

ASSESSMENT OF HIGHER EDUCATION NEEDS IN WAUKESHA COUNTY

Submitted to:

WAUKESHA COUNTY
HIGHER EDUCATION
COALITION

The Waukesha County Higher Education Coalition

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March 13, 2008

1.0 INTRODUCTION

1.1 Project Background

The Waukesha County Action Network (WCAN), established in 2005, is made up of community and private sector business leaders united in their mission to “*Facilitate discussions in the community, develop solutions and drive action with the objective of improving the business climate and enhancing the quality of life in the County and Region.*” In line with this, WCAN closely follows business trends in the county and state, including economic development, the county workforce needs, and related higher education trends.

In July of 2005, Wisconsin Governor Jim Doyle directed the University of Wisconsin System to study higher education needs in metro Milwaukee. President Kevin Rielly’s charge to the six member study committee was to identify ways to (1) increase the number of baccalaureate degree holders while maintaining access and affordability, (2) increase graduate programs, and (3) create a research presence on the UW-Waukesha campus. WCAN was asked to participate in this study. On January 30th of 2006, WCAN submitted a report that there was a need for more baccalaureate and graduate degrees especially in science, engineering, nursing, business and for research. This conclusion was drawn after multiple interviews with top companies in the County.

Feedback from the University System requested greater specificity to the types of degrees and the number of potential interested students. This was part of the impetus behind the Higher Education Needs Assessment. It should be noted that a multitude of studies similar to this study have been done over the past decade. These include:

- November 2001 – Economic Development Task Force Report – Greater Milwaukee Committee (born out of the 2000 Economic Summit II)
- February 2003 – Survey of Non-Traditional Students – Prepared by UW System Market Research
- July 2005 – College Education Survey – prepared by Waldbillig & Besteman
- November – 2005 – Increasing Baccalaureate Work Group (IBWG) – UW Workgroup
- December 2006 – Commission on Enhancing the Mission of the UW Colleges – UW appointed commission members

However, none have inspired action steps in an effort to grow not only Waukesha County’s workforce and businesses, but to grow Wisconsin overall. In the moving to answer these questions WCAN forged the Waukesha County Higher Education Coalition (WCHEC), bringing together all vested parties in public higher education. In addition to WCAN, the Coalition is made up of the University of Wisconsin-Waukesha (UWW), the Waukesha County Executive’s Office, and Waukesha County Technical College (WCTC). This unified coalition has worked to identify what the degree needs are for business, and insight to the desires of current and future students, along with economic trend data. These results have been combined to create a blueprint for higher educational needs in the county that align with business to stimulate dynamic economic development.

To assist in accomplishing this task, WCAN, on behalf of the WCHEC contracted with MGT of America, Inc. to conduct an educational needs assessment of Waukesha County. It is intended that the results of this needs assessment will serve as a basis for specific initiatives and actions to address current and future postsecondary training and education needs and gaps in Waukesha County through both short-term and long-term strategies.

1.2 Framework for Conducting the Needs Assessment

To identify the higher education needs in the county, MGT employed a multi-faceted methodology that gauged the needs of the community, gathered opinions and perceptions of business leaders, identified interest and need among local employers and students, and incorporated these findings with demographic, education, and business trends. MGT relied on three general types of information to assess the degree of higher education need in Waukesha County.

First we considered a variety of statistical data from recognized publicly available databases. These included the Wisconsin Department of Workforce Development, the Wisconsin Department of Administration, U.S. Census Bureau, and the U.S. Bureau of Labor Statistics.

Second we considered the perceptions of numerous business owners, executives, and human resource directors. These individuals all have firsthand experience with the issues related to recruiting, hiring, and retaining a qualified workforce, which provides them with a full appreciation of the education and skill needs in the county.

Finally, to round out the qualitative information gathered through the interviews MGT examined results from two surveys. One was an employer survey conducted by MGT, and the other was a survey of local college students conducted by Waukesha County Technical College's Office of Institutional Research. The surveys generally sought to gauge the need for higher education programs in Waukesha County:

- The employer survey assessed employer's current and expected training and education need for their employees and their awareness and satisfaction of local training and education opportunities.
- The student survey primarily evaluated the higher education needs of students at WCTC and the University of Wisconsin-Waukesha (UWW), and included some students from other institutions as well.

Findings from both surveys and the statistical data provide a profile of county workforce needs and help to confirm whether perceptions expressed in the interviews would continue to hold in the near future. The results from the analysis of information are organized by chapters:

- Chapter 2.0 provides an analysis of demographic and employment trends in the county, such as population data and employment trends.

- Chapter 3.0 summarizes the interviews with members of the local business and community leaders and describes the results of the local employer survey.
- Chapter 4.0 draws conclusions from all data and input, and provides an estimate of the potential demand for bachelor's and graduate degree programs in Waukesha County.

The appendices of the report provide the full student survey report, detailed population, and occupational projections, and a list of community and business leaders agreeing to be interviewed for the study.

2.0 MARKET ANALYSIS FOR HIGHER EDUCATION PROGRAMS IN WAUKESHA COUNTY

2.1 Introduction

Assessing a county's need for higher education opportunities requires examining a host of factors that include population growth, industry and occupational trends, and the availability of existing higher education programs in the region. All are key factors impacting an institution's ability to establish, grow, and sustain higher education programs. In this chapter we review and analyze available data to identify what (if any) skills, occupations, and related degrees (baccalaureate and graduate) are in demand or projected to be in demand in Waukesha County. The chapter includes the following sections:

- Historic and projected population growth
- Current industrial mix and projected occupational need
- Educational attainment and enrollments
- Current higher education opportunities

2.2 Historic and Projected Population Growth

Wisconsin's population grew by 14 percent between 1990 and 2006. The growth rate varied across counties, as noted in **Exhibit 2-1**. Among the largest 10 counties, which accounted for 54 percent of the total population in 2006, Waukesha had one of the highest growth rates at 25 percent. Two other counties (Kenosha and Dane) had a slightly higher rate at 26 percent, and Milwaukee County the largest county in the state experienced a 4.6 percent decrease in its population between 1990 and 2006.

**EXHIBIT 2-1
HISTORICAL TRENDS IN POPULATION GROWTH
WISCONSIN AND ITS 10 LARGEST COUNTIES**

	1990	2006	% change 1990-2006	Rank % Change (Among Largest 10)
United States	248,845,816	299,398,484	20.3%	na
Wisconsin	4,891,954	5,556,506	13.6%	na
County				
Milwaukee	959,212	915,097	-4.6%	10
Dane	367,085	463,826	26.4%	2
Waukesha	304,715	380,985	25.0%	3
Brown	194,594	240,213	23.4%	4
Racine	175,034	196,096	12.0%	9
Outagamie	140,510	172,734	22.9%	5
Winnebago	140,320	160,593	14.4%	6
Rock	139,510	159,153	14.1%	7
Kenosha	128,181	162,001	26.4%	1
Marathon	115,400	130,223	12.8%	8

Source: U.S. Census Bureau, Wisconsin Department of Workforce Development.

Looking to the future, Wisconsin's population is expected to grow by 10 percent between 2005 and 2020. The counties that currently have the most population are expected to continue to have the largest number of residents in 2020 (**Exhibit 2-2**). This exhibit also lists the five counties with the largest projected growth rate.

**EXHIBIT 2-2
PROJECTED POPULATION GROWTH IN WISCONSIN**

Area	2005	Projected Number 2020	% change 2005-20	Rank
Wisconsin	5,563,896	6,110,878	10%	na
Five Counties with Largest Projected Population				
Milwaukee	956,478	1,014,293	6.0%	1
Dane	455,927	527,534	15.7%	2
Waukesha	374,891	409,570	9.3%	3
Brown	237,515	269,812	13.6%	4
Racine	193,189	206,989	7.1%	5
Five Counties with Largest Projected Growth Rate				
St. Croix	72,377	95,202	31.5%	1
Calumet	44,182	53,473	21.0%	2
Outagamie	170,939	198,948	16.4%	3
Dane	455,927	527,534	15.7%	4
Walworth	96,182	111,237	15.7%	5

Source: U.S. Census Bureau, Wisconsin Department of Administration.

An equally important factor to consider is the projected growth of the traditional college age population (those in their early to mid-twenties). As depicted in **Exhibit 2-3**,

**EXHIBIT 2-3
PROJECTED GROWTH OF THE AGE 20-24 COHORT IN WISCONSIN**

Area	2005	Projected Number 2020 (Age 20-24)	% change 2005-20	Rank
Wisconsin	401,974	373,652	-7%	na
Five Counties with Largest Projected Age 20-24 Population				
Milwaukee	69,586	61,821	-11.2%	1
Dane	47,852	46,637	-2.5%	2
Waukesha	19,964	21,316	6.8%	3
Brown	17,864	17,905	0.2%	4
Winnebago	14,372	13,524	-5.9%	5
Five Counties with Largest Projected Growth Rate (Age 20-24)				
Calumet	2,568	2,916	13.6%	1
St. Croix	4,555	5,052	10.9%	2
Walworth	8,721	9,669	10.9%	3
Waukesha	19,964	21,316	6.8%	4
Ozaukee	4,653	4,842	4.1%	5

Source: U.S. Census Bureau, Wisconsin Department of Administration.

Waukesha is projected to be one of the five counties with largest number of residents age 20 to 24 in 2020. Waukesha is also among the five counties with the largest growth rate (6.8%) of the 20 to 24 age cohort.

Waukesha is also among the five largest counties with residents from age 25 to 44, with 102,989 residents projected for 2020 (**Exhibit 2-4**). Non-traditional students tend to come from this group, and they are most likely to be working while enrolled in degree programs or continuing education. As a result, location and proximity tend to be more important issues for these students. These trends indicate substantial growth of the critical “college-going” age cohorts, suggesting potential for sustained future demand for higher education opportunities.

**EXHIBIT 2-4
PROJECTED GROWTH OF THE AGE 25-44 COHORT IN WISCONSIN**

Area	2005	Projected Number 2020 (Age 25-44)	% change 2005-20
Wisconsin	1,517,367	1,596,293	5%
Five Counties with Largest Projected Age 25-44 Population			
Milwaukee	277,708	281,559	1.4%
Dane	137,819	145,266	5.4%
Waukesha	98,253	102,989	4.8%
Brown	70,925	74,722	5.4%
Outagamie	51,017	58,403	14.5%
Five Counties with Largest Projected Growth Rate (Age 25-44)			
St. Croix	21,421	28,145	31.4%
Pepin	1,784	2,257	26.5%
Vernon	6,398	7,552	18.0%
Clark	8,213	9,616	17.1%
Monroe	10,798	12,610	16.8%

2.3 Current Industrial Mix and Projected Occupational Need

Education planning also requires examining trends in the workforce and economy to insure programs are generating graduates that meet the needs of the local business community. The concentration of workers employed by the manufacturing sector is considerably higher in Wisconsin than the national average (Exhibit 2-5), and Waukesha County has a relatively high concentration of workers in the manufacturing sector, even by state standards. Approximately 21 percent of Waukesha County’s workforce versus 18 percent of Wisconsin’s workforce is employed in the manufacturing industry. Another 22 percent of Waukesha’s workforce works in Trade, Transportation, or Utilities. Nationally about 19 percent of the workforce is employed in this sector. The bulk of these workers are employed in retail trade.

**EXHIBIT 2-5
NUMBER OF EMPLOYEES BY INDUSTRY SECTOR, 2006**

Industry	Waukesha County		Wisconsin		United States n (in thousand)	
	n	%	n	%	n	%
Trade, Transportation, Utilities	51,790	22%	559,136	20%	26,231	19%
Manufacturing	48,899	21%	505,807	18%	14,197	10%
Education & Health Services	33,846	14%	560,469	20%	17,838	13%
Professional & Business Services	29,473	13%	272,098	10%	17,552	13%
Leisure & Hospitality	20,053	9%	268,731	10%	13,143	10%
Construction	16,328	7%	129,497	5%	7,689	6%
Financial Activities	14,771	6%	158,480	6%	8,363	6%
Other Services	7,739	3%	84,637	3%	5,432	4%
Public Administration/Government	6,357	3%	140,557	5%	21,990	16%
Information	4,986	2%	50,944	2%	3,055	2%
Natural Resources & Mining	610	0%	22,041	1%	684	1%
Unclassified	8	0%	12,416	0%	na	na

Source: U.S. Bureau of Labor Statistics, Wisconsin Department of Workforce Development.

Consistent with the concentration of workers in the manufacturing sector, approximately 15 percent of Waukesha's workforce is employed in production occupations (**Exhibit 2-6**). Another 20 percent are employed in office and administrative support positions. Other counties in the region have similar occupational distributions. For the purposes of workforce planning, the Wisconsin Department of Workforce Development (WDWD) divides the states into 11 Workforce Development Areas (WDA). Waukesha is included in a region along with three other counties: Milwaukee, Ozaukee, and Washington. The department refers to this region as the Milwaukee-WOW region.

**EXHIBIT 2-6
NUMBER OF EMPLOYEES BY OCCUPATIONAL GROUPING, 2006**

Occupation Groups	Waukesha		Milwaukee		Ozaukee		Washington	
	n	%	n	%	n	%	n	%
Office and Administrative Support Occupations	40,440	20%	86,820	19%	5,490	15%	8,680	16%
Production Occupations	31,260	15%	49,490	11%	8,150	22%	9,040	17%
Food Preparation and Serving Related Occupations	16,960	8%	39,660	9%	4,580	13%	3,890	7%
Transportation and Material Moving Occupations	15,280	7%	37,580	8%	1,280	4%	4,960	9%
Construction and Extraction Occupations	13,250	6%	10,460	2%	1,630	4%	3,080	6%
Business and Financial Operations Occupations	10,120	5%	27,480	6%	1,070	3%	2,260	4%
Management Occupations	9,090	4%	19,290	4%	1,410	4%	1,680	3%
Healthcare Practitioners and Technical Occupations	9,040	4%	30,050	7%	1,970	5%	2,400	5%
Education, Training, and Library Occupations	9,000	4%	27,110	6%	3,700	10%	6,070	11%
Installation, Maintenance, and Repair Occupations	8,770	4%	15,900	4%	1,240	3%	1,750	3%
Computer and Mathematical Occupations	6,840	3%	11,340	3%	220	1%	850	2%
Architecture and Engineering Occupations	6,830	3%	9,820	2%	810	2%	860	2%
Building and Grounds Cleaning and Maintenance Occ.	6,760	3%	16,390	4%	1,880	5%	2,290	4%
Healthcare Support Occupations	5,580	3%	15,470	3%	910	3%	1,120	2%
Personal Care and Service Occupations	4,850	2%	18,060	4%	850	2%	2,200	4%
Protective Service Occupations	2,780	1%	10,860	2%	-	-	560	1%
Arts, Design, Entertainment, Sports, and Media Occ.	2,670	1%	8,020	2%	370	1%	760	1%
Supervisors, Sales Workers	2,480	1%	3,950	1%	270	1%	560	1%
Community and Social Services Occupations	2,150	1%	6,910	2%	250	1%	-	-
Life, Physical, and Social Science Occupations	1,490	1%	4,110	1%	180	0%	250	0%
Farming, Fishing, and Forestry Occupations	50	0.02%	-	-	-	-	-	-
Legal Occupations	-	-	4,240	1%	-	-	-	-

Source: U.S. Bureau of Labor Statistics, Wisconsin Department of Workforce Development.
Key – indicates data is not reported because of confidentiality concerns.

Long-term projections for the Milwaukee-WOW region indicate that the occupations with the most projected total openings are in retail sales, food services, and registered nurses (**Exhibit 2-7**). These openings include those due to both replacement openings and newly created openings. New openings are distinct from replacement openings because they gauge the growth of an occupation, where as, replacement openings are existing positions that are unfilled. The occupations with the most projected replacement openings are retail sales, cashiers, and food services.

**EXHIBIT 2-7
OCCUPATIONS WITH MOST ANNUAL PROJECTED TOTAL OPENINGS 2004-14
MILWAUKEE-WAUKESHA-OZAUKEE-WASHINGTON REGION (MILWAUKEE-WOW)**

Top 20 Occupations with Most Openings 2004-2014	Estimated Employment		Total Annual Openings (new + replacement)	Typical Education/ Degree Required
	2004	2014		
Retail Salespersons	23,010	26,300	1170	Short-term OJT
Combined Food Preparation and Serving Workers, Including Fast Food	15,190	17,630	900	Short-term OJT
Registered Nurses	14,740	19,760	810	Associate
Waiters and Waitresses	11,740	13,500	780	Short-term OJT
Cashiers	15,960	15,980	780	Short-term OJT
Janitors and Cleaners, Except Maids and Housekeeping Cleaner	16,800	19,740	610	Short-term OJT
Laborers and Freight, Stock, and Material Movers, Hand	14,830	15,930	600	Short-term OJT
Customer Service Representatives	15,410	18,560	550	Moderate-term OJT
Team Assemblers	13,460	14,700	470	Moderate-term OJT
Office Clerks, General	15,460	16,750	470	Short-term OJT
Personal and Home Care Aides	7,800	11,140	460	Short-term OJT
Sales Representatives, Wholesale and Manufacturing, Except Tech. & Scientific Products	10,250	11,640	410	Moderate-term OJT
Nursing Aides, Orderlies, and Attendants	11,050	13,180	360	Vocational
Receptionists and Information Clerks	8,080	9,600	350	Short-term OJT
Bookkeeping, Accounting, and Auditing Clerks	13,790	14,710	350	Moderate-term OJT
Executive Secretaries and Administrative Assistants	10,190	11,540	340	Moderate-term OJT
Stock Clerks and Order Fillers	9,050	8,300	340	Short-term OJT
Truck Drivers, Heavy and Tractor-Trailer	10,550	12,040	320	Moderate-term OJT
Home Health Aides	4,630	7,090	310	Short-term OJT
General and Operations Managers	8,720	10,070	310	Bachelor's

Source: Source: U.S. Bureau of Labor Statistics, Wisconsin Department of Workforce Development.

