COSMETOLOGY II (Junior Year, CP)

2 Credits

Unisex Hairstyling is a complete course of study that prepares males and females to become licensed cosmetologists. The students receive theory and training in all facets of hair, skin and nails. Each student must accumulate 1,000 hours to be eligible to take the state license exam. This is a full year course meeting 2 periods a day/ five days a week.

Note: Students are required to have a uniform and kit as determined by the instructor.

02482 COSMETOLOGY III (Senior Year, Honors)

3 Credits

Students continue to receive all knowledge and training in all facets of hair, skin, and nails to prepare them for the State Board Exam and begin a career in cosmetology. They work on clients and continue to gain real world experience in a salon setting. All students continue to take necessary actions to complete their State Board Exam and obtain a career in the cosmetology field. This is a full year course meeting 3 periods a day/ five days a week.

Note: Students are required to have a uniform and kit as determined by the instructor.

CULINARY ARTS

02274 CULINARY ARTS I (Sophomore Year, CP)

.5 Credit

Students become familiar with the basics of food preparation, safety & hygiene. This will include food preparation, baking, dining room service and cleanup. This is a full year course meeting on alternating days (red/black days).

02372 CULINARY ARTS II (Junior Year, CP)

2 Credits

These courses are designed to train students in a sequence of activities for kitchen and bakery laboratory and dining room experiences, including menu planning, ordering, and inventory control as well as baking fundamentals including pastries, breads and special occasion cakes. This class also works the student-run coffee shop, interacting with customers daily. This is a full year course meeting 2 periods a day/ five days a week.

Note: Students are required to have a uniform as determined by the instructor.

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02424 CULINARY ARTS III (Senior Year, Honors)

3 Credits

This course is designed to train students in a sequence of activities for kitchen and bakery laboratory and dining experiences. Major topics include menu planning, ordering, and inventory controls as well as baking fundamentals including pastries, breads and special occasion cakes. This class also works in the student-operated restaurant, interacting with customers daily. This is a full year course meeting 3 periods a day/ five days a week.

Note: Students are required to have a uniform as determined by the instructor.

Elective:

INTRODUCTION TO CULINARY ARTS (Sophomore Year, CP)

In elective course, students become familiar with the basics of food safety and preparation.

Sophomore students who pass this course are eligible to enroll in the ‘Career & Technical Education – Culinary Arts Program’.

EARLY EDUCATION & CARE

Upon completion of this program, students are eligible to become certified through the Dept. of early Education and Care.

02234 EARLY EDUCATION & CARE I (Sophomore Year, CP)

.5 Credit

This class introduces the student to the concepts of child development. Students learn to develop developmentally appropriate activities and have limited hands on experience in a preschool setting. This is a full year course meeting on alternating days (red/black days).

02332 EARLY EDUCATION & CARE II (Junior Year, CP)

2 Credits

This course promotes a further understanding of the Physical, Social, Emotional, and Intellectual Development of the preschool age child. Students demonstrate the development of basic skills in the onsite laboratory preschool. This is a full year course meeting 2 periods a day/ five days a week. *Note: Students are required to have a uniform as determined by the instructor.*

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02432 EARLY EDUCATION & CARE III (Senior Year, Honors)

3 Credits

This course promotes a further understanding of the Physical, Social, Emotional, and Intellectual Development of the child from Birth to age 5. Affiliations at community Child Care centers enable the student to apply knowledge and skills learned in the classroom. Students create lesson plans, a professional portfolio and a final project that will apply research skills and technology. This is a full year course meeting 3 periods a day/ five days a week. *Note: Students are required to have a uniform as determined by the instructor.*

ELECTRONICS PATHWAY

08614 INTRODUCTION TO ELECTRONICS (Sophomores, Juniors, CP)

.5 Credit

Students learn and apply analog and digital electrical theory. This course culminates with designing, troubleshooting, soldering, and manufacturing their own Printed Circuit Board. Students are introduced to hardware such as PCB CNC milling, laser engraving, 3D printing and technical design software such as AutoCAD, Inventor, EAGLE, and Multisim. A prerequisite to Mechatronics, this class provides students with a solid foundation in electronics manufacturing. This is a full year course meeting on alternating days (red/black days).

