

# A Users Guide for the Massachusetts Youth Workforce Development System Indicators Package

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## Introduction

The planning, design, and administration of most workforce development programs for youth and adults, including those funded by the U.S. Congress under the Workforce Investment Act for youth, economically disadvantaged adults, dislocated workers, and older workers, is primarily carried out at the state and local level. Effective planning of these programs is dependent on the availability of timely, statistically reliable, and relevant data on state and local demographic developments, labor force and employment data for residents, industry and occupational employment developments, and labor market problems of workers, including open and hidden unemployment, underemployment, mal-employment, and earnings inadequacy problems.<sup>1</sup>

The availability of timely, statistically reliable and locally relevant data on demographics, resident labor force behaviors and developments, employment and unemployment conditions, and income and earnings inadequacy problems has been an important obstacle to effective educational and workforce development policymaking and planning at the local level. Frequently, local workforce development agencies had to depend on findings from the decennial censuses of population and housing to rigorously assess local labor force and employment developments among residents and labor market problems. As each decade wore on, the census data became increasingly outdated. In recent years, however, the release of annual public use data from the American Community Surveys, a large scale national household survey conducted by the U.S. Census Bureau, has made possible the development of a wide array of population, educational attainment, school enrollment, labor force, employment and unemployment, earnings, incomes, and labor market problem indicators for use in planning workforce development programs.<sup>2</sup>

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<sup>1</sup> For earlier analyses of the uses of demographic, labor force, and labor market information in planning, employment and training programs at the state and local level,

See: (i) Andrew Sum, Paul Harrington, and Lorraine Amico, Cracking the Labor Market for Human Resource Planning, National Governors Association, Washington, D.C., 1983; (ii) Andrew Sum, Neal Fogg, Sheila Palma, et al., Uses of Labor Market Information for Analyzing Labor Market Problems at the State and Local Level, National Labor Market Training Institute, Washington, D.C., 1999.

<sup>2</sup> The American Community Survey was first introduced on a pilot basis by the U.S. Census Bureau in 2000 with a set of local areas heavily over-represented in the sample. Over time, the national sample of household has increased substantially together with geographic coverage across states. Nearly two million households completed ACS interviews in 2007.

In the past few years (2006 and 2007), the U.S. Census Bureau annually has obtained completed interviews from 36,000 to 37,000 households across the state of Massachusetts and from nearly 4,000 residents of group quarters across the state, including residents of institutional group quarters, such as facilities for juvenile offenders, jails, prisons, and nursing homes.<sup>3</sup>

The American Community Surveys have utilized a questionnaire that is very similar in format to the long-form questionnaires used in conducting the decennial censuses.<sup>4</sup> The ACS survey collects detailed demographic information on each sample respondent (age, gender, race-ethnic group, nativity status, marital status, household relationship) and their school enrollment status and educational attainment. For each respondent of working-age (16 and older), the survey collects information on their labor force behavior at the time of the survey, their employment and unemployment status, the industries of their employers, and the occupations of their jobs. For those employed in the 52 weeks prior to the survey, information is collected on their paid weeks of employment, their average weekly hours of work, and their annual earnings from both wage and salary jobs and self-employment.

For the family as a whole, information is collected on their cash money incomes in the 52 weeks prior to the survey and their receipt of selected in-kind transfers (food stamps, energy assistance) and government cash transfers (Supplemental Security Income, public assistance payments such as TANF, unemployment benefits). The annual money incomes of families and the sources of those incomes can be used to identify the poverty/near poverty status<sup>5</sup> of families and whether they were economically disadvantaged or low income.<sup>6</sup> The educational attainment, school enrollment, marital status, family income, and living arrangement data can be used to identify low income teens, high school dropouts, low income single mother families, the disabled, the economically disadvantaged, and the incarcerated, all of whom have been target

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<sup>3</sup> Group quarters can be classified into non-institutional facilities, such as boarding schools, college dormitories, and group foster homes, and institutional facilities, such as jails, prisons, and nursing homes.

<sup>4</sup> For a review of the structure and contents of the ACS questionnaire,

See: U.S. Department of Commerce, Bureau of the Census, American Community Survey, Washington, D.C., 2005.

<sup>5</sup> The near poor are defined as those individuals who live in families with pre-tax, money annual incomes between 100% and 125% of the federal government's poverty lines.

<sup>6</sup> "Low income" families have been defined by poverty and welfare reform researchers as those with incomes below 200% of the federal poverty line for families of their given size and age composition.

See: Garth Mangum, Stephen Mangum, and Andrew Sum, The Persistence of Poverty in the United States, Johns Hopkins University Press, Baltimore, 2003.

groups for past employment and training programs funded by the U.S. Departments of Labor, Education, and Health and Human Services.

To facilitate the planning and design of youth workforce development and educational programs at the local level in Massachusetts, the Commonwealth Corporation funded the Center for Labor Market Studies to develop an indicators package for use by local WIB boards, educational agencies, regional P-21 planning committees, and state and local WIA program staff. An indicators package was prepared for the state as a whole, for five geographic regions in the state, and for the 16 local WIA service delivery areas. This User's Guide has been prepared to assist state and local WIA and education policymakers, planning staff, and program operators in their efforts to develop effective program strategies for teens and young adults (16-24 years old) across the entire state.

