

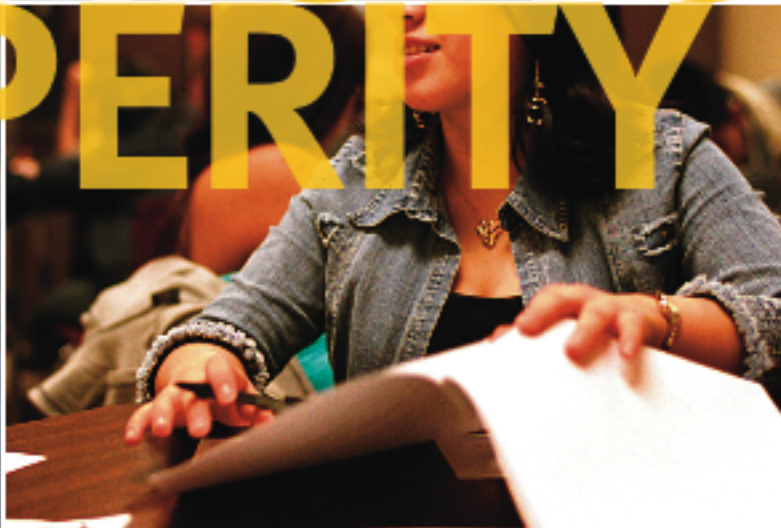
ILLINOIS ASSET MAPPING PROJECT

A PATHWAYS TO PROSPERITY NETWORK REPORT



PATHWAYS TO PROSPERITY

MEETING THE CHALLENGE OF
PREPARING YOUNG AMERICANS
FOR THE 21ST CENTURY



PATHWAYS TO PROSPERITY NETWORK



JOBS FOR THE FUTURE



**HARVARD
GRADUATE SCHOOL OF EDUCATION**

DECEMBER 2012

The Pathways to Prosperity Network

In 2011, the Pathways to Prosperity Project at the Harvard Graduate School of Education released a report, *Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century*, challenging our excessive focus on the four-year college pathway. The report presented the need to create additional pathways that combine rigorous academics with strong technical education to equip the majority of young people with the skills and credentials to succeed in our increasingly challenging labor market. The enormous interest generated by the Pathways report led to the launch of the Pathways to Prosperity Network, a collaboration among six states, Jobs for the Future, and the Harvard Graduate School of Education. The network focuses on ensuring that many more young people complete high school, attain a postsecondary credential with currency in the labor market, and get launched on a career while leaving open the prospect of further education.

For more information, see: <http://www.jff.org/projects/current/education/pathways-prosperity-network/1438/project>.

Jobs for the Future

Jobs for the Future works with our partners to design and drive adoption of education and career pathways leading from college readiness to career advancement for those struggling to succeed in today's economy.

www.jff.org

Harvard Graduate School of Education

Since its founding in 1920, the Harvard Graduate School of Education has been training leaders to transform education in the United States and around the globe. Today, its faculty, students, and alumni are studying and solving the most critical challenges facing education and the effects of its entrepreneurship are improving the world.

www.gse.harvard.edu

Acknowledgements

At the regional level, Dr. James Rydland and Nina Menis of the West Aurora School District 129 assembled and led an extraordinarily energetic, cohesive, and well-rounded team to make this asset-mapping process and document possible. The Dunham Fund generously supported the team's efforts, and their initial contribution was an important catalyst for convening the core team. That core team included Joseph Henning of the Aurora Regional Chamber of Commerce, Jane Regnier and Gary A. Kecskés of Waubensee Community College, State Representative Linda Chapa LaVia, and Mayor Tom Weisner and Carie Anne Ergo from the City of Aurora. The team also included Mike Chapin, LuAnne Kelsey, Cynthia Latimer, and Don Ringelestein from District 129. We also thank Shirley Tankersley for her essential note taking during nearly 30 hours of interviews. We are appreciative of the support from Nelly Argueta and Cindi Nybo from District 129 and Toshia Moss and Alex Voight from the City of Aurora for arranging interviews and stakeholder meetings.

At the state level, Jason Tyszkowski, deputy chief of staff for the Illinois Department of Commerce and Economic Opportunity provided leadership that has both laid a deep foundation for this work in Illinois and accelerated its application in Chicago and Aurora. Without his initiative, this effort would not have come into being, nor would we have had access to the much-appreciated assistance of Jon Furr of Northern Illinois University and Gretchen Koch of CompTIA.