Notes: OJT=On the job training by the employer. Employment is a count of jobs rather than people, and includes all part- and full-time non-farm jobs. Employment is rounded to the nearest ten.

Total number of job openings indicates the total workforce demand for an occupation, but the number of newly created openings is an indicator of growth in demand (**Exhibit 2-8**). The occupations projected to have the most new openings in the Milwaukee-WOW region between 2004 and 2014 are:

- Registered Nurses (500)
- Retail Salespersons (330)
- Personal and Home Care Aides (330)
- Customer Service Representatives (320)

Nursing and Retail Salespersons are also occupations with the most projected openings statewide. Since nursing is among the occupations with the most openings and most *new* openings, it suggests a strong need for nurses. This corresponds to recent national trends that indicate a critical shortage of nurses for the near future.

**EXHIBIT 2-8
OCCUPATIONS WITH MOST ANNUAL PROJECTED NEW OPENINGS 2004-14
MILWAUKEE-WAUKESHA-OZAUKEE-WASHINGTON REGION (MILWAUKEE-WOW)**

Top 20 Occupations with Most New Openings 2004-2014	Estimated Employment					
	2004	2014	New Annual Open-ings	% Change 2004-14	Statewide Top 20	Typical Education/Degree Required
Registered Nurses	14,740	19,760	500	34	✓ (1)	Associate or Bachelor's
Retail Salespersons	23,010	26,300	330	14	✓ (2)	Short-term OJT
Personal and Home Care Aides	7,800	11,140	330	43	✓ (6)	Short-term OJT
Customer Service Representatives	15,410	18,560	320	20	✓ (4)	Moderate-term OJT
Janitors and Cleaners, Except Maids and Housekeeping Cleaner	16,800	19,740	290	18	✓ (3)	Short-term OJT
Home Health Aides	4,630	7,090	250	53	✓ (7)	Short-term OJT
Combined Food Preparation and Serving Workers, Including Fast Food	15,190	17,630	240	16	✓ (5)	Short-term OJT
Nursing Aides, Orderlies, and Attendants	11,050	13,180	210	19	✓ (10)	Vocational
Waiters and Waitresses	11,740	13,500	180	15	✓ (9)	Short-term OJT
Business Operations Specialists, All Other	6,300	8,110	180	29	✓ (12)	Bachelor's
Receptionists and Information Clerks	8,080	9,600	150	19	✓ (13)	Short-term OJT
Truck Drivers, Heavy and Tractor-Trailer	10,550	12,040	150	14	✓ (8)	Moderate-term OJT
Accountants and Auditors	6,840	8,360	150	22	✓ (17)	Bachelor's
Computer Software Engineers, Applications	3,210	4,680	150	46		Bachelor's
Sales Representatives, Wholesale and Manufacturing, Except Tech. & Scientific Products	10,250	11,640	140	14	✓ (14)	Moderate-term OJT
Executive Secretaries and Administrative Assistants	10,190	11,540	140	13	✓ (20)	Moderate-term OJT
General and Operations Managers	8,720	10,070	140	15	✓ (16)	Bachelor's
Office Clerks, General	15,460	16,750	130	8		Short-term OJT
Team Assemblers	13,460	14,700	120	9	✓ (19)	Moderate-term OJT
Laborers and Freight, Stock, and Material Movers, Hand	14,830	15,930	110	7		Short-term OJT

Source: Source: U.S. Bureau of Labor Statistics, Wisconsin Department of Workforce Development.

Notes: OJT=On the job training by the employer. Employment is a count of jobs rather than people, and includes all part- and full-time non-farm jobs. Employment is rounded to the nearest ten. Totals may not add due to rounding.

Further, the seven fastest growing occupations by percentage in the region also fall within in the top seven spots state-wide, albeit in a different order as depicted in column labeled "Statewide Top 20". The occupations are similar to the statewide totals because Waukesha is the third largest county in terms of population and helps drive the statewide results. Most of the occupations in Exhibit 2-7 require some type of on the job-training. In contrast, about half of the fastest growing occupations in the Milwaukee-WOW region require an Associate, Bachelor's, or Master's degree (**Exhibit 2-9**). The five occupations with the largest projected growth in new openings (between 2004 to 2014) are:

- Hydrologists (e.g. hydraulic engineer, hydrogeologist)
- Network Systems and Data Communications Analysts
- Home Health Aides
- Physician Assistants
- Medical Assistants

Relative to the state-wide growth rates, the growth for Hydrologists and Network Systems and Data Communication Analysts rank relatively high. They are the occupations with top two growth rates in the Milwaukee-WOW region, whereas state-wide they rank 20th and 12th, respectively. However, these occupations employ relatively small numbers of people, so the projected number of job openings in these areas will remain relatively small despite strong expansion within this local market.

**EXHIBIT 2-9
TOP 20 OCCUPATIONS WITH FASTEST PROJECTED GROWTH 2004-2014
MILWAUKEE-WAUKESHA-OZAUKEE-WASHINGTON REGION (MILWAUKEE-WOW)**

Top 20 Fastest Growing Occupations	Estimated Employment					Typical Education/ Degree Required
	2004	2014	New Annual Openings	% Change 2004-14	Statewide Top 20	
Hydrologists	90	140	10	56%	✓ (20)	Master's
Network Systems and Data Communications Analysts	1,210	1,870	70	55%	✓ (12)	Bachelor's
Home Health Aides	4,630	7,090	250	53%	✓ (2)	Short-term OJT
Physician Assistants	400	610	20	53%	✓ (1)	Bachelor's
Medical Assistants	1,790	2,640	90	47%	✓ (4)	Moderate OJT
Chiropractors	260	380	10	46%		Professional
Computer Software Engineers, Systems Software	1,200	1,750	60	46%	✓ (6)	Bachelor's
Computer Software Engineers, Applications	3,210	4,680	150	46%	✓ (5)	Bachelor's
Bus Drivers, Transit and Intercity	1,350	1,870	50	39%		Moderate OJT
Dental Assistants	1,500	2,070	60	38%	✓ (9)	Moderate OJT
Database Administrators	530	730	20	38%	✓ (14)	Bachelor's
Network and Computer Systems Administrators	1,910	2,630	70	38%	✓ (12)	Bachelor's
Dental Hygienists	1,310	1,800	50	37%	✓ (8)	Associate
Environmental Engineers	300	410	10	37%		Bachelor's
Employment, Recruitment, and Placement Specialists	1,260	1,710	50	36%		Bachelor's
Medical Records and Health Information Technicians	1,150	1,560	40	36%	✓ (15)	Associate
Surgical Technologists	650	880	20	35%	✓ (13)	Vocational
Respiratory Therapists	460	620	20	35%	✓ (16)	Associate
Diagnostic Medical Sonographers	320	430	10	34%	✓ (11)	Associate
Physical Therapist Assistants	350	470	10	34%	✓ (18)	Associate

Source: Source: U.S. Bureau of Labor Statistics, Wisconsin Department of Workforce Development.

Notes: OJT=On the job training by the employer. Employment is a count of jobs rather than people, and includes all part- and full-time non-farm jobs. Employment is rounded to the nearest ten, with employment less than five rounded to zero. Totals may not add due to rounding.

We estimated that roughly 27 percent of these openings will likely be located in Waukesha County since that is the approximate share of the four-county (Milwaukee, Waukesha, Ozaukee, and Washington County) workforce in Waukesha County.¹ As depicted in **Exhibit 2-10**, there are projected to be 135 new openings and 84 replacement openings per year in Waukesha County for registered nurses between 2004-2015. MGT has observed around the country, that a significant proportion of typical RN positions being filled, now prefer a BSN degree rather than a 2-year RN designation.

¹ This was estimated using the employment levels reported in the County Wages and Employment data from the Estimates Delivery System (EDS), available from the Wisconsin Department of Workforce Development.

**EXHIBIT 2-10
TOP 10 OCCUPATIONS WITH MOST PROJECTED NEW OPENINGS AND GROWTH
2004-2014 WAUKESHA COUNTY**

Occupations with Most New Openings 2004-2014	New Annual Openings	Annual Openings due to replac- ement	Retail & Food Service	Computer- related	Health Care	Typical Education/ Degree Required
Registered Nurses	135	84			✓	Associate or Bachelor's
Retail Salespersons	89	227	✓			Short-term OJT
Personal and Home Care Aides	89	35			✓	Short-term OJT
Customer Service Representatives	86	62	✓			Moderate-term OJT
Janitors and Cleaners	78	86	✓			Short-term OJT
Home Health Aides	68	16			✓	Short-term OJT
Food Preparation and Serving Workers	65	178	✓			Short-term OJT
Nursing Aides, Orderlies, and Attendants	57	41			✓	Vocational
Waiters and Waitresses	49	162	✓			Short-term OJT
Business Operations Specialists, All Other	49	30				Bachelor's
Fastest Growing Occupations						
Hydrologists	3	0		✓		Master's
Network Systems & Data Comm. Analysts	19	3		✓		Bachelor's
Home Health Aides	68	16			✓	Short-term OJT
Physician Assistants	5	3			✓	Bachelor's
Medical Assistants	24	8			✓	Moderate OJT
Chiropractors	3	3			✓	Professional
Computer Software Engineers, Sys. Software	16	3		✓		Bachelor's
Computer Software Engineers, Applications	41	8		✓		Bachelor's
Bus Drivers, Transit and Intercity	14	8				Moderate OJT
Dental Assistants	16	11			✓	Moderate OJT
Total annual projected openings	974	984	367+715	79+14	465+217	

Source: Source: U.S. Bureau of Labor Statistics, Wisconsin Department of Workforce Development.

Notes: Employment is a count of jobs rather than people, and includes all part- and full-time non-farm jobs. Employment is rounded to the nearest ten, with employment less than five rounded to zero. Totals may not add due to rounding.

Health care professions and computer related occupations were also identified as experiencing shortages of qualified applicants in the employer survey discussed in Chapter 3.0. Other occupations where survey respondents projected a shortage of qualified workers include:

- Engineering
- Skilled trades
- Education

2.4 Educational Attainment and Enrollments

In addition to occupational projections, other indicators of higher education demand in a market are educational attainment levels and the growth in the education pipeline. The attainment figures indicate that Waukesha County has a higher portion of college graduates than the State of Wisconsin and the nation, but enrollment levels are slightly lower. Although there is no public four-year college in Waukesha County, nonetheless approximately 26 percent of Waukesha residents over age 25 have obtained a bachelor's degree, compared to 17 percent of residents statewide. More impressive, 13 percent of Waukesha County residents hold a graduate or professional degree, while the statewide figure dips to 8 percent. The fact that graduate attainment is high, while

enrollments are actually lower, suggests that educated employees are migrating into Waukesha County, perhaps drawn by employment opportunities. This suggests that there is a much stronger demand for a highly educated workforce than the statewide average.

The projected patterns in the “college-going” age cohorts (noted earlier) suggest that as the local population shifts, college enrollment demand may be expected to increase and more non-traditional enrollments may also occur. Further, Waukesha is one of the few counties in Wisconsin to have experienced little to no decline in K-12 school enrollments between 2000 and 2005.²

2.5 Higher Educational Opportunities in Waukesha County and the Region

Most of the occupations that are projected to produce the greatest number of job openings will not require bachelor's degrees. Education to meet the demand for these positions appears to be in place; Waukesha County Technical College alone already offers programs in 14 of the top 20 future demand occupations listed in Exhibit 2-7. However, several of the fastest growing occupations in the region will require a postsecondary degree. Six higher education institutions have campuses located in Waukesha County. As depicted in **Exhibit 2-11**, two are public two-year colleges offering associate's degree programs and certificates, and four of them are private colleges offering bachelor's and master's degree programs. There are no public bachelor's degree options housed in Waukesha County. UW-Waukesha is located about 25 miles from the nearest bachelor's degree granting public universities at UW-Milwaukee (25 miles to the east in downtown Milwaukee) and UW-Whitewater (35 miles to the southwest). Drive time to UW-Milwaukee can be considerable at peak traffic times.

In part to address the concern, UW-Waukesha offers the “Milwaukee Connections” program, in which four baccalaureate degrees are available from UW-Milwaukee, through an onsite advisor and web classes. The areas are: Organizational Administration, Communication, and Information Resources. UW-Waukesha also partners with the MBA program at UW-Milwaukee and UW-Whitewater to offer an accelerated degree program taught on the UW-Waukesha campus. This suggests a definite interest in graduate programs offered through a public institution.

² Wisconsin's Public School Enrollment: Past, Present, and Future. Applied Population Lab UW-Madison/Extension. Accessed at:
<http://www.ssc.wisc.edu/poplab/Wisconsin's%20Public%20Schools%20Past%20Present%20Future.pdf>

**EXHIBIT 2-11
HIGHER EDUCATION INSTITUTION IN WAUKESHA AND SURROUNDING AREAS**

Institution	Type	City	Associates or		
			Cert.^	Bachelor's	Graduate
Waukesha County					
Waukesha County Technical College	Public	Pewaukee	✓		
University of Wisconsin- Waukesha	Public	Waukesha	✓		
Cardinal Stritch University	Private	Brookfield, Milwaukee	✓	✓	✓
Carroll College	Private	Waukesha		✓	✓
DeVry University-Wisconsin	Private	Waukesha		✓	✓
Ottawa University-Milwaukee	Private	Brookfield		✓	✓
University of Phoenix	Private	Brookfield		✓	✓
Other Institutions in the Region					
Alverno College	Private	Milwaukee	✓	✓	✓
Marquette University	Private	Milwaukee		✓	✓
Medical College of Wisconsin	Private	Milwaukee			✓
Milwaukee Area Technical College	Public	Milwaukee	✓		
Milwaukee Institute of Art Design	Private	Milwaukee		✓	
Milwaukee School of Engineering	Private	Milwaukee	✓	✓	✓
Mount Mary College	Private	Milwaukee		✓	✓
Bryant and Stratton College-Milwaukee	Private	Milwaukee	✓	✓	
Wisconsin School of Prof. Psychology	Private	Milwaukee			✓
Wisconsin Lutheran College	Private	Milwaukee		✓	
University of Wisconsin-Milwaukee	Public	Milwaukee		✓	✓
St Luke's Medical Sonography	Private	Milwaukee	✓		
Aurora St. Luke Medical Radiologic Tech.	Private	Milwaukee	✓		
University of Wisconsin-Whitewater	Public	Whitewater	✓	✓	✓

Source: U.S. Department of Education, Integrated Postsecondary Education Data System.

Notes: ^Program offering denoted for institutions awarding associate or certificate degrees in 2006.

Exhibit 2-11 lists higher education institutions located in Milwaukee or nearby. Potential students and many in the community perceive access to public universities as a benefit because public universities tend to offer lower cost of attendance (tuition and fees) than private institutions. A recent survey of students in Waukesha County's two-year colleges found that students are interested in pursuing bachelor's degrees and seeking affordable education options:

“Forty percent of respondents reported that having more options in Waukesha County would make them much more likely to continue their education, but up to 75 percent of respondents rated affordability and time to degree factors as having the maximum effect on their likelihood of continuing their education.”³

The full survey report can be found in Appendix A. Several business and community leaders expressed the need for more local higher education opportunities; a few were particularly concerned at the relative lack of affordable options for current residents and workers in the county. The interview findings are summarized in Chapter 3.0.

³ WCTC Office of Institutional Research (2008): Higher Education Needs in Waukesha County: Student Survey.

Another factor to consider is whether local higher education programs coincide with the growth occupations identified earlier in the chapter. **Exhibit 2-15** illustrates the number of bachelor's degrees awarded in 2006 across various disciplines by local or regional higher education institutions reporting information to the Department of Education. Three trends emerge relative to the occupational shortage areas identified earlier:

- There appears to be a gap between recent graduates and expressed need in computer science programs. In 2006, the regional providers awarded a total of 192 bachelor's degrees in computer and information sciences and support services. This falls below the 340 projected annual openings (replacement and new). Of course all regions import and export talent, but local employers have expressed experiencing a shortage in IT and technology workers. This may reflect a change in hiring practices, as employers seem to be specifically looking for IT professionals with bachelor's degrees. IT education programs at the associate degree level exist, but graduates report more difficulty finding employment in the field than was the case ten years ago.
- The survey results also suggest that the 572 bachelor's graduates in engineering may not be meeting local employer's needs. The employer survey results indicate that engineering is one of the most cited occupations where a shortage of qualified applicants remains.
- In 2006, the higher education institutions serving the region awarded 552 bachelor's degrees and 221 associate degrees in nursing. This number exceeded the annual projected openings in the area. However, two additional points of data should be considered here: first, the fact that nationally there exists significant competition for nurses, due to a general shortage; and second, and more importantly, surveyed employers in the County have expressed concerns about finding sufficient employees in this occupational area. These suggest that there may still be positions routinely left unfilled.