## **Data Sources for the Youth Development Indicators**

The demographic, socioeconomic, schooling and labor market indicators for the youth workforce development system in Massachusetts were generated from a number of different national and state data bases by the Center for Labor Market Studies of Northeastern University. First, the estimates of the size of the 16-24 year old population, its living arrangements, and its distribution by gender, age, race-ethnic group, and nativity status in 2000 were derived from the 2000 Census of Population and Housing.<sup>7</sup> The public use files from the 2000 Census were used by CLMS staff to produce these population estimates for the state, for each of the five regions, and for the 16 local Workforce Investment Board (WIB) planning areas.

A second major source of data for the state, regional, and local WIB indicators was the American Community Surveys (ACS) of the U.S. Census Bureau. The ACS survey is a large scale, national household and group quarters survey administered by the U.S. Census Bureau using a questionnaire quite similar in format to that of the long-form questionnaire used in conducting the 2000 Census. The ACS questionnaire collects detailed information on the demographic and socioeconomic characteristics of all persons living in households or group quarters (boarding schools, college dormitories, fraternities/sororities) and institutions (juvenile

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<sup>7</sup> The population estimates from the 2000 Census will represent the number of persons living in the state at the time of the 2000 Census including college students from other states and nations , primarily during March and April of that year.

homes, jails, prisons, nursing homes).<sup>8</sup> The survey also collects information on the school enrollment status of individuals and their educational attainment. For each individual 16 and older, information is collected on their labor force participation status at the time of the survey, their employment and unemployment status, and the occupations and industries of their jobs if employed. The ACS survey also collects information on the weeks of employment, average weekly hours of work, and earnings from employment (including self employment) in the 52 week period prior to the survey's completion. Information on the amount and sources of money income received by each household member 16 and older in the 52 week prior to the survey is used to estimate the annual income of each household member (16+), the household as a whole, and the family household unit to which they belong. The household and family income data are used to identify the poverty, economically disadvantaged and low income status of the family.<sup>9</sup> We use these income categories to describe the family income backgrounds of teens and young adults, the employment rates of youth from different income backgrounds, and the income deficits of the families of high school dropouts and young single mothers.

A third source of data used in developing the indicators of changes in Massachusetts youth labor force participation behavior, unemployment rates, and employment rates over time (2000 to 2007/2008) is the Current Population Survey (CPS). The CPS survey is a monthly household survey (about 1,250 households in our state) that is conducted by the U.S. Census Bureau for the U.S. Bureau of Labor Statistics.<sup>10</sup> It is the source of the monthly data on the nation's civilian labor force, its employed and unemployed individuals, and the unemployment rate. The CPS data can only be used to analyze youth labor force indicators for the state as a whole due to limited sample sizes and a lack of substate geographic identifiers for regions and local WIB areas.

A fourth source of data on four and five year high school graduation rates of public high school students in individual school districts across the state was provided by the Massachusetts

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<sup>8</sup> Residents of group quarters and institutions have only been interviewed in the ACS survey since 2006. We have used data for both 2006 and 2007 to describe their numbers and characteristics.

<sup>9</sup> The U.S. Census Bureau defines a "family household" as a household containing two or more members who are related to each other by blood, marriage, or adoption. Persons living alone are classified as a householder of one.

<sup>10</sup> For a more detailed overview of the design features of the CPS survey and key labor force and employment concepts and measures,

See: U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, January 2007, U.S. Government Printing Office, Washington, D.C., 2007.

Department of Elementary and Secondary Education. The state has been a national leader in collecting data on individual high school students' progress from the beginning of the ninth grade through graduation or dropping out prior to receiving a regular high school diploma. Data for individual high school districts were aggregated into WIB planning areas and five regions across the state. The fifth source of data collected from graduating high school seniors in all public high schools provides information on the college attendance, employment, and military service plans of these students near the end of their senior year. Data for these surveys are submitted by school districts to the Massachusetts Department of Elementary and Secondary Education. We have combined findings for individual school districts into 16 WIB planning areas and 5 WIB regions.

### **The Size of the Resident Population of 16-24 Year Olds in Massachusetts, WIB Regions, and WIB Service Delivery Areas and their Distribution by Living Arrangements and Demographic Groups, 2000 and 2006-2007**

Knowledge of the size and demographic characteristics of the teen (16-19) and young adult population (20-24 years old) at a point in time and changes in their numbers and characteristics over time is indispensable for state and local workforce development and educational policymaking and program planning. Data on the estimated numbers of 16-24 year olds residing in Massachusetts, the five regions, and the 16 local WIB planning areas at the time of the 2000 Census and the 2006-2007 American Community Surveys (ACS) are displayed in Tables 1 and 2.<sup>11</sup> For each of these two time periods, the population of 16-24 year olds is divided by their household living arrangements into the following three categories: civilian households, group quarters, and institutions. Civilian households include those living in single family homes, private rental apartments, public housing, and condominiums. Non-institutional group quarters include boarding schools, group foster homes, college dormitories, fraternities, and sororities. Institutions include juvenile homes for offenders, jails, prisons, mental hospitals, nursing homes, and temporary detention facilities.

Table 1 presents data on the estimated size of the 16-24 year old, resident population at the time of the 2000 Census. Population data for calendar years 2006-2007 are displayed in

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<sup>11</sup> The ACS survey only covered residents of group quarters and institutions beginning in calendar year 2006. The U.S. Census Bureau reported completing questionnaires with 3,900 residents of groups quarters in Massachusetts during 2006 and 4,000 residents in 2007.