08624 MECHATRONICS (Electronics II) (Juniors, Seniors, HON)

1 Credit

A technology combining electronics and mechanical engineering, Mechatronics builds on skills obtained in the Introduction to Electronics course focusing on the design process to develop, create and troubleshoot designs. Students also create a simulated company which focuses on developing cutting edge technologies and prepare to enter robotics competitions such as the National SeaPerch Challenge and the MATE International ROV competition. Upon completion students are prepared to enter entry level electro-mechanical technician positions. This is a full year course meeting five days a week.

Prerequisite: Introduction to Electronics.

**02143 HONORS ENGINEERING III: DIGITAL ELECTRONICS (DE)
(PLTW)**

1 Credit

A third course in the electronics pathway, this course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices. This is an honors level course. This is a full year course meeting five days a week.

ENVIRONMENTAL SCIENCE & TECHNOLOGY

**40304 ENVIRONMENTAL SCIENCE & TECHNOLOGY I (Sophomore
Year, CP)**

.5 Credit

Students are introduced to the theory of natural cycles and how population impacts them. Sophomores become proficient with the testing and maintaining of water quality, troubleshooting, breeding and data collection from shop aquarium systems. Data is closely analyzed to allow for complete student understanding of the reasons for trends and changes in water quality. Energy production, use, efficiency and consumption topics are researched, experimented with and presented on by students to their class. The class also investigates flora and fauna species diversity and population, the importance of native plant and animal species diversity, and the understanding of their populations in their natural environments. Sophomores explore many of the different marine science industries and career opportunities and receive their 10-Hour OSHA General Industry Safety Training Certificates. This is a full year course meeting on alternating days (red/black days).

ENVIRONMENTAL SCIENCE & TECHNOLOGY II (Junior Year, CP)

1 Credit

Eleventh grade students take part in the fieldwork in environmental engineering/consulting, natural resource management and land-use planning. Several hands-on methods for sampling groundwater and soil are taught to students in detail using industry recognized techniques. Students learn about groundwater contamination sources and design remediation solutions using groundwater flow simulator models. Marine sciences and soil science are the primary areas of study as well as preparation of their resumes and career plans to attain their personal goals. Students also learn about toxicology and the effects of hazardous substances

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on animals. In preparation for the 40-hour, 3-college credit, OSHA-Hazardous Waste Operations and Response (HAZWOPER) Training and certification test at Bristol Community College, students study toxicology chemistry and hazardous substance terminology in detail. This is a full year course meeting five days a week.

ENVIRONMENTAL SCIENCE & TECHNOLOGY III (Senior Year, CP)

2 Credits

During senior year, the class studies drinking water and wastewater treatment theories in class and applies the hands-on testing procedures and equipment use for various water, air and soil environmental sampling protocols in the field. Water treatment sciences are a main focus of study as students also study terminology and methodology for water treatment in preparation for the Massachusetts Grade-2M Wastewater Operator's License. Seniors compare and contrast state and federal environmental regulations and finalize in detail, several of the many environmental career paths of their choice. Seniors will also present their "Cap Stone" projects to their class and instructors. This is a full year course meeting 2 periods a day/ five days a week.

HEALTH ASSISTING

Upon completion of this program, students receive the following certifications: Certified Nursing Assistant, Home Health Aide, Alzheimer's disease, CPR/AED, First Aid, and OSHA.

02254 HEALTH ASSISTING I (Sophomore Year, CP)

.5 Credit

This classroom component covers basic knowledge of the role of the Nurse Assistant and the healthcare system. Some hands on activities are conducted in the nursing lab. Upon completion of this course, students must earn a 70 average to continue in the Health Assistant II course. This is a full year course meeting on alternating days (red/black days).