**EXHIBIT 2-15
BACHELOR'S DEGREES AWARDED IN 2006 BY HIGHER EDUCATION INSTITUTIONS
SERVING WAUKESHA COUNTY AND MILWAUKEE**

Program Area	Total	UW-Milwaukee	Marquette Univ.	UW-Whitewater*	Cardinal Stritch Univ.	Carroll Coll.	Milwaukee Sch. of Eng.	Alverno Coll.	Mount Mary Coll.	Ottawa Univ. (Milwaukee)	Wisconsin Lutheran Coll.	Milwaukee Inst. of Art Design	Bryant and Stratton Coll. (Milw.)	DeVry Univ. (Milwaukee)
Total Bachelor's Degrees Awarded	9,757	3,468	2,066	1,797	607	503	401	277	192	169	143	118	11	5
Business, Management, Marketing, and Related Support Services	2,625	764	427	578	485	83	68	54	22	118	10	0	11	5
Communication, Journalism, and Related Programs	915	303	303	189	7	34	6	24	6	11	32	0	0	0
Education	819	299	88	283	22	56	0	29	10	7	25	0	0	0
Health Professions and Related Clinical Sciences	799	299	205	24	21	66	19	85	70	10	0	0	0	0
Social Sciences	707	255	215	182	16	21	0	8	2	0	8	0	0	0
Visual and Performing Arts	586	272	25	84	11	36	0	0	27	0	23	108	0	0
Engineering	572	137	162	0	0	0	273	0	0	0	0	0	0	0
Psychology	450	165	96	77	10	55	0	17	7	8	15	0	0	0
Biological and Biomedical Sciences	325	77	155	39	5	32	0	7	4	0	6	0	0	0
English Language and Literature/Letters	299	120	88	54	8	14	0	7	6	0	2	0	0	0
History	233	91	75	35	4	15	0	4	4	0	5	0	0	0
Public Administration and Social Service Professions	220	75	27	88	0	0	0	11	11	8	0	0	0	0
Foreign languages, literatures, and Linguistics	199	74	74	33	2	8	0	0	7	0	1	0	0	0
Computer and Information Sciences and Support Services	192	93	26	34	6	22	0	3	1	7	0	0	0	0
Security and Protective Services	160	137	0	0	0	19	0	0	4	0	0	0	0	0
Multi/Interdisciplinary Studies	135	82	38	10	0	2	0	0	3	0	0	0	0	0
Architecture and Related Services	81	71	0	0	0	0	0	0	0	0	0	10	0	0
Philosophy and Religious Studies	74	31	27	0	9	0	0	2	3	0	2	0	0	0
Physical Sciences	74	27	10	15	1	15	0	2	0	0	4	0	0	0
Mathematics and Statistics	68	15	9	22	0	9	0	8	0	0	5	0	0	0
Engineering Technologies/Technicians	65	0	3	27	0	0	35	0	0	0	0	0	0	0
Parks, Recreation, Leisure, and Fitness Studies	63	53	0	0	0	10	0	0	0	0	0	0	0	0
Liberal Arts and Sciences, General Studies and Humanities	29	0	0	20	0	0	0	5	4	0	0	0	0	0
Natural Resources and Conservation	22	16	0	0	0	6	0	0	0	0	0	0	0	0
Theology and Religious Vocations	19	0	13	0	0	0	0	0	1	0	5	0	0	0
Area, Ethnic, Cultural, and Gender Studies	15	12	0	3	0	0	0	0	0	0	0	0	0	0
Communications Technologies/Technicians and Support Services	11	0	0	0	0	0	0	11	0	0	0	0	0	0

Source: U.S. Department of Education, Integrated Postsecondary Education Data System.

Notes: *not located in Waukesha county or Milwaukee, but was identified in employer survey as partner institutions.

2.6 Conclusions

Our examination of population, occupational, and educational attainment trends in Waukesha County suggest that there are several demand-side factors pointing to the need for access to additional educational opportunities.

- Waukesha County is projected to have a relatively strong growth in the “college-going” age cohort (age 20-29). The county had the 5th fastest growth rate for the age 20-24 cohort, at 6.8 percent and had the 10th fastest rate (32.2%) for the age 25-29 cohort. Moreover, since it was one of the largest of the counties in terms of population, the growth rates translate into approximately 40,000 residents in the target cohort by 2020.
- Waukesha is one of the few counties in Wisconsin to have experienced little to no decline in K-12 school enrollments between 2000 and 2005. While many districts across the state experienced a greater than 4 percent decline in enrollments, Waukesha contained only one district with a 4 percent decline.⁴
- With the exception of nursing, most of the occupations with the most new openings require some form of on the job training. It appears that the education needs of these occupations will be accommodated by existing educational institutions.
- In contrast, about half of the fastest growing occupations in the Milwaukee-WOW region require an associate, bachelor’s, or master’s degree. This particular finding indicates a trend emphasizing overall postsecondary credentialing for a significant segment of the local workforce, a continued effort to attract more educated local residents and employees, and expansion of “value-added” jobs within the local market.
- The 10 occupations with the largest projected growth rate in new openings (between 2004-2014) are:
 - Hydrologists
 - Network Systems & Data Comm. Analysts
 - Home Health Aides
 - Physician Assistants
 - Medical Assistants
 - Chiropractors
 - Computer Software Engineers, Sys. Software
 - Computer Software Engineers, Applications
 - Bus Drivers, Transit and Intercity
 - Dental Assistants

⁴ Wisconsin’s Public School Enrollment: Past, Present, and Future. Applied Population Lab UW-Madison/ Extension. Accessed at: <http://www.ssc.wisc.edu/poplab/Wisconsin's%20Public%20Schools%20Past%20Present%20Future.pdf>

- Our examination of the supply of bachelor's degree graduates from local institutions, occupations with projected shortages, and the employer survey reveals potential shortages in the areas of computer science and engineering.
- Finally, though not directly addressed in the market data, but a conclusion borne out in other situations across the country, "education begets more education." As the local populace increases its educational attainment level (particularly baccalaureate and graduate/professional degree completion), there often follows an enhanced pursuit of continuing education driven not only by employer needs, but of personal interest on the part of residents young and old, employed or retired.

3.0 EMPLOYER, STAKEHOLDER, AND STUDENT INPUT

3.1 Introduction

In order to fully assess the demand for higher education in Waukesha County among employers and the community, MGT interviewed and surveyed a variety of people in the area. Specifically, we gathered input in the following ways:

- Interviewing community and education leaders
- Interviewing local employers
- Conducting a survey-by-mail of employers

The interviews are intended to help characterize business and community leaders' opinions about the availability of higher education opportunities in the county, while the survey results provide a more quantitative description of employer's perceived needs. Taken together the results allow for possible cross-validation of trends that emerge. The next section summarizes the interview results, and the remainder of the chapter presents results from the survey.

3.2 Employer Interview Results

MGT conducted individual, confidential telephone interviews with a variety of business and community leaders in the County. MGT invited twenty-five community leaders and business representatives from major industries the thirteen respondents came from industries including health care, banking, insurance, real estate, hospitality, information technology, and professional services. Those interviewed for the study all have first hand experience with recruiting and training employees in Waukesha counties. The interviews were conducted in August 2007.

3.2.1 Economic and Workforce Outlook

Respondents were in general agreement that the business outlook for Waukesha County is good. Sectors with reported new business growth included: health care, finance, retail trade, technology, and knowledge-based industries. However, three respondents did note that businesses were a little more cautious about the economy at this time, but that area businesses remain robust overall.

Occupations where employers anticipate the greatest demand for employees include mostly technical occupations that tend to require at least a bachelor's degree. The occupation areas most commonly cited were:

- Engineering (various disciplines)
- Computer science and information technology
- Health care

These three areas were validated by findings from the employer survey that is discussed later in this chapter. Other occupations mentioned by respondents included managers,

accountants, business, skilled trades (such as plumber and electrician), customer service, and entrepreneurs.

Employers also expressed a general concern about skilled and professional worker shortages across occupations because of retirements among the baby-boom generation that they have experienced or anticipate in the near future. These expected retirements tend to intensify employer concern about finding enough qualified workers. Specific areas where employers expect a shortage of workers over the next few years included:

- Engineering
- Accounting & Finance
- Information technology
- Health care professionals
- Skilled trades

These areas were also identified through the employer survey as areas with anticipated shortages of qualified applicants over the next five years.

3.2.2 Employers' Education and Training Need and Practices

Employers' current need for training parallels their anticipated shortages. Employers identified their current training needs as spanning several industries, but concentrated in occupations that require post-secondary training or education. Employers identified the following areas of training need:

- Health care organizations consistently need technically trained workers, such as nurses and medical imaging technicians.
- Information technology workers (existing and new hires) need constant upgrade training since technologies change so fast.
- Other technical areas of need were business/accounting/finance and engineering.

Participating employers currently meet their education and training needs through in house training or partnerships with higher education institutions. While the most commonly used institutions are located in Waukesha County, a few respondents noted that they used institutions from other parts of the state, in part because the largest colleges and universities (which can offer a more expansive breadth of expertise) are located outside of the county. The institutions most commonly used by respondents (in order of how frequently they were mentioned) include:

- Waukesha County Technical College
- University of Wisconsin (various campuses)
 - Waukesha
 - Milwaukee
 - Madison
 - Whitewater
- University of Phoenix
- Carroll College

- University of Ottawa
- Milwaukee Area Technical College

Some employers indicated that current institutions were doing a good job meeting their needs, others said that they were doing at best an adequate job. The most commonly cited obstacles to meeting their company education needs were:

- Availability of public four-year degree programs located in the county.
- The cost of training and education opportunities for their employees, which some respondents specifically attributed to the lack of a four-year public institution in the area.

Some respondents also mentioned that traveling out of the county is a burden for working professionals seeking continuing education or graduate degrees due to driving distance, personal & work time constraints, or lack of flexible program delivery options creating conflicts and barriers for commuting students.

3.2.3 Employers' Perspectives on Higher Education in Waukesha County

When asked to identify what the most critical post-secondary issues for Waukesha County were, the most common response was the need for more bachelor's degree options. When asked to specifically identify training and education programs they would like to see available locally to their employees (as well as all Waukesha County residents), employers most commonly mentioned:

- Bachelor's programs in general that could affordably be completed locally
- Engineering, (bachelor's and masters level)
- Business & Finance, (bachelor's and masters level)

Additionally, a couple respondents have observed an urgent need for high school preparation in math and science needed for engineering and other technical career exploration.

When asked what institutions employers would like to see with a greater presence in the county, the most common response was the University of Wisconsin system. Employers value the opportunity to have affordable four year-bachelor's program accessible in their local area. More accessible baccalaureate and graduate degree programs are believed to strengthen the qualifications and performance of their current workforce, as well as enhance their ability to attract and retain qualified workers locally.

Many businesses expressed their interest in establishing or expanding partnerships with higher education institutions in the county to address their training needs. Additionally, two employers expressed a willingness to offer internship opportunities to higher education institutions in the county.

Additionally, some employers mentioned that the location of a public 4-year / graduate research institution in the community would provide research and economic growth

synergies between the institution, the faculty and the business community. This latter collaboration is looked on quite favorably from an economic development perspective.

3.3 Student Survey Results

Employer and industry needs are key drivers of higher education access and expansion in any locality, but they are not the sole community segment of need. Those individuals who do choose to partake of local education and training options also have considerable influence when determining opportunities for growth and expansion of degree programs.

To gauge local student interest in pursuing higher education opportunities Waukesha County Technical College (WCTC) hosted a survey of students from area colleges, focusing on current students of Waukesha's two-year colleges: WCTC and University of Wisconsin-Waukesha. Current employees at WCTC and UWW were also invited to participate because they too may have an interest in obtaining additional degrees or participating in continuing education.

The majority of the 462 respondents were currently students at WCTC (44%) or UWW (37%). The remaining were either students enrolled at other area schools (3%) or not currently enrolled in higher education (16%).

The results of the survey point to four main findings:

- Students are interested in pursuing a bachelor's or master's degrees. Approximately 58% of respondents indicated that they would very likely obtain a bachelor's degree. As expected, a higher percentage of UWW students than WCTC students indicated very likely (80% vs. 44%) because UWW is a two-year campus where most students transfer to a bachelor's program in the UW system.
- Students rank affordability as one of the most important factors weighing into their decision to pursue a bachelor's or masters degree. Three-fourths of respondents reported that affordability would be very helpful to their pursuit of a bachelor's or master's degree. The incidence was slightly higher (85%) among those who indicated obtaining a bachelor's degree was a high priority.
- Students rank "getting credit for work and life experience" and "receiving instruction close to home/work" as the second and third most important factors that would increase their likelihood of pursuing a bachelor's or master's degree. Over 60% of respondents said these factors would be very helpful in their decision to pursue a bachelor's or master's degree.
- Finally, as noted in the student survey report provided by WCTC, affordability and the ability to complete the degree quickly tend to be the most important considerations for students: "Forty percent of respondents reported that having more options in Waukesha County would make them much more likely to continue their education

(complete their desired degree), but up to 75% of respondents rated affordability and time to degree factors as having the maximum effect on their likelihood of continuing their education.”

A more detailed description of the survey results can be found in **Appendix A**.

3.4 Employer Survey Results

Hard copy surveys were mailed to 525 Waukesha County employers in October 2007. Follow-up phone calls were made to employers to encourage participation in November, resulting in a total of 87 respondents. Their responses constitute the data for most of the Exhibits in this chapter. After the survey end date an additional 13 responses were obtained, bringing the total to 100, a response rate of 19%. The qualitative analysis and identification of demand occupations (Exhibit 3-12) are based on all 100 respondents.

Surveys were returned from a wide range of employers. Those employers represented the industrial categories displayed in **Exhibit 3-1**. Seventeen of the twenty largest employers in Waukesha County were among those that took part in the survey; those employers alone represent 33,500 employees.

**EXHIBIT 3-1
INDUSTRIAL CATEGORIES OF RESPONDENT ORGANIZATIONS**

Manufacturing	17
Finance, Insurance, and Real Estate	14
Other	15
Government/Nonprofit	12
Educational Services	11
Health Care Services	8
Construction	4
Engineering	4
Communications and Public Utilities	3
Tourism	3
Distribution	3
Printing*	3
Wholesale/Retail Trade	3
Total Respondents (n =)	100

*Includes firm that considers itself a blended printing/manufacturing firm.

The responding organizations employed between 1 and 5,000 employees, with an average of 377 employees. Approximately 17% of the initial 87 respondents were from organizations with fewer than 25 employees, while 41% employed 100 or fewer (**Exhibit 3-2**).

**EXHIBIT 3-2
NUMBER OF EMPLOYEES WITHIN RESPONDENT ORGANIZATIONS**

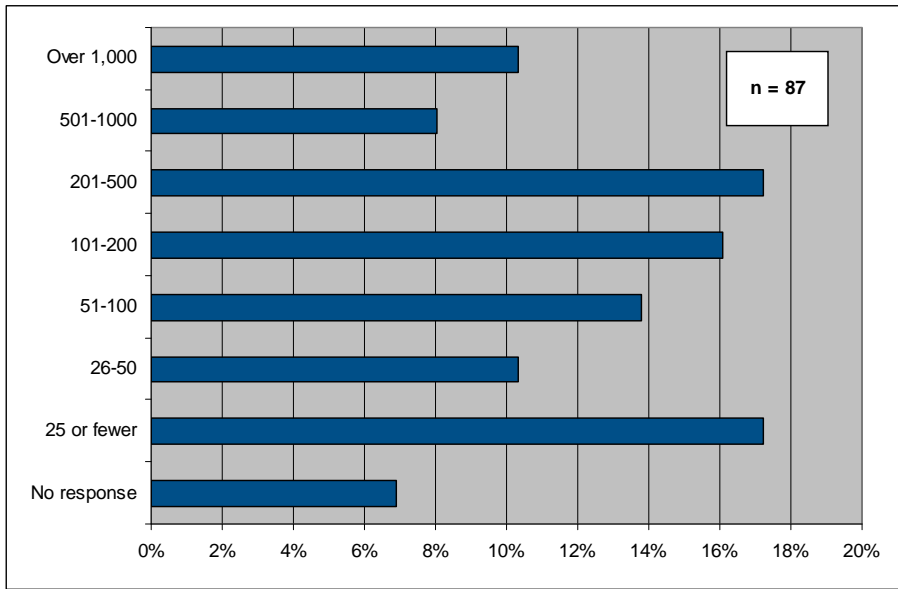
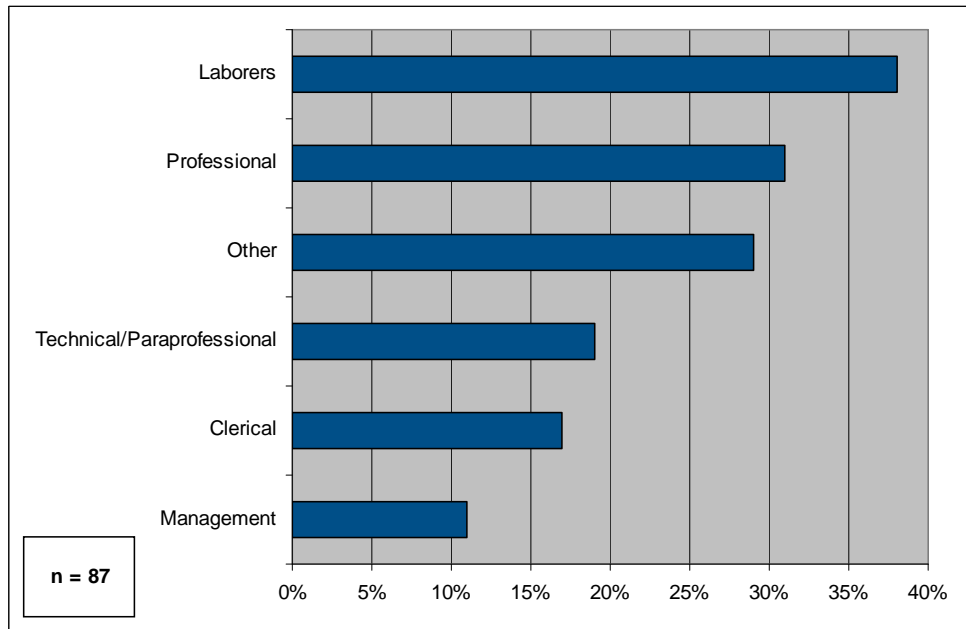