Table 2. These latter population estimates are based on the weighted findings of the 2006-2007 American Community Surveys. For each time period, the members of the 16-24 year old population are divided into age, gender, race-ethnic, and nativity groups (native born, foreign born). Estimates of changes in the size and demographic characteristics of the 16-24 year old population between 2000 and 2006-2007 can be obtained by subtracting the numbers in Table 1 from those in Table 2.

Over the 2000-2007 period (based on the annual population estimates of the U.S. Census Bureau's Population Division), the 16-24 year old resident population of the state increased by 82,000 or slightly more than 11%, outpacing the rate of growth for the young adult population of the nation over the same time period. Strong growth took place in both the teen and 20-24 year old population of the state over the 2000-2007 period.

However, due to a declining number of births since the early 1990s and out-migration of families with children since 2001, the number of children under age 16 in the state in 2007 was nearly 7 percentage points below that of 2000. As a consequence, the teenaged population of the state (16-19) is projected by the U.S. Census Bureau to decline markedly (by 10%) between 2008 and 2015 with important implications for high schools, state colleges and universities, and the workforce development system. Similar demographic developments are taking place across the entire New England region. A higher fraction of the teen population of Massachusetts will be comprised of race-ethnic minorities and youth raised in single parent often low income families. Many of the members of these groups have fared poorly in state and national labor markets in recent years and are more prone to drop out of high school and not attend college.

### **The Educational Attainment/School Enrollment Status of Massachusetts Teens and Young Adults in 2006-2007**

Many youth workforce development and educational programs are targeted upon particular types of youth, including low income high school students, youth at-risk of dropping out of high school, high school dropouts, or jobless high school graduates. The American Community Surveys have collected information on the school enrollment status of each respondent and their educational attainment at the time of the survey.<sup>12</sup> The ACS data on school

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<sup>12</sup> Respondents are asked to report whether they had "attended a regular school or college" in the past 3 months. Only schools leading to a high school diploma or college degree are to be reported.



enrollment and educational attainment were combined by the authors to form six different reporting categories. Findings on this set of educational variables are presented in Table 3.

The data on school enrollment/educational attainment are displayed for 16-19 year olds and 20-24 year olds separately in Table 3. For 16-19 year olds, we estimate the number and percent of teens who were: high school students, college students, high school dropouts, and non-enrolled high school graduates.<sup>13</sup> For 20-24 year olds, two additional groups are included: those who completed some college but had no formal degree and were no longer enrolled in college and those who held an Associate's or higher degree but were no longer enrolled in college. "College students" will include out-of-state and out-of-country youth attending colleges in the state at the time of the ACS survey, but will exclude Massachusetts teens and young adults attending college out-of-state. The findings in Table 3 can be used to identify the number of teens and young adults who dropped out of high school before receiving a regular high school diploma and did not obtain a GED certificate. The findings for 20-24 year olds in Table 3 also can be used to identify the number of college dropouts. The number of college dropouts typically exceeds the number of non-college enrolled youth who possess an Associate's or higher academic degree.

### **The Civilian Labor Force Participation Behavior and Employment Status of Massachusetts Teens and Young Adults in 2005-2007**

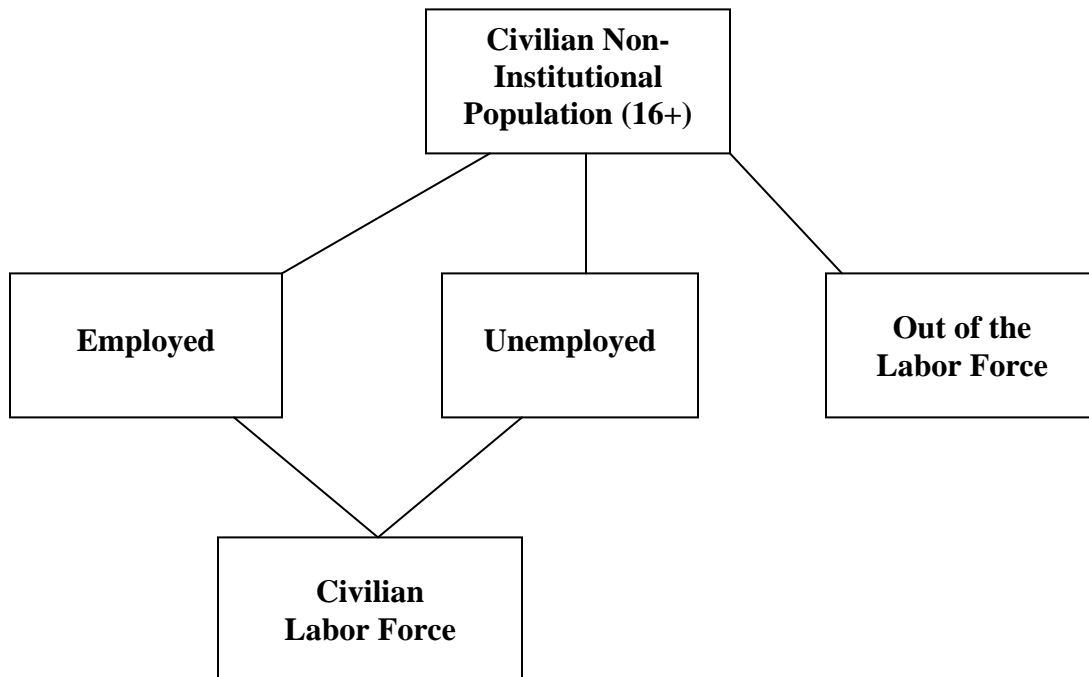
As noted in the introductory section of this report, knowledge of the labor force behavior, employment rates, and labor market problems of teens and young adults is critical to the effective design and implementation of workforce development programs for youth at the national, state, and local level. The American Community Surveys collect information on the employment status and the jobseeking behavior/job availability of all working-age members (16 and older) in each sample household and non-institutional group quarters, such as boarding schools, college dormitories and fraternities, sororities.<sup>14</sup> The responses of each working-age household member to the set of questions on their employment status and jobseeking behavior are used to classify them into one of the following three labor force categories: employed,

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<sup>13</sup> This last group will include a small number of youth who completed one or more years of college but were not enrolled in college at any time in the 3 months prior to the completion of the survey.