02352 HEALTH ASSISTING II (Junior Year, CP)

2 Credits

This course continues the preparation of students with knowledge and nursing skills for the practice of patient care. Students acquire the hands-on skills in the nursing lab that enable them to care for a resident in a Long Term Care facility. Students must be 100% proficient in lab skills prior to the clinical affiliation. Upon completion of this course, students must earn a 70 average to continue to the Health

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Assisting III course. This is a full year course meeting 2 periods a day/ five days a week.

02452 HEALTH ASSISTING III (Senior Year, Honors)

3 Credits

After becoming First Aid and CPR/AED Certified, students apply their knowledge and skills in a long term care facility under the supervision of the instructor. After successful completion of the Nursing Assistant competencies, students are eligible to take the state certification exam. Students also have the opportunity to apply their skills in a hospital setting with the acutely ill patient and explore other health related careers. This is a full year course meeting 3 periods a day/ five days a week.

Note: Students are required to have a uniform as determined by the instructor, physical exam, Tuberculosis test, proof of health insurance, CORI check (18 years old and older) drug testing, and provide a social security number for the state certification exam.

VISUAL DESIGN

02214 VISUAL DESIGN I (Sophomore Year, CP/Honors)

.5 Credit

The focus of the Visual Design program is to prepare students for a career or post-secondary education in multimedia arts. Students enrolled in this course will explore the formal elements of design including composition, color, texture, and shape in the form of applied visual problem-solving exercises in which typography and meaningful concept are added in order to shape the work into effective graphic design communication. Students explore many industry standard software applications during the course and develop a portfolio website. This is a full year course meeting on alternating days (red/black days).

02312 VISUAL DESIGN II (Junior Year, CP/Honors)

1 Credit

Visual Design II focuses on digital photography, video production, animation, as well as graphic design and typographic principles. Students explore integrating their photography into design projects of moderate and increasing complexity and produce complex video projects that include animated characters, motion graphics, and sound. Overall emphasis is on the development of strong visual concepts that communicate effectively. This is a full year course meeting five days a week.

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02412 VISUAL DESIGN III (Senior Year, CP/Honors)

2 Credits

Visual Design III is a continuation of design, photography, and video production training. Students will also concentrate on preparing a drawing portfolio. The course emphasis is on critical thinking, concept development, as well as research and marketing methodologies. Students also focus on the development of a unique personal voice through projects that are geared towards their individual interests. All students end their training with a personal online portfolio to showcase their work to clients, employers, or college institutions. This is a full year course meeting 2 periods a day/five days a week.

Elective:

Introduction to Visual Design

This elective course designed for any student interested in exploring their creative side through computer generated graphics. Students are trained how to use Adobe Photoshop, Illustrator, and InDesign to create digital projects that explore the elements of design.

Sophomore students who pass this course during Semester 1 are eligible to enroll in the ‘Career & Technical Education - Visual Design Program’.

**ENGINEERING TECHNOLOGY PATHWAY –
PROJECT LEAD THE WAY**

Project Lead the Way (PLTW) courses are honors level courses supported by a nationally recognized curriculum. All students are required to take an end of course assessment. PLTW has an affiliation with more than 150 institutions of higher education. These institutions actively recruit PLTW students and provide recognition opportunities, including admissions preference, scholarships, and course credit. All PLTW Engineering courses require concurrent enrollment in (or satisfactory prior completion of) appropriate grade level math and science courses. Grade level courses should be those that support a student’s requirements towards matriculation. For more information regarding the PLTW curriculum please refer to the Project Lead the Way website: www.pltw.org

40084 HONORS ENGINEERING I: INTRODUCTION TO ENGINEERING DESIGN (IED) (PLTW)

.5 Credit

The main focus of this foundation course is the design process and its application. Through hands-on projects, students apply engineering standards and document their work. Students use industry standard 3D modeling software to help them design solutions to solve proposed problems, document their work using an engineer's notebook, and communicate solutions to peers and members of the professional community. This is an Honors level course. This is a full year course meeting on alternating days (red/black).