We also thank the leaders from more than 30 of Aurora's education, workforce, labor, charitable foundation, economic development, and private business organizations who generously granted the team interviews and were candid and thoughtful in their responses. Appendix I lists the organizations represented in the interviews. Finally, we thank the vibrant group of West Aurora High School students who provided their experiences and insights that are at the heart of Pathways to Prosperity.

Robert Holm, program director for economic and workforce development at Jobs for the Future, led the asset-mapping process and writing in Aurora, with crucial support from Amy Loyd, program director for the Pathways Initiative. Nancy Hoffman, vice president and senior advisor at JFF, was a critical thought partner in the mapping and writing process and co-leads the Pathways to Prosperity Network with Robert Schwartz of the Harvard Graduate School of Education.

TABLE OF CONTENTS

Executive Summary.....	v
Background.....	1
Illinois State Environment.....	2
State Assets	2
State Challenges	3
Regional Analyses	4
Aurora	11
Overall Assets and Challenges: Leadership and Collaboration	11
Aurora Pathways Framework Analysis.....	14
Intermediaries.....	14
Employer Engagement.....	15
9-14 (and 6-20) Pathways	18
Career Advising	20
Conclusion: Opportunities and Questions for Consideration.....	22
Appendix I. Organizations Represented in the Interviews.....	24
Appendix II. Chicago MSA Labor Market Tables	26
Appendix III. Aurora Four-county Labor Market Tables.....	27
Appendix IV. Data on IT Job Postings in Aurora, IL, Region.....	31
Appendix V. Manufacturing Firms Within a 10-mile radius of Aurora District 129, GIS Data	40
Appendix VI. Inventory of Postsecondary Institutions and Disciplines	41
Endnotes.....	48

EXECUTIVE SUMMARY

BACKGROUND

In 2011, the Pathways to Prosperity Project at the Harvard Graduate School of Education released a report, *Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century*, challenging our excessive focus on the four-year college pathway. The report presented the need to create additional pathways that combine rigorous academics with strong technical education to equip the majority of young people with the skills and credentials to succeed in our increasingly challenging labor market. A group of committed Aurora leaders in business and education along with their State of Illinois partners have risen to that challenge and engaged Jobs for the Future and the Harvard Graduate School of Education to assess their readiness and help to pursue opportunities for collective action.

STATE ASSETS AND CHALLENGES

Three years of state planning and investment in the Illinois Pathways to Prosperity initiative have led to a solid, thoughtfully designed foundation for launching partnerships for regional pathways. Backing up the state initiative are commitments from the governor and influential business leaders who have now attracted and aligned significant resources for implementation through elements of the state's \$42.8 million Race to the Top award.

A cornerstone of the state's strategy is public-private working groups designed to scale up P-20 programs of study and nine Learning Exchanges that will support high-demand industries in science, technology, engineering, and mathematics (STEM) industry clusters. The working groups and Learning Exchanges serve as state-level organizing tools to better coordinate investments around industry and student needs, building out critical resources for STEM programs of study and model P-20 programs.

Applying the state's considerable assets locally will require clarifying state and local intermediary roles, coordinating state-level and regional employer relationships, and developing regional intermediary capacity with an eye toward replication in additional sites. Roles for direct interaction among employers, students, and school and postsecondary staff will need the most immediate clarification and coordination between the state and regional levels.

Long-term sustainability is also a challenge since the time-limited Race to the Top funding will be instrumental in supporting state and local leaders as they begin to implement Pathways to Prosperity models. State and local leaders will need to identify

sustainable funding to support local institutions and pathways initiatives that serve public and private ends.

LABOR MARKET OVERVIEW: DUPAGE, KANE, KENDALL, AND WILL COUNTIES

While the larger Chicago regional economy deeply affects DuPage, Kane, Kendall, and Will counties, as a group they have their own mix of industry dynamics. In these four target counties, the largest industries are retail trade, government, health care and social assistance, and manufacturing, each employing over 100,000 people.

These industries are followed by administrative support; professional, scientific, and technical services; and finance and insurance, all of which the BLS predicts to have rapid growth over the next decade. Along with health care and social assistance, each of these relatively large industries is predicted to have over 20 percent employment growth by 2022. Notably, these growth industries share important cross-cutting IT functions that will likely make IT skills increasingly important across a variety of occupations. Also, some careers within rapidly growing categories offer low wages and only limited career paths, while others offer much better career prospects.