Exhibit 3-3 displays the average percentage of workers in each of six classifications among respondents. Laborers represented the largest share of jobs within the respondents' organizations (38%). Management positions represented the smallest average share of positions (11%)

**EXHIBIT 3-3
AVERAGE PERCENTAGE OF POSITIONS WITHIN EACH CLASSIFICATION**



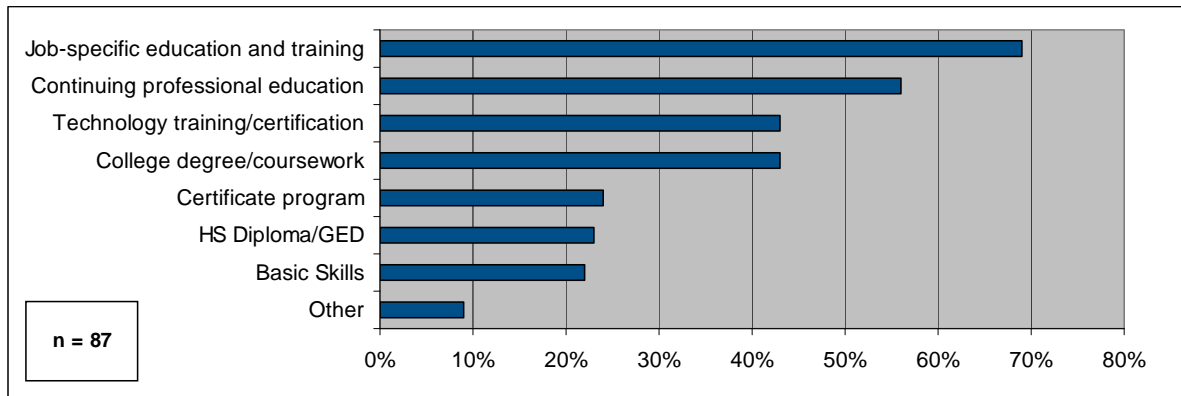
In addition to demographic information discussed above, respondents were asked questions on the survey concerning:

- Current employee training
- Experience with training/education providers
- Education and Training Needs

3.5 Current Employee Training

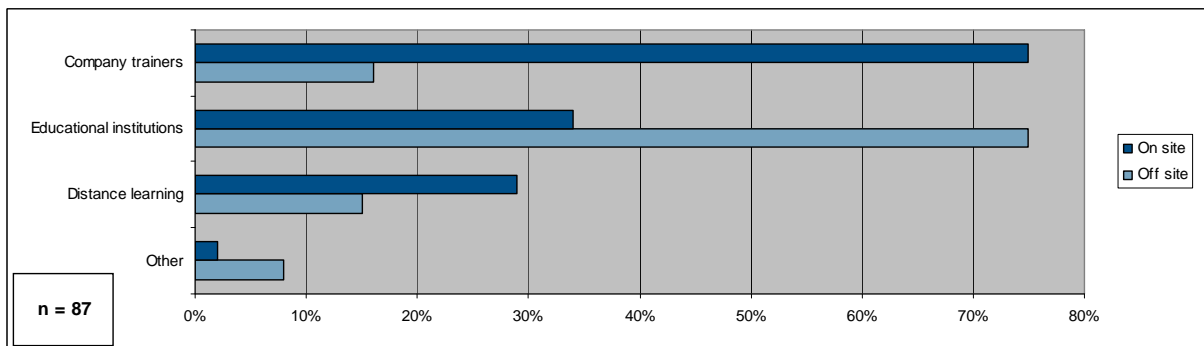
The majority of respondents (69%) indicated that job specific education and training was most needed by their employees (**Exhibit 3-4**). Continuing professional education was cited by 56% as a current employee need. College degree/coursework and technical training/ certification were each identified as needs by 43% of the employer respondents.

**EXHIBIT 3-4
EDUCATIONAL OR TRAINING ACTIVITIES NEEDED BY EMPLOYEES**



As shown in **Exhibit 3-5**, many employers utilize company trainers to provide training/education on-site (75%). However, off-site educational programs offered by educational institutions or training organizations also just as commonly utilized (75%).

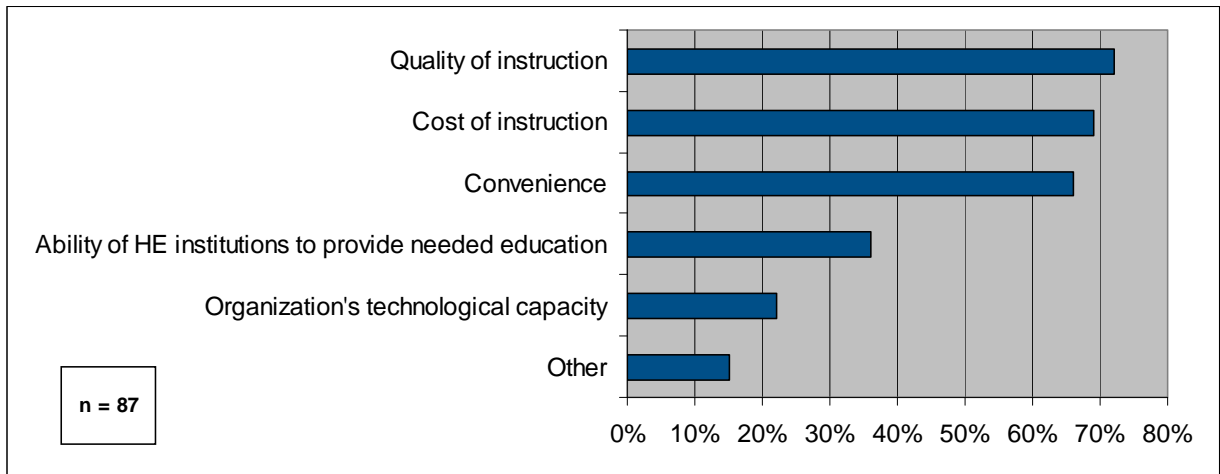
**EXHIBIT 3-5
METHODS OF PROVIDING FOR CURRENT TRAINING NEEDS**



According to **Exhibit 3-6**, among the factors that weigh into the decisions about how to provide training and education to staff, the most commonly cited by employers were:

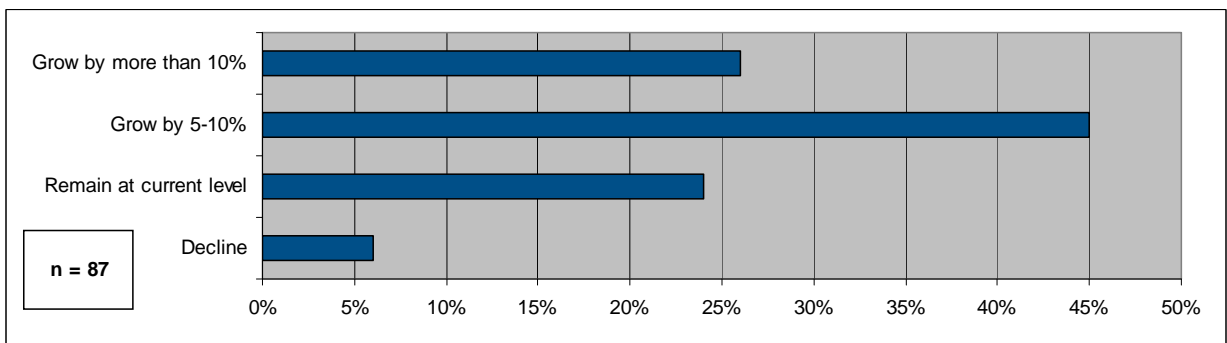
- Quality of instruction (72%)
- Cost of instruction (69%)
- Convenience (66%)

**EXHIBIT 3-6
FACTORS THAT WEIGH INTO DECISION ABOUT HOW TO PROVIDE EDUCATION
AND TRAINING TO EMPLOYEES**



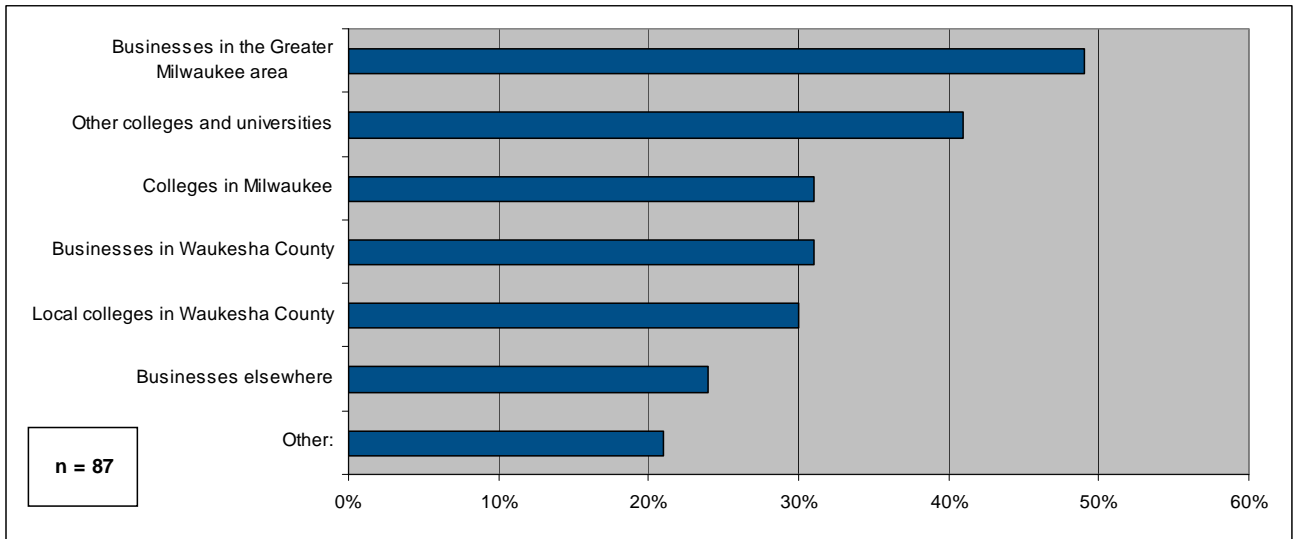
The availability of education also affects corporate recruitment. **Exhibit 3-7** shows employers' anticipated growth in staff needs. Approximately 45% of respondents anticipate their staff to grow between five percent and ten percent over the next five years. Only six percent of employers expect a decline in their staff numbers.

**EXHIBIT 3-7
ESTIMATED STAFFING GROWTH OVER THE NEXT FIVE YEARS**



As shown in **Exhibit 3-8**, respondents indicated a broad range of recruitment areas. Almost half recruit from businesses in the Milwaukee area (49%). While 31% recruit from local colleges, a larger portion recruit from colleges elsewhere (41%).

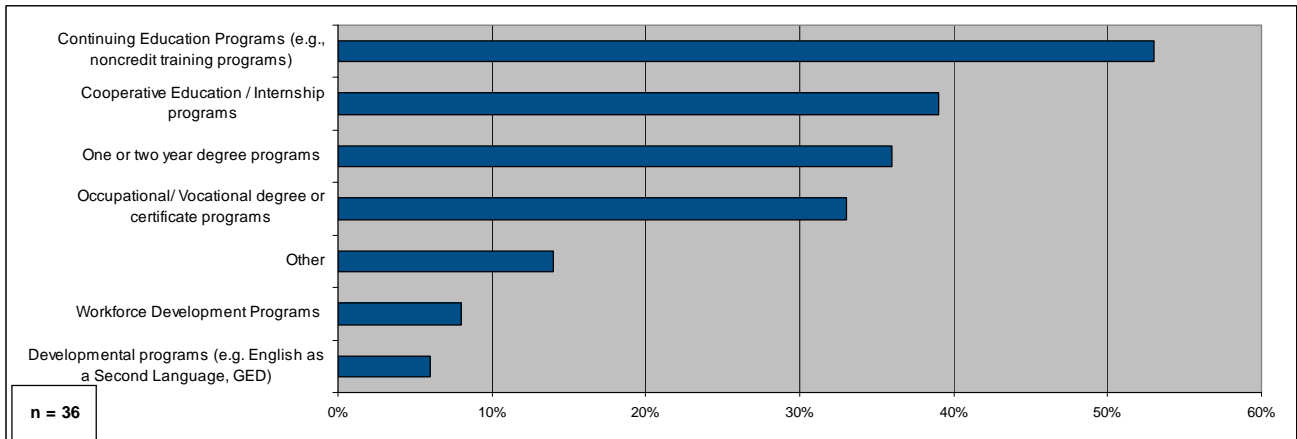
**EXHIBIT 3-8
SOURCES FOR RECRUITMENT OF NEW EMPLOYEES**



3.6 Experience with Training/Education Providers

Over half of respondents (57%) indicated that they are not currently engaged in any educational initiatives or partnerships with colleges or universities. Of the 36 who do maintain educational partnerships, over half (56%) participate in four year degree programs. Continuing Education programs (53%) and Cooperative Education/Internship programs (39%) were also common responses, as shown in **Exhibit 3-9**.

**EXHIBIT 3-9
EDUCATIONAL PARTNERSHIPS/INITIATIVES ENGAGED IN BY COMPANIES**



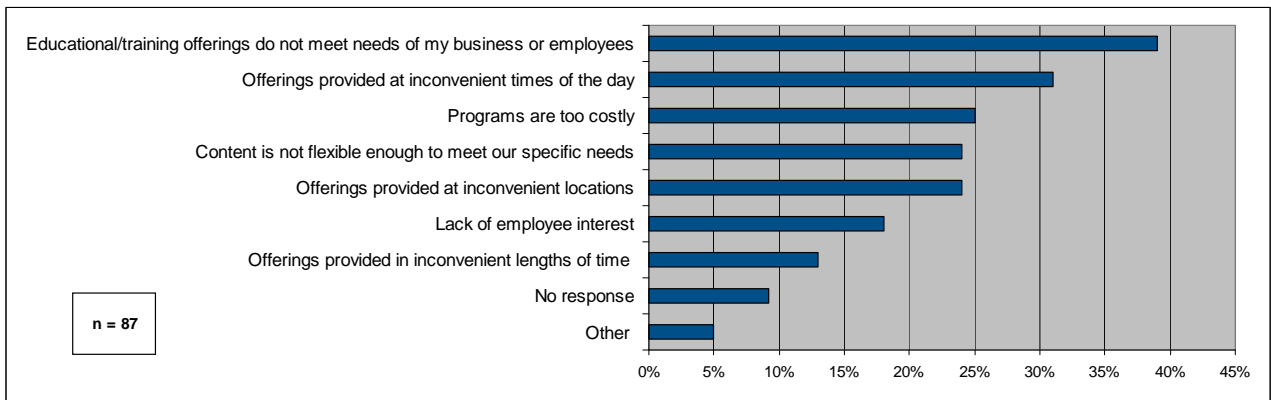
Thirty-six employers identified the college or colleges with which they have engaged in training or education initiatives. Of these, by far the most common response was Waukesha County Technical College, as shown in **Exhibit 3-10**.

**EXHIBIT 3-10
INSTITUTIONS WITH WHOM EDUCATIONAL PARTNERSHIPS/INITIATIVES
ARE ENGAGED IN BY COMPANIES**

Waukesha County Technical College	17
Cardinal Stritch University	7
Milwaukee School of Engineering	7
UW Milwaukee	7
Carroll College	6
UW Whitewater	6
Alverno College	5
Marquette University	4

Exhibit 3-11 shows the most frequently cited barriers to participation in educational initiatives with colleges.

**EXHIBIT 3-11
BARRIERS TO PARTICIPATION IN EDUCATIONAL PARTNERSHIPS/INITIATIVES**



3.7 Education and Training Needs

A wide range of responses was elicited by asking about occupations for which a shortage of applicants is anticipated. When placed in broad categories, however, some trends did emerge. The largest category of responses referred to occupations in the healthcare field, followed by skilled trades (carpentry, roofing, mechanics etc.). **Exhibit 3-12** displays the raw number of position titles within each category that were mentioned by employer respondents.