Prerequisite: Middle school teacher recommendation OR permission from the Director of Career Technical Education.

40004 HONORS ENGINEERING II: PRINCIPLES OF ENGINEERING (POE) (PLTW)

.5 Credit

This foundation course exposes students to major concepts they'll encounter in a post-secondary engineering course of study. Topics include mechanisms, energy, statics, materials, and kinematics. They develop math and problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, document their work and communicate solutions. This is an honors level course. This is a full year course meeting on alternating days (red/black).

It is recommended that PLTW Introduction to Engineering Design (IED) 40084 be taken prior to this course

02143 HONORS ENGINEERING III: DIGITAL ELECTRONICS (DE) (PLTW)

1 Credit

From smartphones to appliances, digital circuits are all around us. This course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices. This is an honors level course. This is a full year course meeting five days a week.

**44101 HONORS ENGINEERING III: AEROSPACE ENGINEERING (AE)
(PLTW)**

1 Credit

This course is an option for students in the Project Lead the Way Engineering pathway. Aerospace Engineering propels students' learning in the fundamentals of atmospheric and space flight. As they explore the physics of flight, students bring the concepts to life by designing and airfoil, propulsion system, and rockets. They learn basic orbital mechanics using industry-standard software. They also explore robot systems through projects such as remotely operated vehicles. This is an honors level course. This is a full year course meeting five days a week.

**40091 HONORS ENGINEERING IV: ENGINEERING DESIGN &
DEVELOPMENT (EDD) (PLTW)**

1 Credit

Engineering Design and Development (EDD) is the capstone course in the PLTW high school engineering program. It is an engineering research course in which students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology. Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams of students will design, build, and test their solution. Finally, student teams will present and defend their original solution to an outside panel. While progressing through the engineering design process, students will work closely with experts and will continually hone their organizational, communication and interpersonal skills, their creative and problem solving abilities, and their understanding of the design process. Since the projects on which students work can vary with student interest and the curriculum focuses on problem solving, EDD is appropriate for students who are interested in any technical career path. EDD should be taken as the final capstone PLTW course since it requires application of the knowledge and skills from the PLTW foundation courses. This is an honors level course. This is a full year course meeting five days a week.

Elective:

MANUFACTURING AND FABRICATION METHODS (Juniors, Seniors)

In this course, students are introduced to basic machine terminology, materials and techniques. Topics also include an introduction to machine shop tools like the CNC

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Mill and CNC Lathe and instruction in safe ways to use them. A final project would incorporate printed, milled, and turned parts.

RADIO & TELEVISION BROADCASTING

62104 Radio & Television Broadcasting I (Sophomore Year, CP)

.5 Credit

62284 Radio & Television Broadcasting I

.25 Credit

This course gives the student hands-on experience in many areas of the communication industry. All phases of video and audio production will be covered as well as the integration of technology. Students will learn voice-over techniques, digital still photography, digital video photography, shot composition, producing, scriptwriting, multimedia pre and post-production, editing, graphics, in-studio production and how to become on air talent. Projects include: Slating Your Name, practice edits, PSA's, In-Studio Projects and How To Videos. 62104 is a full year course meeting on alternating days (red/black days). 62284 is a semester course meeting on alternating days.

62214 Radio & Television Broadcasting II (Junior Year, CP)

1 Credit

62294 Radio & Television Broadcasting II

.25 Credit

This course refines the multimedia production skills to prepare students for their future, with special concentration on the Broadcast Journalism Industry. Students are responsible for, and learn how to put together an actual television newscast. We will take students through the pre-production stages of news, which include research, broadcast scriptwriting, and producing; the "production" stage of news which includes filming using state-of-the-art Sony HD cameras and editing using Final Cut Pro software for Mac; then complete the final stage of news, which is the actual newscast in our television studio. Here students will be taught how to Direct, Produce, operate in-studio cameras, adjust lighting, record audio, operate a teleprompter and perform as a News Anchor. Students will also work in groups on producing documentaries and how to compare the two types of news. 62214 is a full year course meeting five days a week. 62294 is a semester course meeting on alternate days.