Industries Ranked by Job Postings, DuPage, Kane, Kendall, and Will Counties

Description	2012 Jobs	2022 Jobs	% Change	2012 Earnings	2011 Establishments	Job Postings 9/1/11 - 8/31/12
Health Care and Social Assistance	121,330	151,202	25%	\$53,848	5,266	15,168
Manufacturing	111,312	101,425	(9%)	\$74,804	3,876	9,780
Professional, Scientific, and Technical Services	99,758	120,781	21%	\$71,464	10,083	8,964
Retail Trade	128,212	132,712	4%	\$31,874	6,135	7,863
Finance and Insurance	87,733	110,247	26%	\$59,254	3,712	7,488
Admin Support, Waste Mgmt and Remediation	101,082	122,629	21%	\$36,586	4,184	4,726
Transportation and Warehousing	52,130	60,916	17%	\$54,085	3,057	4,233

Educational Services (Private)	30,683	36,418	19%	\$36,281	822	4,200
Accommodation and Food Services	76,792	88,713	16%	\$19,872	4,070	4,160
Information	19,886	20,696	4%	\$72,379	938	2,303

Source: EMS/, Burning Glass Labor Insight

County Areas: DuPage, Illinois (17043), Kane, Illinois (17089), Kendall, Illinois (17093), Will, Illinois (17197)

TARGETING IT, HEALTH CARE, AND MANUFACTURING

This assessment highlights Aurora's career opportunities in health care and manufacturing as industries, and in IT as a *set of occupations* that are central to many industries. Based on job-postings data, IT occupations are in large demand for the area's professional, scientific, and technical services industry, but they are also in large demand in manufacturing, health care, and other sectors. Beyond this data, Aurora's public and private resources and momentum around IT careers also help make IT pathways a prominent candidate for development. It could add an important pathway option next to existing school initiatives in health care and manufacturing.

AURORA'S OVERALL ASSETS AND CHALLENGES

The Aurora region benefits from a core group of leaders who are actively driving collaboration across the stakeholder groups critical to a comprehensive Pathways to Prosperity initiative. This group, originally convened by Aurora Mayor Tom Weisner to address student workforce readiness, includes the top leaders or designees of the West Aurora School District, Waubensee Community College, the Aurora Regional Chamber of Commerce, and other public agencies and school districts in the City of Aurora, as well as one of the region's state representatives, Linda Chapa LaVia, who plays a leadership role for education in the Illinois General Assembly. This team has built significant public will and high expectations for the Aurora Pathways to Prosperity initiative.

In addition to the core Pathways to Prosperity team, there are several precedents for collaboration between K-12 and postsecondary institutions in the region. Waubensee Community College, Aurora University, the College of DuPage, and Northern Illinois University also have strong programs that currently do, or could support pathways. Aurora University's partnership with four school districts in a planned John C. Dunham STEM Partnership School is an example of an innovative design with a strong bi-partisan commitment to overcoming K-12/postsecondary divides.

The region faces a challenge in setting priorities for and sequencing initiatives in the IT, health care and manufacturing industry sectors under consideration. Aurora will need to weigh the region's capacity to implement new, high-quality initiatives on tight timeframes against the advantages of immediately enlisting business partners across multiple sectors and offering more choices to students. An additional overall challenge will be designing initiatives that match needs and resources across four different school districts and counties.

INTERMEDIARIES

Several institutions could perform intermediary functions in Aurora, but roles would have to be defined and distributed and capacity built. As one foundation interviewee noted, "Someone has to make this their day job" in order to execute the complex Pathways to Prosperity functions, which require a variety of skills and relationships. There will also be a need for focus to make a high level of coordination possible. The foundation's recognition of need and its interest in considering support of a dedicated intermediary leader is an important asset, giving Aurora the ability to consider a variety of strategies. In addition, the state can provide support and the mayor of Aurora has lent important leadership.

The next ingredient needed is a clear commitment from and coordination among employers. This is likely to come in the form of sectoral partnerships for specific regional career pathways and a thoughtful strategy for implementation. Because Aurora's interests are in IT, advanced manufacturing, and health care, the region will need to consider strategies for developing intermediary capacity to serve those markets.

Incongruous school, county, and city borders set up special challenges for the Aurora region. The fact that the city and its school districts, including the community colleges, cut across multiple counties, and that regional education boundaries and technical centers are not centered in the city, make it more difficult to identify intermediaries that can serve (and be supported by) the various jurisdictions. Given the jurisdictional challenges, it could be beneficial to establish a new Aurora regional intermediary in order to facilitate the buy-in of multiple stakeholders across jurisdictions. A new organization could be modeled after groups, such as the Boston Compact for schools or the Alignment Nashville framework that Aurora leaders have been reviewing.