<sup>14</sup> Residents of institutions, such as jails, prisons, and nursing homes, are excluded from the questions on labor force activities.

unemployed, and out of the labor force. The definitions of the members of these three groups are presented below:



The employed are those individuals who worked for one or more hours for pay or profit in the week prior to the survey's completion, worked in a family owned business without pay for 15 or more hours, or had a paid job from which they were temporarily absent due to a vacation, temporary illness, or weather.

The unemployed are those individuals who did not work for pay or profit in the prior week, looked for a job in the past four weeks or were on layoff from a job to which they were informed by their employers that they would be recalled within the next 6 months, and were available to take a job last week.<sup>15</sup>

The out of the labor force group are those who were neither employed nor unemployed. They include retirees, adults with home responsibilities, the disabled, students not currently interested in paid employment, and those who desire a job but have not actively looked for one in the past four weeks.

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<sup>15</sup> In the monthly Current Population Survey, an unemployed individual must have actively looked for a job in the past four weeks. Passive job search activities such as reading help wanted ads or surfing Internet job sites do not count in determining whether a jobless individual will be classified as unemployed.

The employed and the unemployed are combined to form the civilian labor force. Estimates of the size of the civilian labor force (16-24) and the number of employed and unemployed are displayed in Table 4. These data appear in the indicators packages for the state as a whole, for each of the five geographic regions, and for individual WIA service delivery areas. The estimates are provided for the entire non-institutional population of 16-24 year olds and for a variety of age, gender, race-ethnic, nativity status, and educational attainment/school enrollment subgroups, including high school students.

The data on the labor force status of teens and young adults can be used to generate estimates of the values of three key labor force activity measures.

- The civilian labor force participation rate (CLF/P) which is the ratio of the number of persons in the civilian labor force to those in the civilian, non-institutional population
- The unemployment rate (U/CLF) which is the ratio of the unemployed to the civilian labor force.
- The employment/population ratio (E/P) which represents the value of the ratio of the employed (E) to the civilian non-institutional population (P). The value of the E/P ratio is determined by the group's civilian labor force participation rate and its unemployment rate.<sup>16</sup>

Table 5 presents estimates of each of these three labor force activity measures for the entire 16-24 year old population and for an array of age, gender, race-ethnic, nativity status, and school enrollment/educational attainment subgroups. This table of labor force activity measures appears in the youth workforce development indicators package for the state, the five geographic regions, and the individual local WIA service delivery areas. A detailed analysis of the labor force participation rates, unemployment rates, and employment rates of Massachusetts teens and young adults appears in the comprehensive report on the youth workforce that was prepared for the Commonwealth Corporation by the Center for Labor Market Studies. That report contains time series analyses of the data and comparisons of the findings for Massachusetts teens and young adults with their counterparts across the country and in the 50 states.

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<sup>16</sup> In algebraic terms,  $E/P = CLF/P * E/CLF$ . Where E/CLF equals the percent of the labor force that is employed. The value of E/CLF is equal to  $1 - U/CLF$ , where U/CLF is the unemployment rate.

## **Employment Rates of Massachusetts Teens and Young Adults by Household Income**

The employment rates of teens and young adults (20-24 year olds) in both the U.S. and Massachusetts tend to be positively associated with their family's income. Lower income youth, especially those living in families with incomes under \$20,000, typically are employed at rates below those of their middle income and upper middle income peers.<sup>17</sup> To identify how well state teens and young adults in different income groups have fared in finding some employment in recent years, we estimate their employment rates at the time of the ACS surveys in 2005-2007.

Findings on the estimated employment rates of all 16-24 year olds, 16-19 year olds, and 20-24 year olds in Massachusetts are displayed in Table 6. Youth were classified into six family income groups, ranging from less than \$20,000 per year to \$150,000 or more. For the state as a whole, teen employment rates in 2005-2007 varied widely across these income groups ranging from lows of 24% for those residing in the lowest family income group (under \$20,000) to a high of 46% for those living in families with annual incomes between \$80,000 and \$100,000. Very large gaps in high school students' employment rates also existed among family income groups. Students from the lowest income families were the least likely to be employed, and they lagged behind their counterparts in the rest of the nation and most other states in recent years.

## **Teens and Young Adults with No Paid Work Experience During the Year**

In addition to collecting information on the employment status of each working age respondent at the time of the survey, the ACS questionnaire also obtained information on the employment experiences of respondents in the 52 week period prior to the completion of the survey.<sup>18</sup> Data on weeks of paid employment over this 52 week period were collected. The information on weeks worked also can be used to identify those individuals with no paid employment during the entire prior 52 week period.