62224 Radio & Television Broadcasting III (Senior Year, CP)

1 Credit

This course refines the multimedia production skills to prepare students for post-secondary education or entry-level employment in the multimedia technology industry. Students are responsible for the entire production of Durfee High School's Video Yearbook, all in-studio talk shows, a resume, interview techniques, a Client Television Commercial, a Work Experience/ Career Day Video, a full production of a short movie (including managing a budget, managing a crew), a demo reel for employment or college entrance, and monthly genre-related movie shorts. Students will also participate in the 48 Hour Film Festival in Boston where they will compete against professional filmmakers. We prepare you for a career in this industry. Students will work as professionals in teams and as individuals to perfect their crafts. This is a full year course meeting five days a week.

62454 TV STUDIO INDEPENDENT STUDY (Grades 10, 11, 12)

.25 Credit

Students who have completed Radio & Television Broadcasting I, II, or III. Students are required to assist the Instructors and staff at FRED-TV and have assigned job responsibilities and tasks for the successful operation of FRED-TV, Channel 17. Students must have a good working knowledge of the equipment and technical skills needed to work effectively. *NOTE: Managing Instructor approval is required.* (Maximum 6 students per periods) This study can be 5 days per week, 4 days per week, 3 days per week or twice weekly and is for a semester. Students in good standing have the option of returning for the second semester, with approval of the Managing Instructor.

All student projects air on Channel 17. Select projects stream on the FRED-TV website, on the FRED-TV Facebook page and YouTube.

DURFEE DISCOVERY

Durfee Discovery is a Grade 9 exploratory program. These mini-courses introduce students to the many educational opportunities available at Durfee. Students receive instruction in career pathways and exploration includes interest and ability assessment regarding their education and career preferences. Students are introduced to applicable technology, employability skills, and safety. These courses enable students to make informed decisions concerning future career pathways or electives at Durfee. Performance, conduct, and attendance in Durfee Discovery are components of the admissions criteria to a Career and Technical Education Program

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of Study. This is a full year course meeting on alternative days (red/black). Students select eight experiences to explore.

DURFEE DISCOVERY COURSES					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDITS
02504	Biomedical Science Exploratory	None	9	.5 Term	.0625
	Construction Technology Exploratory	None	9	.5 Term	.0625
02184	Cosmetology Exploratory	None	9	.5 Term	.0625
02174	Culinary Arts Exploratory	None	9	.5 Term	.0625
02114	Visual Design Exploratory	None	9	.5 Term	.0625
02134	Early Education Care Exploratory	None	9	.5 Term	.0625
02154	Electronics Exploratory	None	9	.5 Term	.0625
02144	Engineering Design & Modeling Exploratory	None	9	.5 Term	.0625
40104	Environmental Science & Technology Exploratory	None	9	.5 Term	.0625
02914	Health Assisting Exploratory	None	9	.5 Term	.0625
02094	TV & Radio Exploratory	None	9	.5 Term	.0625
75104	NJROTC Exploratory	None	9	.5 Term	.0625
	Business Marketing Exploratory	None	9	.5 Term	.0625

02504 BIOMEDICAL SCIENCES EXPLORATORY (PLTW)

.0625 Credit

This course explore topics related to biomedical principles and occupations and opportunities of medicine, clinical trials, public health, and disease and diagnostic testing.

CONSTRUCTIONAL TECHNOLOGY EXPLORATORY

.0625 Credit

The Carpentry Exploratory program offers students introductory educational experiences in residential and cabinetry construction. Curriculum topics in woodworking fundamentals include safety, hand and machine tools, basic blueprint reading, and wood finish preparation and application.

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02184 COSMETOLOGY EXPLORATORY

.0625 Credit

This course familiarizes students with the fundamentals of grooming and important aspects of hair, nail, and skin care.