**EXHIBIT 3-12
OCCUPATIONAL CATEGORIES FOR WHICH EMPLOYERS ANTICIPATE A
SHORTAGE OF QUALIFIED APPLICANTS OVER THE NEXT FIVE YEARS**

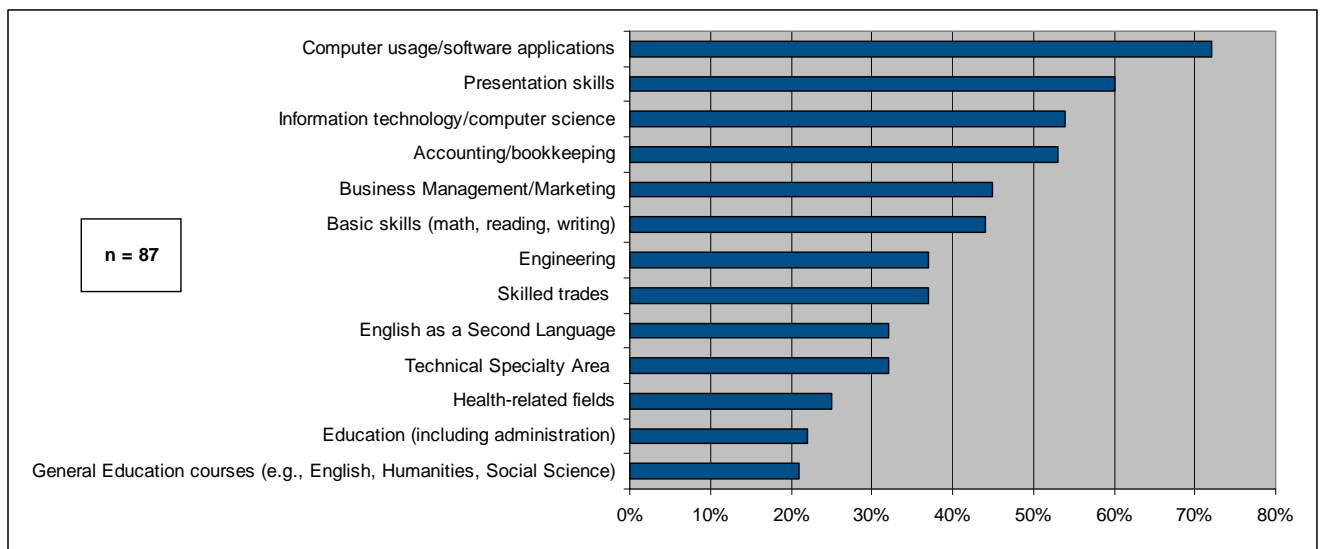
Other	34
Healthcare	28
Engineering	26
Skilled trades	22
Sales/Customer Service	21
Education	19
Financial	16
Computer	14
Management	12
Labor	11
Accounting	10
Clerical	5
Marketing	3
Police	3

Frequently mentioned positions within the most commonly mentioned categories were:

- Healthcare – nurse, pharmacist, physical therapist
- Engineering – civil, mechanical, electrical, and general
- Education – technical, science, math foreign language teachers
- Financial – underwriter, claims adjuster, lending professional, analyst, risk inspector
- Computer – IT professionals/computer

Employers were also asked to indicate the fields in which their employees would need education/training over the next five years and the level of education required for each. Those responses are shown in **Exhibit 3-13**.

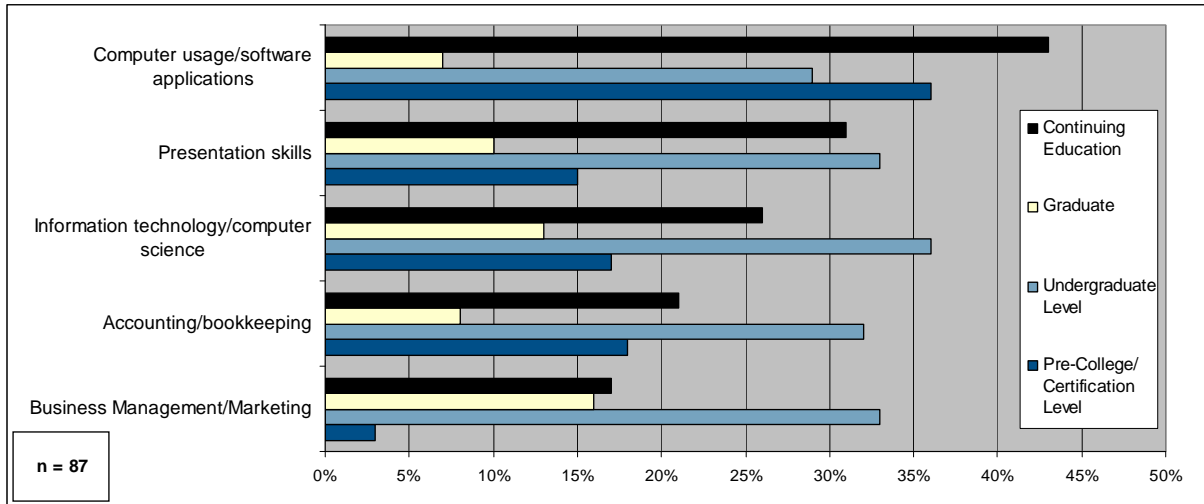
**EXHIBIT 3-13
FIELDS IN WHICH EMPLOYEES WILL NEED TRAINING IN THE NEXT FIVE YEARS**



As shown in **Exhibit 3-14**, among the five most popular fields for which training needs are anticipated over the next five years, education at the undergraduate level was cited as the most common level of training needed by four of the fields. Approximately 36% of

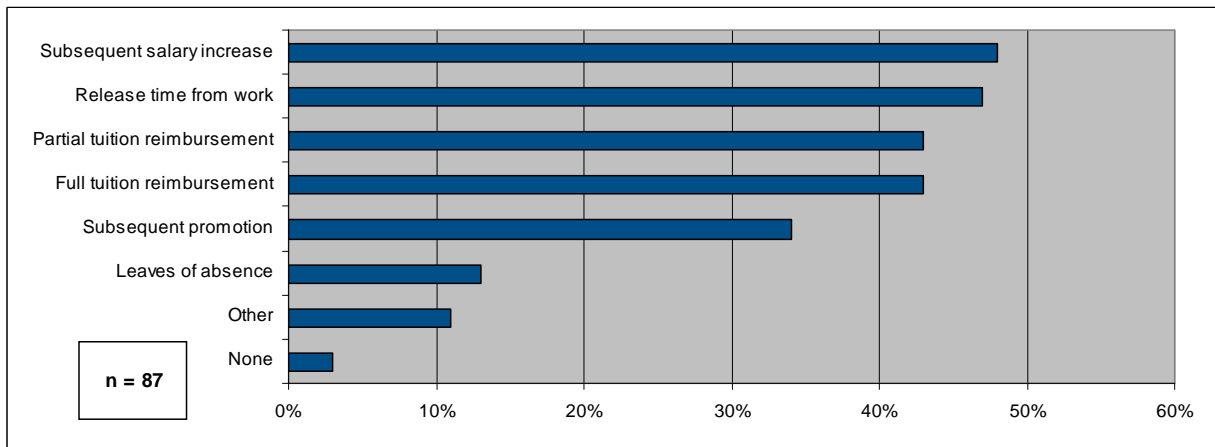
employers anticipate a need for undergraduate education for their employees in information technology/computer science, 33% in presentation skills and business management/marketing and 32% in accounting/bookkeeping. Graduate level training was the least frequently cited level of education needed for all fields with the exception of Business Management/Marketing, for which it surpassed only pre-college/certification level education.

**EXHIBIT 3-14
LEVEL OF EDUCATION/TRAINING REQUIRED IN THE MOST POPULAR FIELDS**



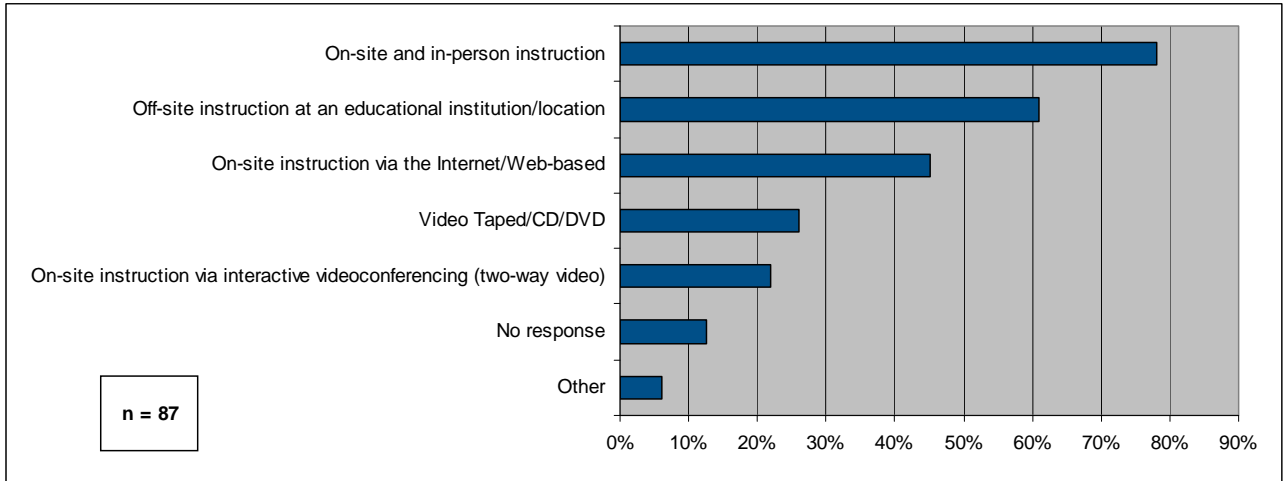
As shown in **Exhibit 3-15**, the most popularly cited incentive offered to employees to encourage participation in education and training was subsequent salary increase (48%), followed by release time from work (47%).

**EXHIBIT 3-15
INCENTIVES PROVIDED FOR PARTICIPATION IN TRAINING AND EDUCATION**



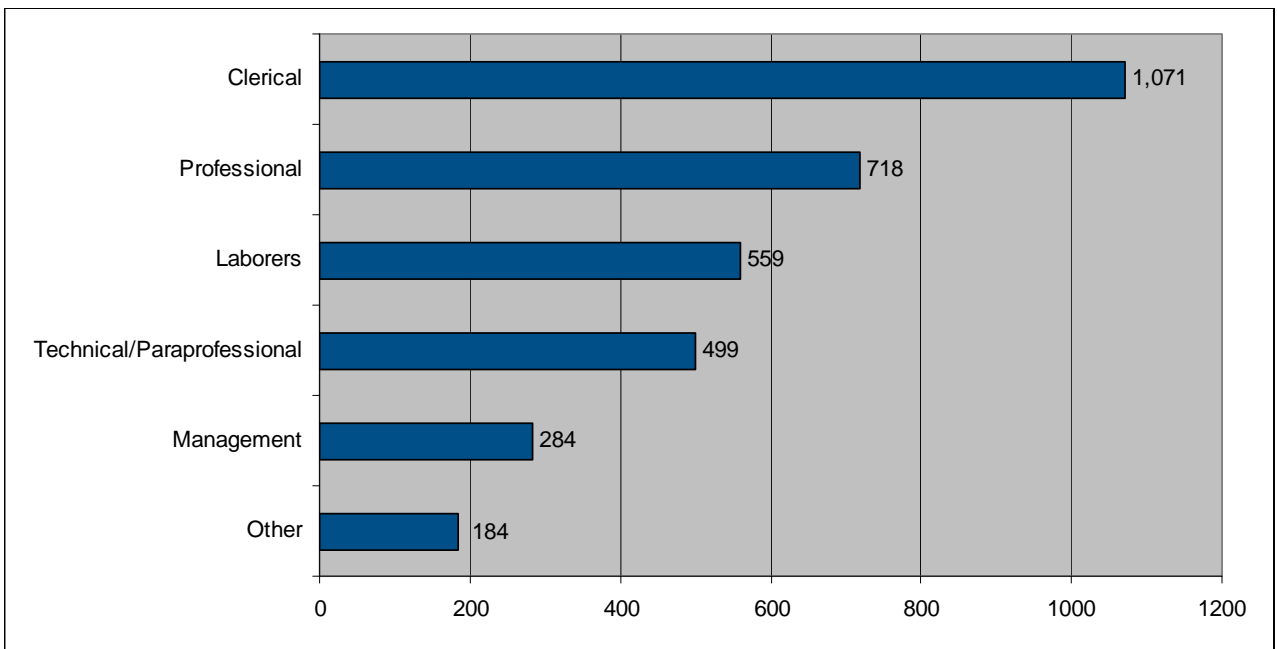
The overwhelming majority of employers (78%) believe that on-site and in-person instruction is most appropriate for their employees, as shown in **Exhibit 3-16**.

**EXHIBIT 3-16
MOST APPROPRIATE TRAINING AND EDUCATION DELIVERY MODEL**



Employers were asked to estimate the number of individuals in each job category that they anticipated hiring in the next five years. From this it was possible to calculate the total number anticipated hires in each category for these employers (**Exhibit 3-17**). The greatest area of need appears to be for clerical employees (almost 1,100), followed by professional staff (over 700). Growth in management staff in the local area is anticipated to be relatively low (under 300).

**EXHIBIT 3-17
TOTAL ANNUAL NUMBER OF NEW EMPLOYEES NEEDED OVER THE
NEXT FIVE YEARS IN EACH OCCUPATIONAL CATEGORY**



3.8 Specific Education and Training Needs

Business, Finance, and Health Care

Among the larger businesses in the county, the occupations most commonly expected to have a shortage of qualified candidates are:

- Managers
- Analysts
- Accountants
- Nurses
- Pharmacists

Many employers in the insurance and banking sector anticipate a shortage of qualified candidates, over the next five years in the areas of:

- Underwriters
- Claims adjusters/representatives
- Loan officers/Lending professionals
- Personal bankers

The majority of these occupations require graduates with bachelor's degrees in areas related to business or finance. More broadly degrees that emphasize analytical skills (business, engineering, statistics, and actuarial science) are particularly valued by employers because they are applicable to wide range of business problems.

Engineering Needs

Many employers and stakeholders interviewed for the study expect to see a great demand for employees with engineering degrees in Waukesha County. To better characterize the type of demand expected, we reviewed the survey results of engineering firms. Specifically, the occupations where engineering firms expect a shortage of qualified applicants over the next five years are:

- Civil engineers (transportation, environmental, and water)
- Mechanical Engineers
- Sales engineers
- Engineers
- Financial analysts
- Technicians (for example, GIS/CAD technicians and surveyors)
- Customer service

Similarly, engineering firms also anticipate the most training of future employees to be in several areas, concentrated in technical areas:

- Engineering (baccalaureate and continuing education)
- Accounting (baccalaureate)
- Technical/GIS/CAD (continuing education)
- Presentation skills (continuing education)

- Business management/marketing (continuing education)

At the same time that engineering firms are anticipating a need for more candidates with engineering degrees, they also recognize that the current educational offerings do not meet their needs. One employer expressed specific concern that local schools were lacking degree programs in civil engineering in particular. Other barriers noted were:

- Inconvenient times/days of offerings
- Inconvenient locations
- Inflexible content and offerings are provided for
- Inconvenient lengths of time

4.0 CONCLUSIONS FROM THE NEEDS ASSESSMENT FOR WAUKESHA COUNTY

4.1 Introduction

The Waukesha County Action Network (WCAN), on behalf of the Waukesha County Higher Education Coalition (WCHEC) contracted with an outside consultant, MGT of America, Inc., to conduct an educational needs assessment of Waukesha County. The needs assessment uses a multi-pronged approach to gather indicators about higher education program needs and to document barriers, obstacles, and options for program access and delivery among market segments.

After synthesizing the opinions, perceptions, survey results, and the demographic trends reviewed as part of this study, five general findings emerge about higher education needs in Waukesha County:

- Employers seek more continuing education for existing employees and more bachelor's degree opportunities in the county.
- The occupation areas with the greatest future overall demand do not require a bachelor's degree and education for these areas already exists.
- High growth occupations in the county tend to require a bachelor's degree, raising employer concerns about the availability of qualified candidates. The occupation areas with the most anticipated need for qualified candidates are health care, computer and information technology, engineering, business, and education.
- There is interest among local employers in partnering with higher education institutions to address their business training needs, and particular interest in bringing more bachelor's degree programs hosted by public universities because their generally lower tuition rates are perceived to increase access.
- More than half of students currently enrolled in county two-year colleges considered it very likely that they would eventually completed a bachelor's degree. Affordability and proximity of the program to home or work are critical factors in their decision to pursue the degree.

Together these findings indicate that there is a need and interest in additional bachelor's degree programs. Extrapolating from these findings, in this chapter we estimate the level of potential annual demand for higher education programs in Waukesha County. These estimates are not intended to represent specific enrollment projections for a given program at a particular institution or location, but only as macro indicators of enrollment potential.

4.2 Anticipated Need

Both the employer survey and community and employer interviews indicate that there is a need for more candidates with bachelor's degrees. Simultaneously, the student survey indicates that a majority of students attending two-year colleges in Waukesha are interested in eventually pursuing a bachelor's or master's degree.

Although some bachelor's degree programs are already offered in the area, our interviews suggest that some employers were concerned that these programs may not be convenient or accessible. Employers noted that tuition rates were relatively expensive at the private programs in the area. Location was a concern, particularly for non-traditional students and working professionals who stand to be placed at greater hardship by commute times to educational institutions outside of the county.

The student survey also indicates a substantial portion of students do have plans to eventually obtain a bachelor's or master's degree. Forty percent of respondents indicated that increased options would make them much more likely to continue on to a bachelor's degree program. Together the input from local employers and students at two-year institutions provide multiple indicators pointing to a need for more bachelor's or graduate degree opportunities in the county.

4.3 Estimating Potential Demand for Higher Education Opportunities

Given the evidence for an unmet demand for public four-year education in the county, we focus on estimating demand for occupations that require a bachelor's degree. Occupational projections generated by the Wisconsin Department of Workforce Development (WDWD) serve as the basis for estimating potential demand for bachelor's programs in Waukesha.

We first restrict the list of occupations to those requiring a bachelor's degree or master's degree. Those requiring a doctorate or higher are not included at this time because they are not considered viable for introduction given the relatively small number of occupations requiring that level of training. We also eliminate those occupations with less than five projected annual openings because they have little demand potential. After these restrictions we are left with 76 occupations. (**Appendix B** contains a full list of occupations before the restrictions were applied.)

Using this list of 76 occupations, we then estimate potential demand using a two-step process. First, we isolate the portion of the openings we expect to be in Waukesha. The DWD projects occupational openings for regions, and Waukesha is located in the Milwaukee, Waukesha, Ozaukee, and Washington County (Milwaukee-WOW) region. Since 27% of the regional labor force is estimated to be working in Waukesha, we use this as a baseline to estimate the number of job openings in Waukesha.⁵ To account for expected variation, we create a +/-10% boundary around this baseline to obtain a range of 24% to 30% of annual openings that need to be filled in Waukesha County. This

⁵ The 27% estimate was obtained from the employment levels reported in the County Wages and Employment data from the Estimates Delivery System (EDS), available from the Wisconsin Department of Workforce Development.

range is also consistent with population trends: In 2006, 25% of the population in the Milwaukee-WOW region lived in Waukesha County.