We have used the work experience data to identify the percent of 16-24 year olds with no paid work experience in the prior 52 weeks. Estimates of these year round jobless rates are presented in Table 7 for all 16-24 year olds combined and for those in selected age, gender, race-

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<sup>17</sup> A more detailed review of these employment relationships between teens and their family incomes is presented in the comprehensive background paper on youth workforce development issues prepared for the Commonwealth Corporation.

<sup>18</sup> Since the ACS survey is conducted throughout the calendar year, this 52 week period will cover different time periods for responding households. Those surveyed in January will report on the previous calendar year.

ethnic, and nativity status groups. These year-round youth joblessness rates also are presented for 16-24 year olds in five educational attainment/school enrollment groups. Very high fractions of high school students and dropouts report no paid work experience over the entire 52 week period. The lack of any paid employment during the entire year is a good predictor of their employability in the following year. Teen and young adult employment behaviors are characterized by strong path dependency; i.e., work behavior in time period  $t$  is significantly influenced by their behavior in prior time periods, e.g.,  $t-1$ ,  $t-2$ .

### **The Employment Experiences and Earnings of Teens and Young Adults During the Entire Year**

The American Community Surveys ask responding households to provide information on the employment experiences and earnings of each household member 16 and older in the prior 52 weeks. Information is collected on the number of weeks of paid employment, average hours of work per week of employment, and their combined earnings from wage and salary jobs and self-employment over that 52 week period.

In Table 8, we present estimates of mean weeks worked, mean weekly hours of work, and mean earnings of all 16-24 year olds who were employed in the prior 52 week period. We also present estimates of the mean earnings of all 16-24 year olds including those with no paid work experience in the prior 52 weeks.<sup>19</sup> The estimates are displayed for all 16-24 year olds and for age, gender, race-ethnic, educational attainment, and nativity subgroups of these youth.

### **The Major Industries and Occupations of the Jobs Held by Employed Teens and Young Adults**

Knowledge of the industrial and occupational characteristics of the jobs held by employed teens and young adults is helpful for local workforce development policymaking and program planning, the design of job development and placement activities, and career guidance. The ACS survey collects information on the names of the companies employing each individual worker and a description of the type of business operated by the employers of those persons who were working at the time of the survey. The U.S. Census Bureau then assigns a NAICS industry

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<sup>19</sup> Those with no paid work experience were assigned a value of zero for their earnings.

code to those employers based on these business names and product/service descriptions.<sup>20</sup> We have combined the more detailed industry codes into 13 major industry groups. Findings on the distribution of employed youth by the industries in which they worked are presented for the following four groups in Table 9: all 16-19 year olds, 16-19 year old high school students, all 20-24 year olds, and non-enrolled 20-24 year olds.

For each employed person, the ACS survey also collected information on their job titles and a brief description of their main job duties. This information was used by the U.S. Census Bureau to assign Standard Occupational Classification codes (SOC codes) for 470 detailed occupations. We have combined these 470 occupations into 11 major occupational groups, ranging from management support to production/transportation/material moving occupations. More than 70% of employed teens in the state worked in three major occupational categories: food preparation/building and ground cleaning, entry level sales, and office/administrative support. The percentage distribution of the employed across these 11 major occupational groups is presented for all 16-19 year olds, 16-19 year old high school students, all 20-24 year olds, and non-enrolled 20-24 year olds in Table 10 of the indicators package. These employment indicators are provided for the state, the geographic region to which the local WIB is assigned, and the local WIB planning area.

### **The College Labor Market Relatedness of the Jobs Held by Young Four Year College Graduates in Massachusetts and Local WIB Planning Areas**

Young, four year college graduates typically have not been a target group for the WIA workforce investment system. In recent years, however, a growing share of young Bachelor degree holders in both the state and the nation have become mal-employed; i.e., working in jobs that do not typically require a college degree.<sup>21</sup> College graduates who are mal-employed will earn substantially less per year than their peers who obtain jobs in the traditional college labor market. We have used the findings of the ACS surveys for calendar years 2005-2007 to classify the college labor market status of all of the jobs held by employed, Massachusetts young adults

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<sup>20</sup> The U.S. Census Bureau will assign NAICS codes to 271 industries on the ACS public use files. NAICS is an acronym for the North American Industrial Classification System, which is also used by the U.S. Bureau of Labor Statistics in coding industry employment data from the monthly CPS survey and by state agencies in classifying employment by industry.

<sup>21</sup> For a review of research findings on this issue by the authors of this study, See: Andrew Sum, Ishwar Khatiwada, Sheila Palma, Mal-employment Problems Among Young College Graduates in the United States and Massachusetts, Paper Prepared for the Commonwealth Corporation, Boston, March 2009.

(25 and under) with a bachelor's or higher degree in 2005-2007. We then estimated the share of employed, young college graduates who held college labor market jobs and the mean annual earnings of these college graduates by their college labor market status. Evidence reveals a very large annual earnings difference in favor of those college graduates who hold college labor market jobs in our state. The earnings differences between these two groups are very large for both men and women.

In Table 11, we present data on the number of employed persons under 25 who held a bachelor's or higher degree at the time of the 2005-2007 ACS survey and the number and percent of those who were employed in a college labor market occupation. The mean annual earnings of both groups also are displayed in Table 11, together with data on the absolute and relative size of the annual earnings differences between them. Improving the matches between young college graduates and jobs in the college labor market would help raise the annual earnings of young college graduates, increase the private and social economic returns to a bachelor's degree, and reduce job displacement of less educated young men and women in the Commonwealth.