02174 CULINARY ARTS EXPLORATORY

.0625 Credit

This course trains students in the basics of cooking, dining room etiquette and the baking.

02114 VISUAL DESIGN EXPLORATORY

.0625 Credit

This course introduces students to the field of Visual Design. Students are exposed to industry standard image editing software and basic design principals and theory in a state-of-the-art computer lab setting.

02134 EARLY EDUCATION CARE EXPLORATORY

.0625 Credit

This course introduces students to the basics of the early childhood education and the responsibilities of a preschool teacher.

02154 ELECTRONICS EXPLORATORY

.0625 Credit

This course introduces the student to the world of automation and electronics. Topics include automated manufacturing and robotics, electronic theory, and computers and the career opportunities and occupations that are available in the various fields.

02144 ENGINEERING DESIGN & MODELING EXPLORATORY (PLTW)

.0625 Credit

This course is an introduction and overview of the many and varied opportunities in engineering. Topics include the use of the engineering notebook, the engineering design process and activities to introduce each of the Project Lead the Way (PLTW) classes offered.

40104 ENVIRONMENTAL SCIENCE & TECHNOLOGY EXPLORATORY

.0625 Credit

Students are introduced to the many aspects of the environmental science during this five-week course. While exploring the areas of natural resources, energy

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consumption/efficiency, natural sciences and human population, students learn how these systems are connected, impacted and relate to daily life. Students also learn about basic data collection and analysis and are exposed to the testing and maintaining of water quality and troubleshooting of re-circulating aquarium systems. Freshmen also learn about basic shop safety protocols and procedures.

02914 HEALTH ASSISTING EXPLORATORY

.0625 Credit

This course introduces students to the basics of the health care system and the roles of a nursing assistant and other health professions. Some hands on activities will be conducted in the nursing laboratory.

02094 RADIO & TELEVISION BROADCAST EXPLORATORY

.0625 Credit

This course introduces students to the basics of television broadcast and production and serves as a bridge to formal training in the arena of entertainment.

75104 NJROTC EXPLORATORY

.0625 Credit

This course introduces the student to the NJROTC program at Durfee. Students are exposed to activities such as drill marching, US military organization, military customs and courtesies, as well as physical training.

BUSINESS MARKETING EXPLORATORY

.0625 Credit

Students explore what it takes to market a product or service in today's fast-paced business environment, learning the fundamentals of marketing using real-world business examples.

SCHOOL TO CAREER

School to Career is a program designed to provide a structure for school and businesses to close the gap between classroom learning and the skills necessary for career success. Durfee students are encouraged to participate in school to career internships as part of the program. Internships involve a student being placed at a particular work site that matches his/her interest and career goals.

Upon completion of their internship, School to Career students should be better prepared for the world of work when they graduate from B.M.C. Durfee High School and/or

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college. They will be exposed to the workplace competencies developed through the Massachusetts Work-Based Learning Plan. These requirements should better help students understand what is required to have a successful career by promoting positive self-development, confidence and self-esteem through goal setting, working with others and improving their work skills.

SCHOOL TO CAREER COURSES					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDITS
04434	STC School To Career Internship	CP	12	S1	.5
04454	STC School To Career Internship	CP	12	S2	.5

75104 SCHOOL TO CAREER INTERNSHIP (1st Semester)
.5 Credit

75104 SCHOOL TO CAREER INTERNSHIP (2nd Semester)
.5 Credit

This course provides the opportunity for students to apply their academics to the real world of work. Students are required to attend one class a week which focuses on work readiness skills including resume writing, cover letters, filling out applications, interviewing techniques and other skills necessary to be successful in the world of work. Internships may be paid or unpaid experiences.

Prerequisite: An application must be completed and submitted to the School to Career office. Students must be an eligible junior or senior and have a signed agreement from a parent/guardian.