Exhibit 4-1 to **Exhibit 4-3** present the demand estimates. In many instances, input from the employer interviews, survey, and student survey corroborate these needs. Accordingly, each exhibit includes a column for each mode of input: employer interviews, survey, and student survey. A check in the column denotes that information from these sources verified the need. A “+” in the columns denotes that a strong interest was expressed in an occupational area.

While estimating overall demand is relatively straightforward, estimating unmet demand is not. The problem is that while there is ample data on employer demand, there is not a good source of data estimating the available supply of qualified employees to meet that demand. Thus we must attempt to make rough estimates from the data we do have: occupational demand, and perceived demand from employers and potential students. The employer surveys, employer interviews, and the student survey each represent an independent estimation of the interest in a given field. It is reasonable to presume that areas of greater unmet demand will appear more frequently in these sources. Thus, we will quantify the potential unmet interest in Bachelor's degree offerings as follows:

- Low demand (cited in one source): 10 percent of projected openings
- Moderate demand (cited in two sources): 20 percent of projected openings
- High demand (cited in three sources): 30 percent of projected openings

This approach provides a general idea of what level of demand may exist. However, it should be reiterated that these estimates are not intended to represent specific enrollment projections for a given program at a particular institution or location, but only as macro indicators of enrollment potential.

4.3.1 Estimating Potential Demand for Bachelor's Degree Opportunities

Exhibit 4-1 displays the estimates for the annual demand for graduates with bachelor's degrees to fill occupational openings in Waukesha County. We expect the demand to lean toward the 30% level of for those occupations where two or three information sources suggest that the occupation is in demand. These high demand areas include:

- Business related occupations
 - General Business
 - Management
 - Finance
 - Marketing
 - Human Resources
- Computer Science
- Engineering
- Nursing

Conclusions from the Needs Assessment for Waukesha County

■ Education

The occupations with the most projected demand are registered nurses and education, (especially teachers). Focusing on the high-end demand estimates, there are 66 to 83 job openings for registered nurses. For education the range is 66 to 83.

**EXHIBIT 4-1
POTENTIAL ANNUAL DEMAND ESTIMATES FOR BACHELOR'S DEGREE
GRADUATES IN WAUKESHA COUNTY**

OCCUPATION	Waukesha Co. Portion of Milwaukee WOW region		Source*			Estimated Annual Demand					
	24%	30%	Inter- view	Emplr. Srv.	Std. Srv.	10%		20%		30%	
BACHELOR'S DEGREE											
Business											
Business Operations Specialists, All Other	70	87	✓	✓	✓						
Purchasing Agents, Except Wholesale, Retail, and Farm	19	24	✓	✓	✓						
Cost Estimators	14	18	✓	✓	✓						
Wholesale and Retail Buyers, Except Farm Products	7	9	✓	✓	✓						
Construction Managers	5	6	✓	✓	✓						
Sub-Total	115	144				12	14	23	29	35	43
Education											
Elementary School Teachers, Except Special Education	60	75		✓	✓						
Secondary School Teachers, Except Special and Vocational	53	66		✓	✓						
Preschool Teachers, Except Special Education	31	39		✓	✓						
Middle School Teachers, Except Special and Vocational Educat	26	33		✓	✓						
Teachers and Instructors, All Other	19	24		✓	✓						
Special Education Teachers, Preschool, Kindergarten, & Elem.	10	12		✓	✓						
Special Education Teachers, Secondary School	7	9		✓	✓						
Kindergarten Teachers, Except Special Education	5	6		✓	✓						
Special Education Teachers, Middle School	5	6		✓	✓						
Education, Training, and Library Workers, All Other	5	6		✓	✓						
Sub-Total	221	276				22	28	44	55	66	83
Engineering											
Mechanical Engineers	22	27	✓	✓							
Industrial Engineers	17	21	✓	✓							
Electrical Engineers	10	12	✓	✓							
Civil Engineers	7	9	✓	✓							
Electronics Engineers, Except Computer	7	9	✓	✓							
Engineers, All Other	7	9	✓	✓							
Environmental Engineers	5	6	✓	✓							
Sub-Total	74	93				7	9	15	19	22	28
Finance											
Accountants and Auditors	67	84	✓	✓	✓						
Loan Officers	17	21	✓	✓	✓						
Personal Financial Advisors	10	12	✓	✓	✓						
Financial Analysts	7	9	✓	✓	✓						
Insurance Underwriters	5	6	✓	✓	✓						
Financial Specialists, All Other	5	6	✓	✓	✓						
Sub-Total	110	138				11	14	22	28	33	41
Health											
Medical and Clinical Laboratory Technologists	17	21	✓	✓	✓						
Dietitians and Nutritionists	5	6	✓	✓	✓						
Sub-Total	22	27				2	3	4	5	6	8
Registered Nurses	194	243	✓	✓	✓	19	24	39	49	58	73

**EXHIBIT 4-1 (Continued)
POTENTIAL ANNUAL DEMAND ESTIMATES FOR BACHELOR'S DEGREE
GRADUATES IN WAUKESHA COUNTY**

OCCUPATION	Waukesha Co. Portion of Milwaukee WOW region		Source*			Estimated Annual Demand					
	24%	30%	Inter- view	Emplr. Srv.	Std. Srv.	10%		20%		30%	
BACHELOR'S DEGREE											
Human Resources											
Human Resources, Training, and Labor Relations Specialists,	19	24	✓	✓	✓						
Employment, Recruitment, and Placement Specialists	17	21	✓	✓	✓						
Training and Development Specialists	12	15	✓	✓	✓						
Compensation, Benefits, and Job Analysis Specialists	5	6	✓	✓	✓						
Sub-Total	53	66				5	7	11	13	16	20
Info. Technology											
Computer Software Engineers, Applications	43	54	✓	✓	✓						
Computer Systems Analysts	36	45	✓	✓	✓						
Network and Computer Systems Administrators	22	27	✓	✓	✓						
Network Systems and Data Communications Analysts	19	24	✓	✓	✓						
Computer Software Engineers, Systems Software	17	21	✓	✓	✓						
Computer Programmers	14	18	✓	✓	✓						
Database Administrators	7	9	✓	✓	✓						
Sub-Total	158	198				16	20	32	40	48	59
Social Services											
Social and Community Service Managers	10	12			✓						
Community and Social Service Specialists, All Other	7	9			✓						
Sub-Total	17	21				2	2	3	4	5	6

Exhibit derived from MGT calculations from occupational projections from Wisconsin Department of Workforce Development, WCTC hosted student survey, and MGT employer survey and interviews.

4.3.2 Estimating Potential Demand for Masters and Graduate Degree Opportunities

Estimated demand for graduates with master's or other graduate degrees (**Exhibit 4-2**) is lower than the demand for bachelor's degree graduates presented earlier. There is not enough annual demand for any one individual program, but some industry specific training could be combined to offer a general degree in business and management operations. This is consistent with the interview and employer survey findings where most of the expressed need was at the bachelor's degree level.

For openings requiring a graduate level degree (**Exhibit 4-3**), three occupation areas emerge as having a projected need supported by more than one information source:

- Business
- Healthcare
- Education

Evidence from the interviews points to some employers having a particular interest in recruiting local MBA graduates. These graduates could certainly fill the business occupation openings listed in both Exhibit 4-2 and Exhibit 4-3.

**EXHIBIT 4-2
POTENTIAL ANNUAL DEMAND ESTIMATES FOR BACHELOR'S OR MASTER'S
DEGREE GRADUATES IN WAUKESHA COUNTY**

OCCUPATION	Waukesha Co. Portion of Milwaukee- WOW region		Source*			Estimated Annual Demand						
	24%	30%	Inter- view	Emplr. Srv.	Stdn. Srv.	10%		20%		30%		
BACHELOR'S or MASTERS DEGREE												
Business												
General and Operations Managers	74	93	✓	✓	✓							
Management Analysts	17	21	✓	✓	✓							
Industrial Production Managers	10	12	✓	✓	✓							
Administrative Services Managers	7	9	✓	✓	✓							
Sub-Total	108	135				11	14	22	27	32	41	
Education Administration												
Education Administrators, Elementary and Secondary School	7	9		✓	✓							
Education Administrators, Postsecondary	7	9		✓	✓							
Education Administrators, Preschool and Child Care Center	5	6		✓	✓							
Sub-Total	19	24				2	2	4	5	6	7	
Engineering Managers												
	12	15				1	2	2	3	4	5	
Financial Managers												
Financial Managers	14	18	✓	✓	✓							
Actuaries	5	6	✓	✓	✓							
Sub-Total	19	24				2	2	4	5	6	7	
Medical and Health Services Managers												
	17	21	✓	✓	✓	2	2	3	4	5	6	
Human Resources												
Compensation and Benefits Managers	5	6	✓	✓	✓							
Human Resources Managers, All Other	5	6	✓	✓	✓							
Sub-Total	10	12				1	1	2	2	3	4	
Computer and Information Systems Managers												
	17	21	✓	✓	✓	2	2	3	4	5	6	
Marketing												
Sales Managers	14	18	✓	✓	✓							
Advertising and Promotions Managers	5	6	✓	✓	✓							
Marketing Managers	5	6	✓	✓	✓							
Sub-Total	24	30				2	3	5	6	7	9	

Exhibit derived from MGT calculations from occupational projections from Wisconsin Department of Workforce Development, WCTC hosted student survey, and MGT employer survey and interviews.

**EXHIBIT 4-3
POTENTIAL ANNUAL DEMAND ESTIMATES FOR GRADUATE DEGREE
GRADUATES IN WAUKESHA COUNTY**

OCCUPATION	Waukesha Co. Portion of Milwaukee WOW region		Source*			Estimated Annual Demand					
	24%	30%	Inter- view	Emplr. Srv.	Stdn. Srv.	10%		20%		30%	
GRADUATE DEGREE											
Business											
Market Research Analysts	17	21	✓	✓	✓	2	2	3	4	5	6
Education											
Educational, Vocational, and School Counselors	10	12		✓	✓						
Health Specialties Teachers, Postsecondary	10	12		✓	✓						
Art, Drama, and Music Teachers, Postsecondary	5	6		✓	✓						
Instructional Coordinators	5	6		✓	✓						
Sub-Total	29	36				3	4	6	7	9	11
Health											
Occupational Therapists	10	12	✓	✓	✓						
Physical Therapists	10	12	✓	✓	✓						
Medical and Public Health Social Workers	7	9	✓	✓	✓						
Mental Health and Substance Abuse Social Workers	7	9	✓	✓	✓						
Substance Abuse and Behavioral Disorder Counselors	5	6	✓	✓	✓						
Mental Health Counselors	5	6	✓	✓	✓						
Speech-Language Pathologists	5	6	✓	✓	✓						
Sub-Total	48	60				5	6	10	12	14	18
Social Services											
Child, Family, and School Social Workers	19	24			✓						
Rehabilitation Counselors	7	9			✓						
Marriage and Family Therapists	5	6			✓						
Sub-Total	31	39				3	4	6	8	9	12

Exhibit derived from MGT calculations from occupational projections from Wisconsin Department of Workforce Development, WCTC hosted student survey, and MGT employer survey and interviews.

4.4 Concluding Observations

Our research indicates that there is general concern about access to higher education at the baccalaureate level or higher in Waukesha County. In particular, employers note that access to affordable options is a problem and express an interest in having access to public bachelor's degree programs in the county. Students also expressed their sensitivity to price and indicated that affordability is one of the critical factors influencing their decision to pursue a bachelor's or master's degree. Employers and students are also concerned about having higher education opportunities that are convenient to home and/or work, especially given the commute times to the Milwaukee on a regular work day.

In addition to these access issues, the data also point to a demand for bachelor's degree programs. By way of examining occupational projections, student interest, and employer and community leader opinions, this needs assessment has identified potential demand for additional bachelor's degree programs whose graduates could fill projected openings in the following occupation areas:

Conclusions from the Needs Assessment for Waukesha County

- Business related occupations
 - General Business
 - Management
 - Finance
 - Marketing
 - Human Resources

- Computer Science
- Engineering
- Nursing (primarily registered nurses)
- Education (primarily teachers)

This assessment indicates that there is considerable interest from both employers and prospective students in increasing the availability of affordable Baccalaureate-level education in Waukesha County. However, this is just one piece of the comprehensive picture of the County's higher education needs. The greatest absolute need for postsecondary education is at the associate level or below, and the existing institutions appear ready to meet those demands. County employers also have ongoing continuing education needs for their employees; while many of these needs are regularly addressed by existing institutions, some employer needs are in highly specific content areas and require access to large institutions with expansive areas of expertise. Finally, neither employer demand nor the existence of quality education programs are sufficient if there are not qualified students interested in pursuing education in those fields. Area high schools should be included in the regional planning process to ensure that students are prepared for the academic rigors of higher education—and are advised of the existence of viable career opportunities in fields that are not "seen on TV." Educational planning is a multi-faceted process and the ultimate success or failure of any new initiatives is highly dependent upon many market and operational factors that cannot be fully captured by a needs assessment.

APPENDIX A:
STUDENT SURVEY REPORT

APPENDIX A STUDENT SURVEY REPORT

Higher Education Needs in Waukesha County: Student Survey

Viktor Brenner, Ph.D., WCTC Institutional Research Coordinator

In November 2007 Waukesha County Technical College (WCTC) hosted a survey of the anticipated higher education needs of students at WCTC and the University of Wisconsin-Waukesha (UWW), as well as some students of other institutions and members of the general community, on behalf of the Waukesha County Action Network (WCAN). Among the 462 respondents, 44% were currently WCTC students, 37% UWW students, 3% students at some other school, and 16% were not enroll in higher education at this time. By virtue of how the survey was distributed, however, many of those in the latter two groups are likely to be current employees of either WCTC or UWW.

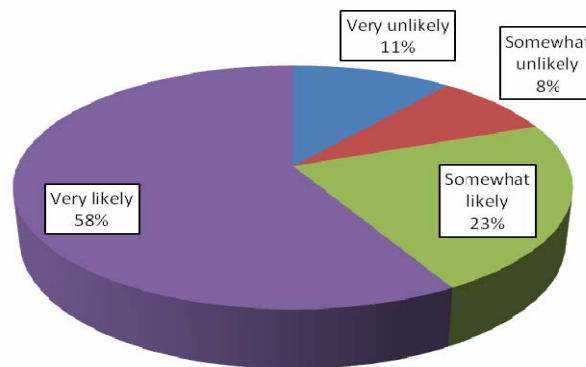
General characteristics of survey respondents are shown at right. UWW students tended to be younger than other respondents*; 75% were 25 and under, compared with 43% of WCTC students and less than 20% of other respondents. In large part because of this, UWW students were half as likely (21%)* to be employed full-time as any other group. Female students appear to be over-represented in the WCTC sample; females comprise 53% of degree students at WCTC but 80% of respondents (62% of UWW respondents were female). Based on enrollment patterns, it is likely that Health professions students are over-represented and Skilled Traded technical students underrepresented in the WCTC sample. Factors such as these indicate areas where survey respondents may not be representative of the target population, and consequently their responses may not accurately generalize to all Waukesha County two-year college students.

Respondent Characteristics	
Gender	73% Female
Ethnicity	91% Caucasian
Marital status	58% unmarried
Median Age	25
Current Status	66% employed, full-time (39%) or part-time (27%)
Already hold higher ed. degree (AAS, BA, MA)	21%

Figure 1: Likelihood of Obtaining a Bachelor's Degree

Likelihood of Pursuing a Bachelor's or Master's Degree

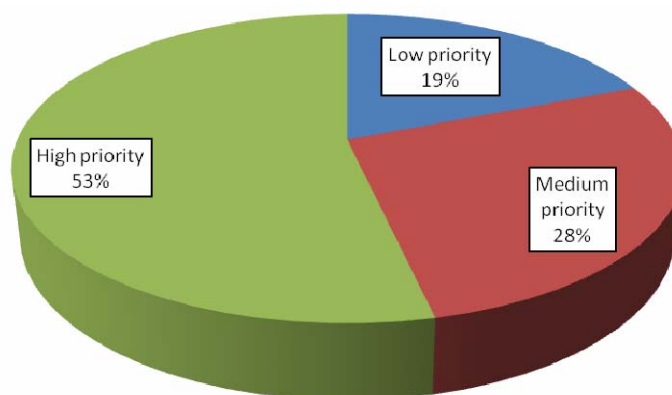
Figure 1 shows respondent self-estimates of the likelihood of eventually completing a Bachelor's degree. Well over half thought it was very likely, and three-fourths found it more likely than unlikely. Not surprisingly, over 80% of students at UWW or other colleges (presumably many of them four-year schools) thought it very likely that they would complete a Bachelor's Degree, compared with 44% of WCTC students*, whose current programs are designed to provide them with viable career trajectories that don't require a four-year degree.



* Statistically significant at the p<.05 level or less

Figure 2: Priority of Obtaining Bachelor's Degree

A similar pattern exists with regard to the priority/importance to the respondent of obtaining a Bachelor's Degree. Over half of all respondents described it as a high priority, but UWW and other college and university students rated it a high priority 77% of the time, whereas WCTC students rated it a high priority 39% of the time (students not enrolled at all rated it a high priority 30% of the time). This again is reflective of the existing self-selection of students between the two schools. Students whose ultimate objective is to obtain a Bachelor's Degree in the short term are better served by the transfer focus of the UW two-year colleges, while students that are thinking in terms of beginning a career now and returning to school at a later time are better served by WCTC's career focus.