### **Out-of-School and Out-of-Work Young Adults**

The data on the current school enrollment status and employment status of each youth can be combined to identify those youth who were both out-of-school and out-of-work.<sup>22</sup> Previous longitudinal national research has shown that those youth who spend above average fractions of their late teens and early 20s being disconnected from school and work are the most likely to be jobless and economically dependent in their mid to late 20s.<sup>23</sup> Keeping youth positively occupied during their late teens and early 20s is, thus, indispensable to their later labor market success. These estimates of the out-of-school and out-of-work population are displayed in Table 14. Findings are presented for all 16-24 year olds and for an array of demographic subgroups, including age, gender, race-ethnic, and nativity status subgroups. These estimates were generated for the state as a whole, the five regions, and individual WIB planning areas.

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<sup>22</sup> The ACS questionnaire asks each respondent 16 and older whether they had been enrolled in a school program at any time in the prior two month period. Students on summer leave from high school or college will be classified as enrolled.

<sup>23</sup> See: Douglas Besharov, (Editor), Disconnected Youth: Toward A Comprehensive Strategy, American Enterprise Press, Washington, D.C., 1999.

## **The Incidence of High School Dropout Problems and The Employment/Income Difficulties of Young High School Dropouts**

During the past few years, high school dropout problems have received increased attention from national, state, and local policymakers, from national foundations, and from educational and labor market analysts.<sup>24</sup> The labor market, income, fiscal, social, and civic problems associated with being a high school dropout have risen over the years especially among males, imposing substantial costs on the dropouts themselves, their families, and on society at large. In our comprehensive report on youth development issues for the Commonwealth Corporation, we presented a series of findings on the labor market, earnings, social and incarceration problems of young adult dropouts (22-34 years old) in the Commonwealth. In Tables 12 and 13, we display estimates of the number and percent of 16-24 year olds who were “school dropouts”, their employment rates at the time of the ACS surveys, and their income difficulties. A “high school dropout” is an individual who was not enrolled in school at the time of the ACS survey, had not graduated from high school with a regular diploma, and did not hold a GED certificate or its equivalent.<sup>25</sup>

Table 12 provides data on the number and percent of 16-24 year olds who were classified as high school dropouts. Findings are presented for all 16-24 year olds combined and for gender, age, race-ethnic, and nativity subgroups. Table 13 presents data on the employment rates for 16-24 year old dropouts by age group and the percent of those dropouts who were either economically disadvantaged or members of low income families.

## **The Incidence of Motherhood Among Young Women, Single Parent Family Formation, and The Income Inadequacy Problems of Young Mothers**

Pregnant and parenting teens and young adults have frequently been identified as target groups for youth workforce development programs. The ACS data can be used to identify the number and percent of young women who were mothers,<sup>26</sup> the share of these mothers who were

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<sup>24</sup> See: Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin, et al., An Assessment of the Labor Market, Income, Social, Civic, Health and Fiscal Consequences of Dropping Out of High School: Findings for Michigan Adults in the Twenty-First Century, Report Prepared for the Mott Foundation, Flint, Michigan, 2008.

<sup>25</sup> Unfortunately, the ACS information on educational attainment does not distinguish an individual with a regular high school diploma from a GED recipient. On average, GED holders do not fare as well in the labor market as regular high school graduates, and they fare far less well in college.

<sup>26</sup> Only those mothers who are living with their children can be identified with the ACS data. We cannot identify either absent mothers or absent fathers.



single parents, and their family income status. Table 15 presents estimates of the number and percent of women who were mothers for all 16-24 year olds and for three age subgroups (16-19, 20-21, and 22-24). The number and percent of mothers who were single parents also are presented in this table. Statewide, a very high fraction (70%) of these young mothers are single parents.

The family incomes and sources of the incomes of those women who were mothers were also analyzed. Findings were used to estimate the number and percent of young mothers who were either economically disadvantaged or low income. An “economically disadvantaged” individual is someone whose family income was below 125% of the poverty line for a family of their given size and age composition or who received cash public assistance income, food stamps, or Social Security/SSI benefits. A “low income” individual is a person living in a family with an income below 200% of the federal poverty line for a family of their given size and age composition.

### **The Disabled Young Adult Population of Massachusetts, 2005-2007**

The American Community Surveys include a set of questions designed to estimate the existence of physical or mental disabilities among the resident population of the state.<sup>27</sup> Table 17 presents estimates of the number and percent of 16-24 year olds who were characterized by some type of disability, with breakouts of the data by gender, age, race-ethnic group, nativity status, and educational attainment/school enrollment status. These estimates are provided for the state as a whole, for each of the regions, and for local WIB planning areas. A relatively high fraction (6%) of the state’s 16-24 year olds report a physical or mental disability that restricts their physical or mental activities, including an above average fraction of high school dropouts.

The labor force activity status of the 16-24 year old disabled population is described in Table 18, both overall and for age, gender, race-ethnic, nativity, and educational subgroup of the disabled population. For each group of disabled young adults, data are presented on their labor force participation rates, their unemployment rates, and their employment/population ratios. Disabled youth tend to experience below average labor force participation rates and higher than average unemployment rates. As a consequence, they are employed at below average rates, with

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<sup>27</sup> One of the survey questions asks respondents whether they have a disability lasting 6 months or longer that makes it difficult for them to dress, bathe, or get around inside the home or to learn, remember or concentrate.

particular difficulties experienced by those disabled teens and young adults with limited formal schooling. Limited work rates in their teens and young adult years will increase their difficulties in achieving adequate earnings and place them at above average risks of dependency and low incomes over their entire adult life.