U.S. NAVAL JUNIOR ROTC

The United States Naval Junior Reserve Officer Training Corps (NJROTC) Naval Science Program is offered to all B.M.C. Durfee High School students who meet the following criteria:

- * Enrolled as a regular student in B.M.C. Durfee High School
- * Physically fit (Eligible to participate in Physical Education Program at B.M.C. Durfee High School)
- * Are willing to wear the NJROTC uniform and abide by regulations.

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- ◆ NJROTC is a one to four-year program combining a broadly based Naval Science curriculum and the total development of management and leadership abilities.
Students have the option to take the NJROTC class in lieu of Physical Education in order to meet the graduation requirement or a combination of these classes by having NJROTC as an elective class. In order to meet the Physical Education requirement, students must remain in the JROTC program for a full year. Each year in NJROTC will count for one year of Physical Education. NJROTC Durfee Discovery does not satisfy this requirement
- ◆ The NJROTC mission is to: acquaint students with the naval science age; develop leadership skills; strengthen character; and promote an improved understanding of the roles and responsibilities of citizenship in our democratic society. People who are successful in life, those who succeed in business, industry, and education, have often developed strong self-discipline, an ability to lead and motivate others, and well-rounded character.
- ◆ NJROTC teaches you self-discipline, self-confidence and leadership skills that can help you meet life’s challenges successfully. NJROTC curriculum, instruction, and activities are designed to develop your leadership ability, regardless of your career path.
- ◆ The first year is an introduction to the basics of citizenship, leadership and military customs and drill. The second year covers maritime history, leadership and an introduction to the nautical sciences. The third year covers national strategy and naval operations, military and international law, and naval skills. The fourth year covers leadership in depth and students hold various positions of responsibility in the administration of the unit. Those who wish to become cadets must agree beforehand to meet the NJROTC grooming standards and to wear the uniform at least one day per week and on special occasions as required. (Uniforms are provided at no cost to the students.)
- ◆ NJROTC students are eligible to compete on various teams, which include drill and rifle marksmanship, against other high schools and may earn a varsity letter.

NAVAL SCIENCE JROTC COURSE OFFERINGS					
COURSE #	DESCRIPTION	LEVEL	GRADES	TERM	CREDIT
75114	Naval Science 1	CP	9-12	YR	.5
75122	Naval Science 2	CP	10-12	YR	.5
75121	Naval Science 2 - Honors	HON	10-12	YR	.5
75131	Naval Science 3 - Honors	HON	11-12	YR	.5
75141	Naval Science 4 - Honors	HON	12	YR	.5

NAVAL SCIENCE

75114 NAVAL SCIENCE 1

.5 Credit

This course is open to students in any grade. This is a course primarily on “*citizenship*.” It provides an introduction to military principles and drill, the heritage and traditions of America, elements of leadership and teamwork. This is a full year course meeting on alternating days (red/black).

75122 NAVAL SCIENCE 2

.5 Credit

This course expands upon 75114 and includes introduction to maritime history and nautical sciences. Leadership principles are more strongly emphasized. This is a full year course meeting on alternating days (red/black).

Prerequisite: A passing grade in Naval Science 1.

75121 HONORS NAVAL SCIENCE 2

.5 Credit

This course includes all aspects of 75122 with additional responsibility for special projects. Leadership skills are developed at the platoon level. This is a full year course meeting on alternating days (red/black).

Prerequisite: A passing grade in Naval Science 1.

75131 HONORS NAVAL SCIENCE 3

.5 Credit

This course is primarily the same as 75132 with additional responsibilities for special projects to demonstrate the concepts and knowledge learned. Cadets increase leadership skills in company and staff positions. This is a full year course meeting on alternating days (red/black).

Prerequisite: A passing grade in Naval Science 2.

75141 HONORS NAVAL SCIENCE 4

.5 Credit

This is a unique course in leadership and management. Cadets examine leadership by learning about human behavior and group dynamics. Numerous autobiographical and biographical studies are used to examine leadership styles. Cadets are involved in independent study and provide leadership for NS 1 cadets. This is a full year course meeting on alternating days (red/black).

Prerequisite: A passing grade in Naval Science 3.