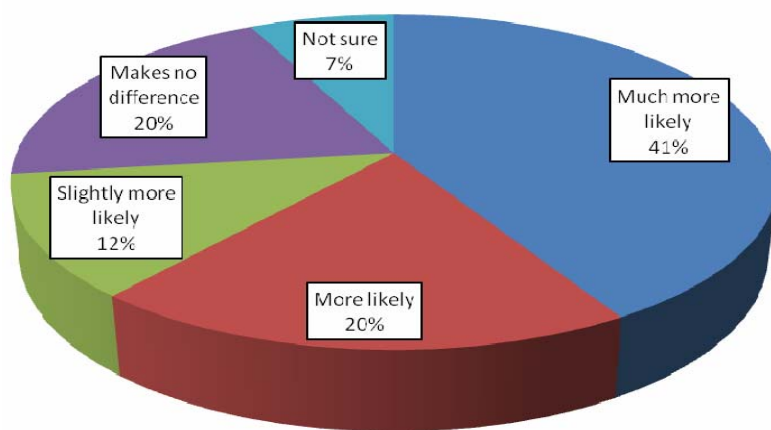


In addition to Bachelor's Degrees, there was a question that asked "If you have Bachelor's Degree, how likely are you to obtain a Master's degree in the next five years?" About one in five respondents answered this question—almost exactly twice the number of respondents that had indicated that they already held a Bachelor's or Master's degree earlier in the survey. What seems to have happened is that some respondents ignored the "if you currently have a Bachelor's degree" qualifier on the question, and reported on the likelihood that they would seek a Master's Degree eventually given the field of study that held interest to them. Consistent with this hypothesis, almost two-thirds of the respondents to this item also answered the item on the likelihood of obtaining a Bachelor's degree.

Factors Affecting Students' Pursuit of Bachelor's and Master's Degrees

WCAN and the business community have an interest in ensuring an adequate, highly educated workforce for the future of Waukesha County. As a result, a major focus of this survey was to identify factors that would encourage students to continue their education to the Baccalaureate level or beyond.

Figure 3: Would Increased Education Opportunities in Waukesha County Make You More Likely to Pursue a Bachelor's/Master's?



One item of particular interest is whether having more Bachelor's degree options within Waukesha County than currently exist would increase the likelihood of obtaining an advanced degree among current students of two-year programs. Overall, 41% of respondents thought that having more local options would make them "much more likely" to complete a Bachelor's or Master's degree (Figure 3). An additional

20% responded "more likely," 12% said "slightly more likely," 20% said it made no difference, and 7% were unsure. It must be recalled, however, that the majority of respondents are currently enrolled in colleges in the county; students with strong preference to stay in the area are likely to be already enrolled with us, whereas students for whom location is not an issue are more likely to be enrolled elsewhere and thus not included in the survey sample.

Figure 4: Likelihood of Continuing Education by Priority

The value of having of local options for obtaining a Bachelor's degree was related to the priority that respondents put on obtaining an advanced degree (Figure 4). Among respondents for whom obtaining a Bachelor's was a high priority, 54% responded that having more options in the county would make them much more likely to continue their education. On the other hand, for students where continuing education was a low priority, 30% said having local options made them only slightly more likely to pursue a Bachelor's degree (or higher), and another one-third said it made no difference. Thus, having local options was most important to those students that were most likely to continue anyway.

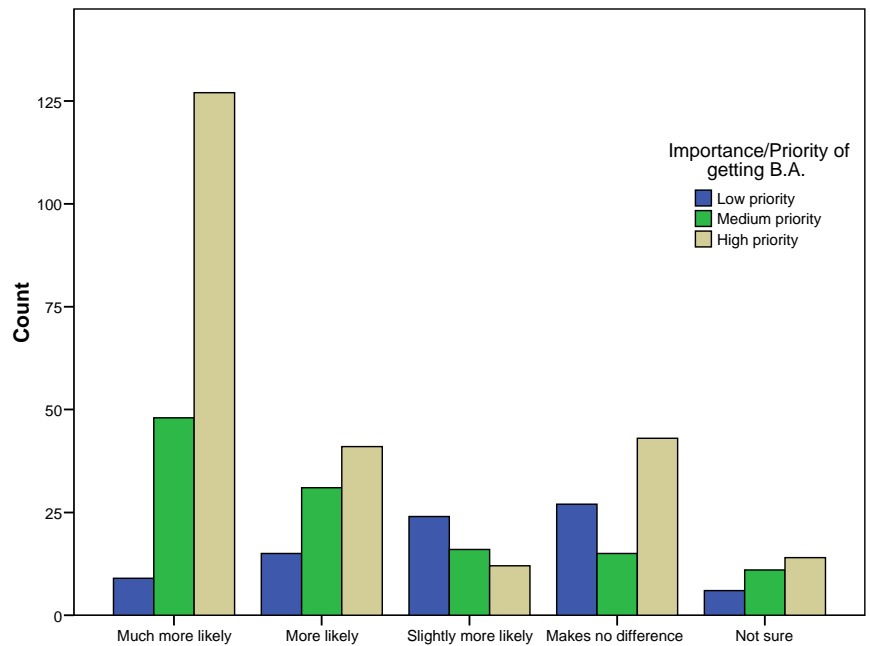
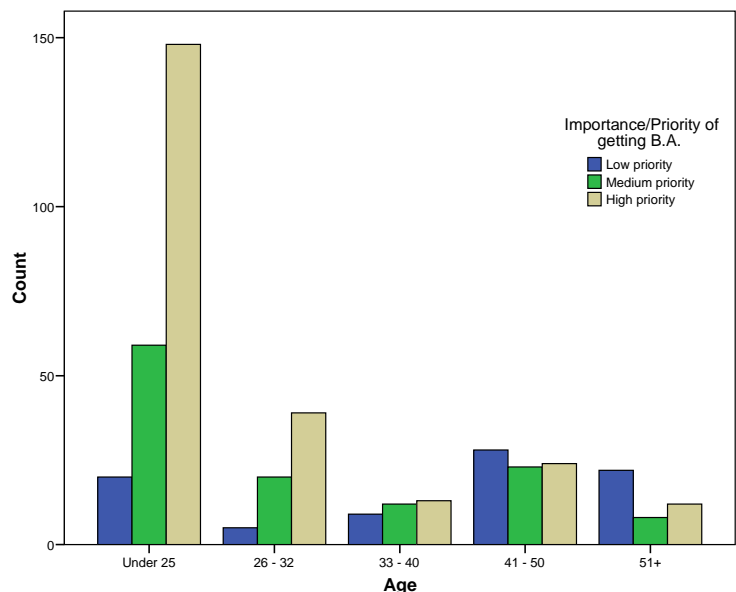


Figure 5: Priority of Receiving a BA/MA by Age

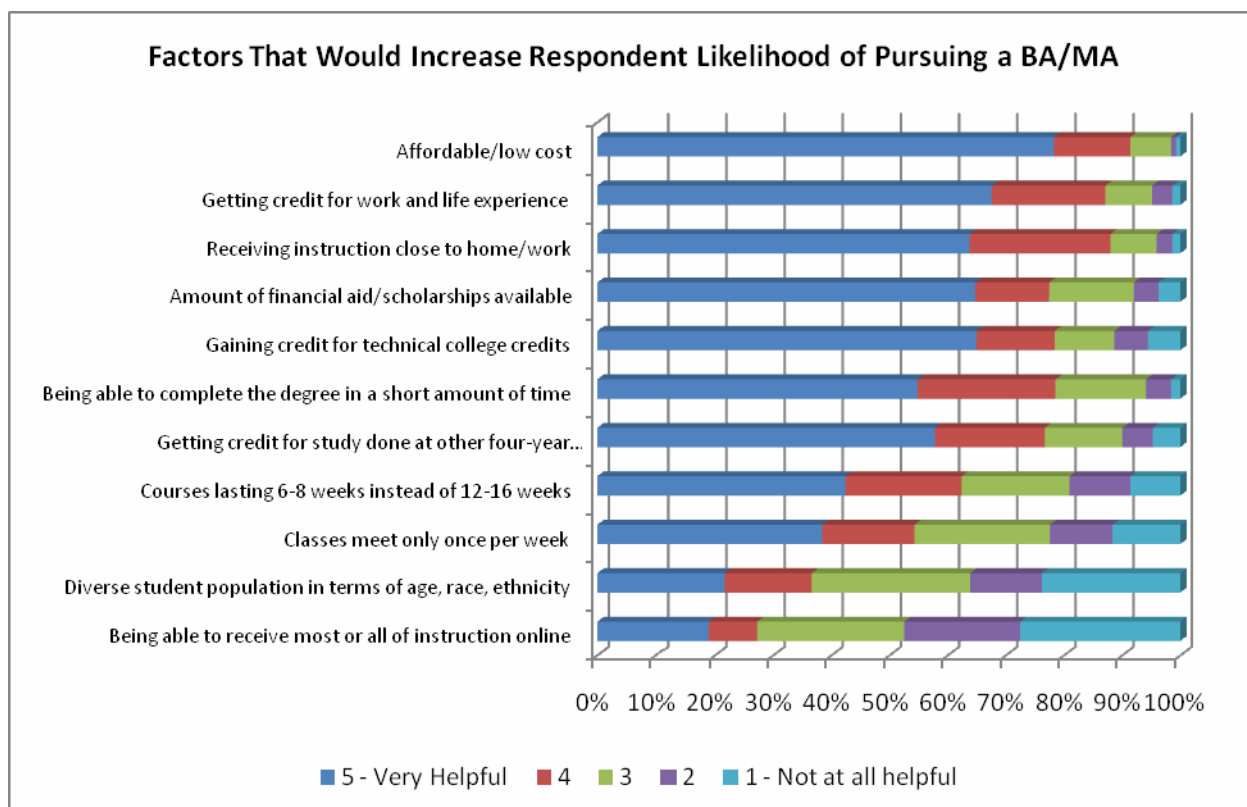
WCTC and UWW respondents were about equally likely to say that having local options would make them "much more likely" to pursue a Bachelor's/Master's. Respondents of all age groups were about equally likely to answer "Much more likely" until the age of 50, at which point the percent choosing this option drops from over 40% to about 25%. Most likely, this age effect is an artifact of the fact that



obtaining a Bachelor's/Master's was a much lower priority for older respondents than younger ones (see Figure 5).

When specifically asked about the effect that having more Baccalaureate options in Waukesha County specifically, the response was overwhelmingly positive. However, students were also asked about a variety of other factors that could influence the likelihood of their continuing their education. These data paint a somewhat different picture of what students need; the relative importance of each factor is summarized in Figure 6.

Figure 6: Factors That Increase Likelihood of Pursuing a BA/MA

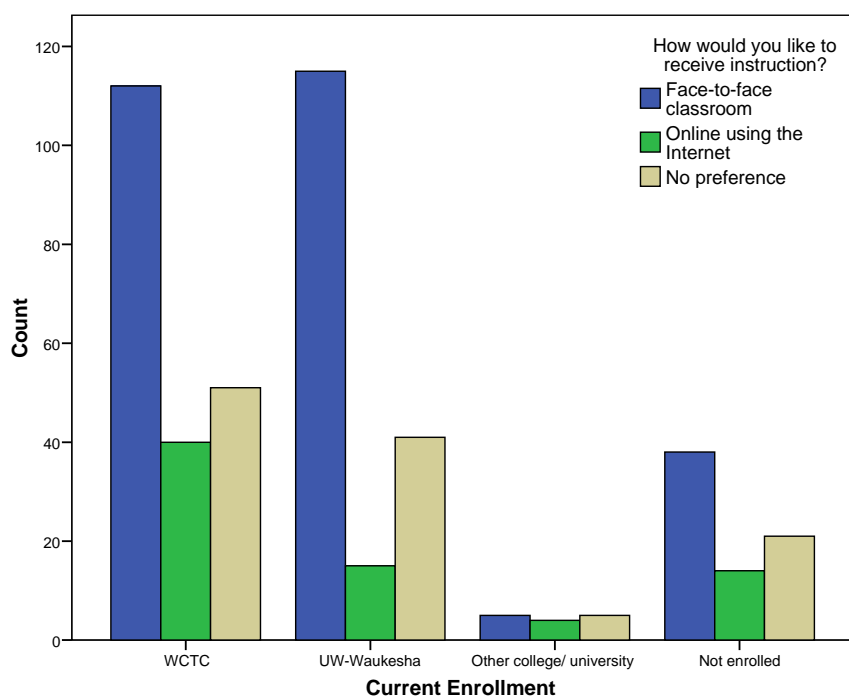


When looked at in comparison to other factors rather than in and of itself, location is just the third most important factor in determining whether students would continue to the Baccalaureate level. Perhaps not surprisingly, affordability is the biggest factor; three-fourths of respondents reported that affordability would be very helpful to their pursuit of a Bachelor's, and among students for whom obtaining a Bachelor's degree was a high priority more than 85% stated that affordability would be very helpful.* Getting credit for work and life experience was another major factor, although this factor was more important for respondents where obtaining a Bachelor's was a low or medium priority (73% replied "very helpful") and less of an issue for respondents where it was a high priority (58%)*. Both of these factors were rated as being more important than geographic proximity with regards to the likelihood that students would pursue a four-year degree.

* Statistically significant at the p<.05 level or less

Moving further down the list, the availability of financial aid and receiving credit for technical college credits were both rated as approximately equally important as geographic proximity. Being able to complete in a short amount of time was perceived to be more helpful for respondents where an advanced degree was a low priority (66% rated very helpful) than a moderate priority (61% very helpful) or high priority (49% very helpful)*. Accelerated format and other classes that last six or eight weeks rather than a full term were most helpful to respondents where the Bachelor's was a moderate priority (53% very helpful), compared with 48% of low priority and 37% of high priority respondents*. The helpfulness of classes that meet once per week rather than two or three times per week was rated "4" or "5" (very helpful) by 61% of respondents where education was a low or moderate priority, but just 46% of respondents for whom it was a high priority.*

Figure 7: Preferred Mode of Instruction by Institution



It may surprise some to learn that the ability to receive all or most of one's instruction online was the least helpful factor in the student's decision to proceed. Online availability further follows an unusual response pattern in that those for whom education is a moderate priority found online courses most helpful (38% rated helpfulness a "4" or "5"), compared with 30% of low priority and just 20% of high priority respondents. Consistent with this, face-to-face

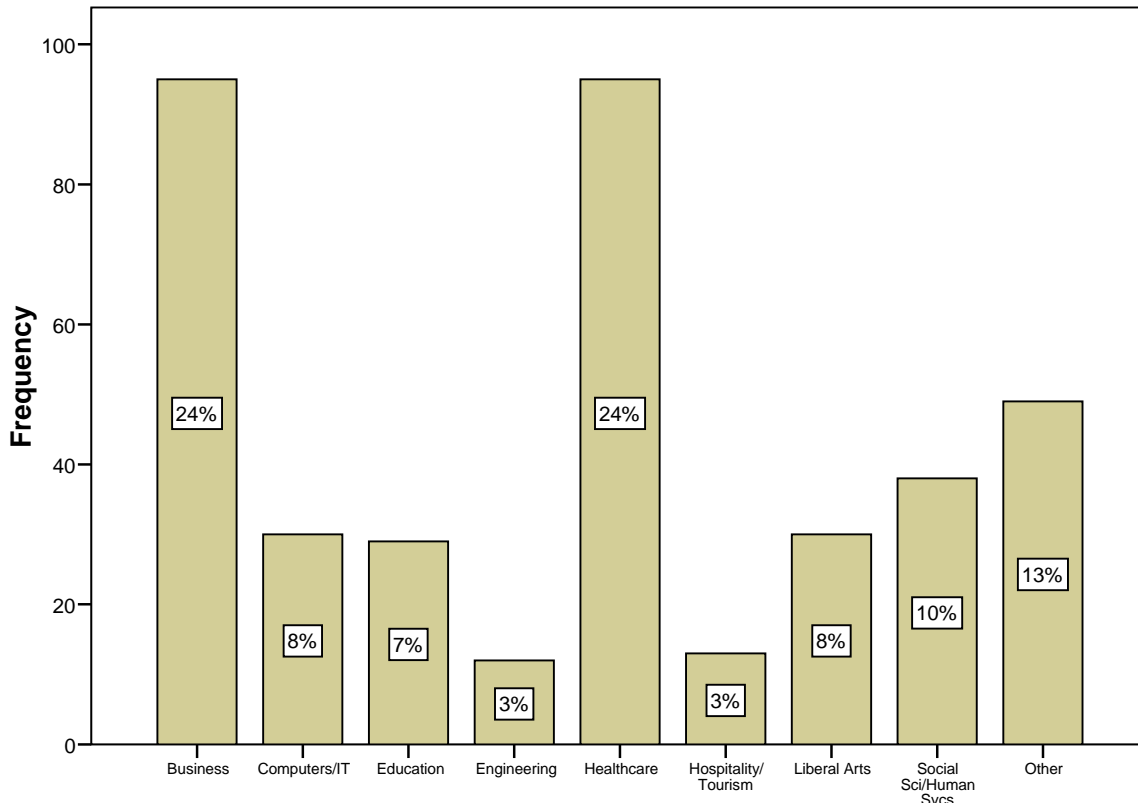
instruction was overwhelmingly the preferred modality for instruction (Figure 7), chosen by two-thirds of UWW students and 55% of WCTC students, while students at other colleges and universities, although a very small number overall, were equally split among preferences. This preference for face-to-face instruction may thus be another reflection of the fact that most respondents were current WCTC or UWW students, where most classes are taught in traditional classroom settings. Surprisingly, students under 25 were second only to the very oldest respondents in the degree of preference they gave to face-to-face instruction.