There is a second source of information on the disability status of respondents on the American Community Surveys. A follow-up question asks all persons 15 and older whether they possessed a “physical, mental, or emotional condition lasting six months or more” that limited their ability to either go out of the home alone to shop or to work outside the home. Persons who reported that they had a disability that made it difficult to work outside of the home were classified as “work disabled”. In Table 19, we present our estimates of the number of 16-24 year olds who were work disabled. The estimates are provided for all 16-24 year olds combined and for age, gender, race-ethnic, and educational attainment groups. Statewide, there were slightly over 23,000 working-disabled 16-24 year olds, accounting for about 3% of the resident population in that age group.

One would expect that young adults with work related disabilities would experience greater difficulties in actively looking for work and successfully finding jobs. In Table 19, we also present data on the labor force participation status and the employment/unemployment status of 16-24 year olds in the Commonwealth who were working disabled. For comparison purposes, we include similar data for the non-work disabled. Findings are displayed for all 16-24 year olds and for each of the demographic and educational subgroups.

In Table 20, we convert the data on the labor force status and population of the working disabled into the following three labor force activity measures: the labor force participation rate, the unemployment rate, and the employment/population ratio. As expected, the working disabled are considerably less likely than their non-disabled peers to be active in the labor force (32% vs. 64%) and much more likely to be unemployed when they do look for work (32% vs. 13%). As a consequence, only 1 of 5 work disabled youth were employed on average over the 2005-2007 time period versus 55 of every 100 non-work disabled youth. Employment rates of the work disabled were particularly low among teens, high school students, and high school dropouts. Their limited access to jobs in their late teens and early 20s will seriously constrain their ability

to obtain adequate employment and earnings in their mid to late 20s and impose substantial fiscal costs on the rest of society.

### **The Institutionalization Status of the State's and Region's 16-24 Year Old Population in 2006-2007**

Our last set of youth indicators from the American Community Surveys for 2006-2007 provide estimates of the numbers and demographic/socioeconomic characteristics of the institutionalized population in each local WIB area, region, and the state at the time of the ACS surveys. The institutionalized are those who are residing in juvenile homes (DYS group facilities), jails, prisons, and mental hospitals at the time of the survey. Findings are presented on the number and percent of the resident 16-24 year old population living in these institutions, with breakouts by age, gender, and educational attainment. For the state as a whole, a substantial majority of the institutionalized population are males (80 to 90 percent), and high school dropouts tend to dominate the non-enrolled population of institutionalized young adults. A number of new training initiatives to prepare returning jail and prison inmates for jobs upon their release have been funded across the state in recent months. A high and rising share of the state's adult population are either in jail/prison or on probation/parole.

### **Four and Five Year On-Time Graduation Rates for Massachusetts Public High School Students From the Classes of 2006, 2007, and 2008**

During the past six years, states have been encouraged to collect comprehensive, uniform information on the high school graduation status of those students who entered the ninth grade. The U.S. Congress endorsed the collection of such data on high school graduates as part of the No Child Left Behind Act of 2002 although it did not mandate states to collect and report such data.

The ability of the state of Massachusetts to reliably measure four year, on-time graduation rates (as well as five year and six year graduation rates) has improved considerably in the past few years as the result of its implementation of an individual student based tracking system (SIMS) for the graduating Classes of 2006, 2007 and 2008.<sup>28</sup> The No Child Left Behind

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<sup>28</sup> SIMS is an acronym for the Student Information Management System. Public high school students in the state are assigned an ID number that is used to track their whereabouts in the state public education system through high school graduation. Adjustments are made for students transferring out of the public school system into high schools

Act and the National Governors Association Compact had recommended use of the four year, on-time graduation rate as a measure of a state's progress in achieving high school graduation goals. For the Class of 2006, Massachusetts reported a four-year, on-time graduation rate of just under 80 percent, the highest of the seven states reporting such rates for recent classes. The four year, on-time graduation rates for the other six states ranged from a low of 64% in New York to 79% in Vermont.

The values of the four year, on-time high school graduation rates for students from public schools across the state for the classes of 2006 and 2007 are displayed in Table 22 while the four year, on-time graduation data for the Class of 2008 appear in Table 23. The five year graduation rates for the Class of 2006 are also displayed in Table 22. Findings are presented for all students and for gender, race-ethnic groups, and selected socioeconomic groups, including special education students and low income students.

The four-year, on-time graduation data for the Class of 2006 students were compiled by public school districts into the five regions and the 16 local WIA service delivery areas. Findings for regions are displayed in the indicators package for each region with breakouts by school district. Similar findings for the 16 WIA service delivery areas are provided in the indicators packages for each of the local WIA areas. Local WIBs and regional P-21 planning teams should utilize this information in their plans to help reduce the future incidence of high school dropout problems in the Commonwealth.

Findings on the four year on-time graduation rates for the state's public school students show some modest improvement over the past three years, with the overall graduation rate rising from just under 80% for the Class of 2006 to 80.9% for the Class of 2007 and 81.2% for the Class of 2008 (See Table 23). In each year, women have graduated on time at rates in excess of those of men with approximately a seven percentage point gap between these two groups in the Class of 2008. There are even considerably larger gaps across race-ethnic groups and combinations of gender and race. For the Class of 2006, on-time graduation rates ranged from lows of 51% among Hispanic males and 57% among African American males to highs of 88% for Asian and White females. High school students with limited English proficiency, with special

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out of the state or to private high schools in the state and for students transferring into the public school system from other states/ countries in calculating the values of the four year and five year on-time graduation rates.

education needs, and from low income families graduate at rates well below those of each of their respective counterparts. There also are huge gaps between the on time graduation rates of students in the state's large urban districts and low income suburbs and those of their peers in affluent suburban school districts across the state. These findings are discussed in greater detail in our comprehensive report on youth development issues for the Commonwealth.