Student Demand and Offerings

Information like current students' preference for face-to-face instruction is helpful to Waukesha County educational institutions in planning what kinds of future programming to offer. Figure 8 shows the preferred Baccalaureate fields of study for current county two-year college students. Health and business majors lead the way,

especially among WCTC students; almost half of all respondents (60% among WCTC students) envisioned a future major in one of these two fields. WCTC students were also more likely than UWW students to choose majors in IT/Computer Science and Hospitality. UWW students were more likely than WCTC students to be interested in Education, Social Sciences/Humanities, Engineering, or Liberal Arts. Less than one percent of respondents had interest in careers in Environmental or Finance areas, so these categories were dropped from Figure 8 to improve readability.

Figure 8: Preferred Subject Areas for Potential Bachelor's Degrees

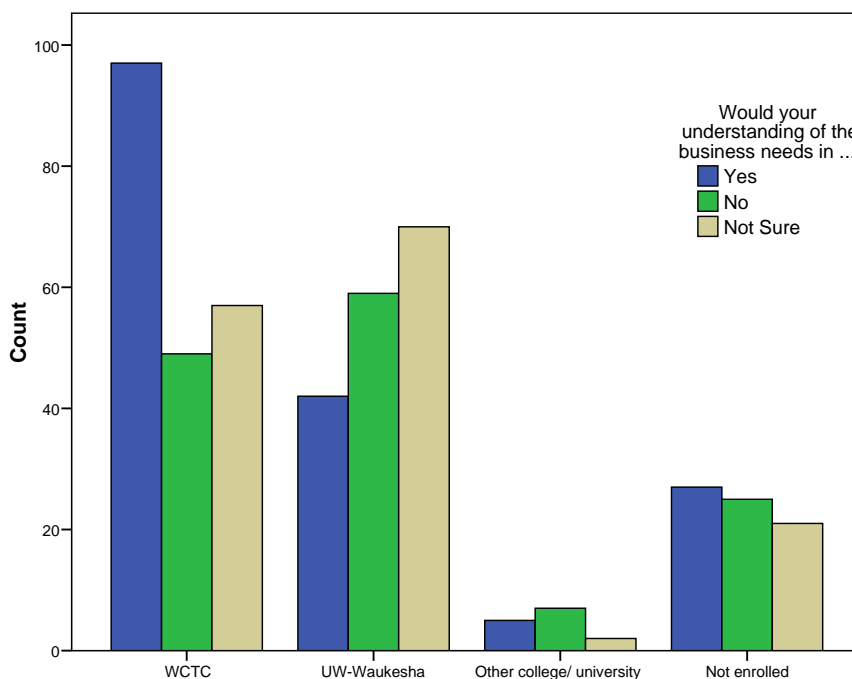


Categories with less than 1% of responses excluded

Business leaders may be disappointed to learn that only 37% of respondents agreed that having better knowledge of the needs of Waukesha County employers would influence their choice of major. Thirty percent would not be influenced by this knowledge, with the remaining one-third unsure.

Figure 9: Knowledge of Business Needs Influencing Choice of Major

As see in Figure 9, WCTC students are more likely to let knowledge of Waukesha County business needs influence their choice of majors (48% Yes, 25% No) than UWW students (25% Yes, 35% No). This difference has nothing to do with the relative pro-business stances of UWW or WCTC; rather, it reflects the recurring theme that existing students at UWW and WCTC are a self-selected group and as such not representative of the entire population of current students whose home addresses are in



Waukesha County. WCTC should be more appealing to career-oriented students who may intend to work full-time while going to school, whereas UWW should be more appealing to students seeking a traditional four-year Bachelor's degree, especially if they eventually hope to gain admission to one of the system's high-demand four-year schools. But if these results are seen by the business community as reflecting less support for their needs than they would like, students feel even less support from business, at least in terms of tuition reimbursement and financial assistance in obtaining higher education. Sixty-five percent of employed WCTC students either do not have any tuition reimbursement plan at work (57%) or don't know if they do (9%). Among UWW students, 80 percent either don't have tuition assistance (68%) or don't know if they do (12%).

Conclusions

The Higher Education Needs Survey for Students obtained a good response, but reflects a narrow segment of the population. The fact that the survey respondents have already chosen to enroll at WCTC or UWW is *de facto* evidence that their educational needs are a good fit to what these institutions provide. Survey respondents are likely to be a reasonably good representation of the opinions of current two-year college students in the county. Their responses would not, however, accurately portray the needs of college students in general; other methodologies, such as the general population survey commissioned by WCAN, would better address the needs of a broader population. However, current two-year college students are a population of special interest if the goal is to foster the development of a Baccalaureate-level workforce. With more or less half of a Bachelor's degree completed, two-year college students can attain a four-year degree with less investment of time and money than new

postsecondary students. Thus, addressing factors that increase the likelihood of these students continuing their education can provide a lot of "bang for the buck."

Current two-year college students agree that having more options for completing the degree in Waukesha County would increase their likelihood of obtaining a Bachelor's or Master's degree. Over 40% of respondents stated that increased options would make them much more likely to continue, and the more important that obtaining a Bachelor's degree is to them, the more that having local options is perceived as beneficial. In the grand scheme of things, however, other factors seem to be the most important determinants of continuing beyond the Associate level. Looking at the items in Figure 6, the eleven items can be grouped into three superordinate clusters: affordability, length of time to degree, and convenience. Looked at in this way, affordability (e.g. cost of attendance, availability of financial aid) is the most important factor, with length of time to degree (e.g. shortening a program by accepting credit for prior experiences or improved transfer recognition) second. Convenience factors, such as shorter terms or online availability, were the least important determinants of continued education, and in many cases these factors were most important to respondents for whom education was not a top priority. Having more options in Waukesha County is essentially a convenience factor, although "being able to attend classes close to home or work" was rated much higher than any of the other convenience factors. Close to home or work, however, is a relative concept. Waukesha County is inextricably embedded in the Milwaukee-Waukesha Metropolitan Statistical Area; workers routinely cross county boundaries across southeastern Wisconsin. The 2000 Census found that only 61% of Waukesha County residents were employed in Waukesha County. Thus, for many potential students existing options in neighboring jurisdictions may be just as convenient to their place of work as would be any location to their residence. Forty percent of respondents reported that having more options in Waukesha County would make them much more likely to continue their education, but up to 75% of respondents rated affordability and time to degree factors as having the maximum effect on their likelihood of continuing their education. Perhaps the kind of improved accessibility that would most encourage current county two-year college students to continue their education to the Baccalaureate level and beyond is an accessibility that is measured in dollars and cents rather than in miles on an odometer.

If it is a goal to encourage students to obtain Bachelor's degrees, then the key to achieving that goal would seem to be an economic one. Granted, we can expect economic issues to be more pressing for current UWW and WCTC students simply because they have already chosen to attend the lowest-cost alternative. But again, this is a population of interest, and the message they send us is that the major barriers that need to be overcome for them to seek additional education are economic ones. Almost two-thirds of students that are also currently employed in the work force either have no tuition reimbursement program or aren't aware of the fact that their employer has one. It may be tempting to dismiss this finding by suggesting that since many of the respondents are students first and foremost, they may be working in entry-level service sector positions. While no one is suggesting that it should be the responsibility of the retail and fast food sectors to fund higher education, as an interdependent economic community this is an area of disconnect: the kinds of jobs students can obtain without a

higher education are jobs that do not assist them in ultimately obtaining that education.

Philosophically, this is where the role of public education should come into play: the citizenry at large supports the cost of higher education, making it more accessible to those in position to benefit from it, and in turn becoming highly skilled workers that improve the economy as a whole. And yet, while the need for a highly educated workforce may never have been greater, the broader societal trend has been to pass an increasing share of the financial burden of obtaining that education on to the students themselves. At a time of increasing enrollments, state support for public higher education has dwindled substantially. The Wisconsin Technical College System (WTCS) reported in September that state funding, which represented 30% of WTCS operating revenue as recently as 1990, constitutes only 14% of WTCS funding today. Some of this shortfall has had to be recouped from local tax levies (WCTC is one of the few districts not levying the maximum percentage allowable by law), but a lot of it has been passed on to students: WTCS per-credit tuition has increased 56% since 1999-2000, more than double the national rate of inflation over that period—and Wisconsin has done comparatively well in keeping education costs down. A Department of Education report in May showed that nationwide, higher education tuition rates have almost doubled in the last ten years. Certainly there is a natural logic to a user fee model of supporting public institutions, but we must recognize that this model will tend to discourage individual pursuit of higher education.

In sum, will having increased educational options in the county encourage students to obtain a Bachelor's Degree? Undoubtedly for some the answer is yes. But for the segment of the population represented by current UWW and WCTC students, the availability of affordable education options will likely be the most important factor determining whether they will eventually obtain the Baccalaureate.

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APPENDIX B:

***ANNUAL PROJECTED JOB
OPENINGS FOR OCCUPATIONS
REQUIRING A BACHELOR'S
DEGREE OR HIGHER IN
WAUKESHA COUNTY***

APPENDIX B
ANNUAL PROJECTED JOB OPENINGS FOR OCCUPATIONS
REQUIRING A BACHELOR'S DEGREE OR HIGHER IN
WAUKESHA COUNTY

Occupation	Typical Education and Training Path	Percentage of Milwaukee-WOW Region*		Area	Not Included**
		24%	30%		
Management Occupations					
Chief Executives	Bachelor's or higher degree + work experience	12	15	---	X
General and Operations Managers	Bachelor's or higher degree + work experience	74	93	Bus	
Advertising and Promotions Managers	Bachelor's or higher degree + work experience	5	6	Mrkt	
Marketing Managers	Bachelor's or higher degree + work experience	5	6	Mrkt	
Sales Managers	Bachelor's or higher degree + work experience	14	18	Mrkt	
Administrative Services Managers	Bachelor's or higher degree + work experience	7	9	Bus	
Computer and Information Systems Managers	Bachelor's or higher degree + work experience	17	21	IT	
Financial Managers	Bachelor's or higher degree + work experience	14	18	Fin	
Compensation and Benefits Managers	Bachelor's or higher degree + work experience	5	6	HR	
Human Resources Managers, All Other	Bachelor's or higher degree + work experience	5	6	HR	
Industrial Production Managers	Bachelor's or higher degree + work experience	10	12	Bus	
Construction Managers	Bachelor's degree	5	6	Bus	
Education Administrators, Preschool and Child Care Center/Pr	Bachelor's or higher degree + work experience	5	6	ED Adm	
Education Administrators, Elementary and Secondary School	Bachelor's or higher degree + work experience	7	9	ED Adm	
Education Administrators, Postsecondary	Bachelor's or higher degree + work experience	7	9	ED Adm	
Engineering Managers	Bachelor's or higher degree + work experience	12	15	Eng	
Medical and Health Services Managers	Bachelor's or higher degree + work experience	17	21	Hlth	
Social and Community Service Managers	Bachelor's degree	10	12	SocSrvc	
Business and Financial Operations Occupations					
Wholesale and Retail Buyers, Except Farm Products	Bachelor's degree	7	9	Bus	
Purchasing Agents, Except Wholesale, Retail, and Farm Produc	Bachelor's degree	19	24	Bus	
Cost Estimators	Bachelor's degree	14	18	Bus	
Employment, Recruitment, and Placement Specialists	Bachelor's degree	17	21	HR	
Compensation, Benefits, and Job Analysis Specialists	Bachelor's degree	5	6	HR	
Training and Development Specialists	Bachelor's degree	12	15	HR	
Human Resources, Training, and Labor Relations Specialists,	Bachelor's degree	19	24	HR	
Management Analysts	Bachelor's or higher degree + work experience	17	21	MBA	
Meeting and Convention Planners	Bachelor's degree	5	6	Mrkt	
Business Operations Specialists, All Other	Bachelor's degree	70	87	Bus	
Accountants and Auditors	Bachelor's degree	67	84	Fin	
Financial Analysts	Bachelor's degree	7	9	Fin	
Personal Financial Advisors	Bachelor's degree	10	12	Fin	
Insurance Underwriters	Bachelor's degree	5	6	Fin	
Loan Officers	Bachelor's degree	17	21	Fin	
Financial Specialists, All Other	Bachelor's degree	5	6	Fin	
Computer and Mathematical Occupations					
Computer Programmers	Bachelor's degree	14	18	IT	
Computer Software Engineers, Applications	Bachelor's degree	43	54	IT	
Computer Software Engineers, Systems Software	Bachelor's degree	17	21	IT	
Computer Systems Analysts	Bachelor's degree	36	45	IT	
Database Administrators	Bachelor's degree	7	9	IT	
Network and Computer Systems Administrators	Bachelor's degree	22	27	IT	
Network Systems and Data Communications Analysts	Bachelor's degree	19	24	IT	
Actuaries	Bachelor's or higher degree + work experience	5	6	Fin	
Architecture and Engineering Occupations					
Architects, Except Landscape and Naval	Bachelor's degree	5	6	---	X
Civil Engineers	Bachelor's degree	7	9	Eng	
Electrical Engineers	Bachelor's degree	10	12	Eng	
Electronics Engineers, Except Computer	Bachelor's degree	7	9	Eng	
Environmental Engineers	Bachelor's degree	5	6	Eng	
Industrial Engineers	Bachelor's degree	17	21	Eng	
Mechanical Engineers	Bachelor's degree	22	27	Eng	
Engineers, All Other	Bachelor's degree	7	9	Eng	
Life, Physical, and Social Science Occupations					
Medical Scientists, Except Epidemiologists	Doctoral degree	5	6	---	X
Chemists	Bachelor's degree	5	6		
Market Research Analysts	Master's degree	17	21		X
Clinical, Counseling, and School Psychologists	Doctoral degree	10	12	---	X
Community and Social Services Occupations					
Substance Abuse and Behavioral Disorder Counselors	Master's degree	5	6	Hlth	X
Educational, Vocational, and School Counselors	Master's degree	10	12	Edu	X
Marriage and Family Therapists	Master's degree	5	6	SocSrvc	X
Mental Health Counselors	Master's degree	5	6	Hlth	X
Rehabilitation Counselors	Master's degree	7	9	SocSrvc	X
Child, Family, and School Social Workers	Master's degree	19	24	SocSrvc	X
Medical and Public Health Social Workers	Master's degree	7	9	Hlth	X
Mental Health and Substance Abuse Social Workers	Master's degree	7	9	Hlth	X
Community and Social Service Specialists, All Other	Bachelor's degree	7	9	SocSrvc	

Appendix B

Occupation	Typical Education and Training Path	Percentage of Milwaukee-WOW Region*		Area	Not Included**
		24%	30%		
Lawyers	First professional degree	19	24	---	X
Education, Training, and Library Occupations		382	477		
Business Teachers, Postsecondary	Doctoral degree	5	6	Edu	
Mathematical Science Teachers, Postsecondary	Doctoral degree	5	6	Edu	
Health Specialties Teachers, Postsecondary	Master's degree	10	12	Edu	X
Nursing Instructors and Teachers, Postsecondary	Doctoral degree	5	6	Edu	
Education Teachers, Postsecondary	Doctoral degree	5	6	Edu	
Art, Drama, and Music Teachers, Postsecondary	Master's degree	5	6	Edu	X
English Language and Literature Teachers, Postsecondary	Doctoral degree	5	6	Edu	X
Graduate Teaching Assistants	Bachelor's degree	7	9	---	X
Postsecondary Teachers, All Other	Doctoral degree	10	12	Edu	
Preschool Teachers, Except Special Education	Bachelor's degree	31	39	Edu	
Kindergarten Teachers, Except Special Education	Bachelor's degree	5	6	Edu	
Elementary School Teachers, Except Special Education	Bachelor's degree	60	75	Edu	
Middle School Teachers, Except Special and Vocational Educat	Bachelor's degree	26	33	Edu	
Secondary School Teachers, Except Special and Vocational Edu	Bachelor's degree	53	66	Edu	
Special Education Teachers, Preschool, Kindergarten, and Ele	Bachelor's degree	10	12	Edu	
Special Education Teachers, Middle School	Bachelor's degree	5	6	Edu	
Special Education Teachers, Secondary School	Bachelor's degree	7	9	Edu	
Teachers and Instructors, All Other	Bachelor's degree	19	24	Edu	
Librarians	Master's degree	5	6	---	X
Instructional Coordinators	Master's degree	5	6	Edu	X
Education, Training, and Library Workers, All Other	Bachelor's degree	5	6	Edu	
Healthcare Practitioners and Technical Occupations		473	591		
Chiropractors	First professional degree	5	6	---	X
Dentists, General	First professional degree	5	6	---	X
Dietitians and Nutritionists	Bachelor's degree	5	6	Hlth	
Pharmacists	First professional degree	14	18	---	X
Family and General Practitioners	First professional degree	5	6	---	X
Physicians and Surgeons, All Other	First professional degree	12	15	---	X
Physician Assistants	Bachelor's degree	7	9	---	X
Registered Nurses	Associate or Bachelor's degree(8)	194	243	Hlth	
Occupational Therapists	Master's degree	10	12	Hlth	X
Physical Therapists	Master's degree	10	12	Hlth	X
Speech-Language Pathologists	Master's degree	5	6	Hlth	X
Veterinarians	First professional degree	5	6	---	X
Medical and Clinical Laboratory Technologists	Bachelor's degree	17	21	Hlth	
Total, All Occupations		7,313	9,141		

*Note: Milwaukee-WOW is the Milwaukee, Waukesha, Ozaukee, and Washington County region, used by Wisconsin Department of Workforce Development for its occupational projections

**Note: Some occupations were not included due to their size or the advanced educational level required.