### **The Post-High School, College Attendance, Work, and Military Service Plans of Recent Public High School Graduates in Massachusetts**

Among the various objectives of youth workforce development programs over the years, including school-to-career programs and school-to-work transition programs in Massachusetts and other states, has been that of facilitating the early transition of new high school graduates to the post-secondary educational and training world or to the job market. Keeping young high school graduates actively engaged in college, training, and/or work is highly desirable to help them transition to the adult labor market in their early to mid 20's.

Each spring, the Massachusetts Department of Education asks each local public school district across the state to conduct an exit survey of the plans of new high school graduates for attending college, a training program, working, or serving in the military in the fall immediately following their graduation from high school. The exit survey is typically administered in the month of May. Data are collected at the high school level, and findings are combined into public school districts and at the state level.

Findings on the college/ work/ military service plans of public high school graduates from the Classes of 2006 are displayed in Table 24. Analyses by the Center for Labor Market Studies of the planned data with the actual college enrollment, employment, and military service experiences of Boston public school graduates from multiple school years earlier in the decade revealed a high degree of correspondence between the two sets of data. On average, however, students expressing an intent to work in the fall immediately following graduation were less successful in fulfilling their plans than their peers who planned to attend college. Those students indicating that they had no specific college/ work plans were the most likely to be both out-of-school and out of work at the time of the follow-up survey and in need of further workforce development assistance.

Nearly 78% of Massachusetts high school graduates from the Class of 2006 planned to attend either a 2-year or 4-year college or university upon high school graduation. The majority of those graduates had planned on attending a four year college or university. Another 3% of students planned on attending some other type of post-secondary school or training program, other than a 2 or 4 year college. Only 10% of graduates planned on only working after graduation. There were substantial differences in the 2 and 4 year college plans across gender and race-ethnic groups of students. Over 84% of females in the Class of 2006 planned on attending a 2 or 4 year college versus 72% of males. Across race-ethnic groups, Asian graduates had the highest percentage of graduates planning to attend a 2 or 4 year college (82%), followed by Whites (80%), African Americans (67%), and Hispanics (54%). The sizable gaps in the college aspirations of urban and affluent high school suburban graduates will be analyzed in the comprehensive report on youth development issues in Massachusetts.

**Appendix A:**  
**Constructing the Geographic Boundaries of the Five Regions and Workforce  
Investment Board (WIB) Areas of Massachusetts Based on the U.S. Census  
Bureau’s Public Use Microdata Areas (PUMA)**

The ability to develop youth workforce development indicators for sub-state areas, including regions and individual WIA service delivery areas, was dependent on our success in organizing available ACS data into regions and local WIA areas. The use of the public use micro-record data from the American Community Surveys for local areas across the state required us to aggregate U.S. census Bureau Public Use Microdata Areas (PUMAs) to form regional and local Workforce Investment Board (WIB) areas since the PUMS data files from the ACS do not provide WIB identifiers for individual residents. PUMA areas contain resident populations of 75,000 or more in the American Community Surveys (ACS). These PUMA areas can consist of parts of large cities (Boston, Springfield), or combinations of cities and town and rural areas, and they often cross county boundaries. A PUMA area may cover parts of two or more cities/counties; thus, decisions must be made as to which county the PUMA should be assigned. The research staff at the Center for Labor Market Studies obtained a listing of the cities and town comprising each WIB area and assigned the Census PUMA code corresponding to that particular set of cities/towns to construct each WIB area. The PUMS assignment process used by CLMS staff to assign PUMAS to specific WIB areas in Massachusetts is summarized in the table below. There are five regions and sixteen WIA service delivery areas.

Table:  
Classification of Geographic Regions and Massachusetts  
WIB Areas by Their CLMS Assigned PUMA Codes

Region/WIB Area	Census PUMA Code	Resident Population in 2005/2007
<b>Region 1</b>		<b>817,686</b>
Berkshire	100	114,933
Franklin/Hampshire	200, 1600	212,898
Hampden	1700, 1800, 1900, 2000	489,855
<b>Region 2</b>		<b>673,189</b>
Central Massachusetts	1500, 2100, 2200, 2300	526,771
North Central	300	146,418
<b>Region 3</b>		<b>1,011,634</b>
Greater Lowell	500, 600	282,535
Lower Merrimack	700, 800	270,581
North Shore	900, 1000, 1100, 1200	458,518
<b>Region 4</b>		<b>2,253,377</b>
Metro North	1300, 2700, 2800, 2900, 3000, 3100, 3200	815,054
Metro South/West	400, 1400, 2400, 2500, 2600, 3400, 3500, 3600	893,309
South Coastal	3700, 3800, 3900, 4600	545,014
<b>Region 5</b>		<b>1,034,463</b>
Bristol	4200, 4300, 4400	350,860
Brockton	4000, 4100	263,675
Cape Cod	4700, 4800	246,730
Greater New Bedford	4500	173,198
<b>Boston WIA Area</b>	3301, 3302, 3303, 3304, 3305	<b>572,282</b>
<b>Massachusetts Population</b>		<b>6,362,631</b>