For the intermediary design, it is also critical that regional employers have some "skin in the game": this means not only contributing financially but also being ready and willing to train young people for their labor needs. Finding the right mix of public dollars and employer contribution supporting career pathways is a challenge, but employers say

they are motivated to work with young people for two reasons: They need trained and skilled workers and they want to help build a healthy regional economy.

EMPLOYER ENGAGEMENT

Overall, employers in the region demonstrate a combination of interests in Pathways efforts: an altruistic interest in supporting local youth and a self-interest in filling urgent workforce needs in manufacturing and other industries. At the same time, some employers are skeptical about whether young people want hands-on skills and also about whether schools are providing their graduates with the strong leadership qualities required by employers.

The Valley Industrial Association, one of the region's associations primarily representing northeastern Illinois manufacturers, understands the challenges inherent in building student interest in manufacturing and starting appropriate skills training early enough.

VIA has experience and a vested interest in playing intermediary roles in connection with employer convening and work-based learning. It also has the support of the statewide Illinois Manufacturers' Association, which is the lead entity for the Manufacturing STEM Learning Exchange.

Like the Illinois Manufacturers' Association in manufacturing, CompTIA, the lead entity for the IT STEM Learning Exchange at the state level, will be an important asset at the Aurora regional level. Yet Aurora will need to organize local employers for this sector. The city and the Aurora Chamber have helped convene IT sector employers and IT employers. The IT employer group is new and concerned with issues beyond workforce and education. As such, Aurora will need to explore how that group might support IT career pathway development.

In health care, West Aurora High School, Waubensee Community College, and several other institutions have developed programs to prepare students for health care careers. More dialogue with health care employers is needed to improve and coordinate among those programs and develop efficient systems for work-based learning.

Aurora's mayor has organized a Business Roundtable that is convening leadership across sectors around several economic development priorities, including workforce development. The leadership of the Workforce Development Team includes the Aurora Chamber, with representation from the City of Aurora, Waubensee Community College, VIA, and others. Currently the team's work centers on three priorities: inventory existing regional/local programs available through postsecondary education institutions; initiate Aurora Regional Pathways to Prosperity with the completion of the research; and

increase parent and counselor participation in the Manufacturing Career Awareness Fair.

Another working group of the Mayor's Business Roundtable is the Technology Task Force, which consists of public and private partners with expertise in a variety of technology areas, including software, networks, data, and strategy. This group has recently launched a new independent, not-for-profit organization to provide non-municipal access to Aurora's robust fiber optic network. This effort will give educational institutions the opportunity to collaborate and gain high-speed access to Internet resources and technology solutions that are now limited by bandwidth cost.

9-14 (AND 6-20) PATHWAYS

While all seven of the public and private postsecondary institutions in Aurora provide some career-oriented degrees and certifications, three appear to be the most engaged with the school districts to create career pathways: Waubonsee Community College, the College of DuPage, and Aurora University. All four of Aurora's school districts also have valuable assets that could contribute to the region's Pathways to Prosperity project. Dual enrollment programs are in place between all of the region's schools and Waubonsee Community College or College of DuPage.

Waubonsee Community College's geography and partnerships with the districts in three of the counties, as well as its strategic links to other Aurora community leaders, make it central to planning a Pathways to Prosperity effort. Waubonsee has played a convening role with the school districts in other ways and has long-term relationships with the region's Chambers of Commerce, economic developers, the local Workforce Investment Board, and the Valley Industrial Association.

In the eastern part of the region, the College of DuPage, the state's largest community college, has valuable expertise and resources, as demonstrated through its partnerships and dual-credit programs with the Indian Prairie School District 204. IT industry partners report that the College of DuPage also has an outstanding IT department and that it emphasizes industry credentials and builds its curriculum around many of the IT credentials most desired by employers.

Aurora University has 2+2 programs that connect community college students to four-year degrees, and 40 percent of its 1,000 students come from Waubonsee Community College. At the K-12 level, the university's partnership with the four school districts in a planned STEM partnership school sets a precedent for collaboration, while also highlighting a need for sequencing programs for 9-12 graders.

Some CTE teachers and counselors participate in employer-based externships through the VALEES program. Teachers and counselors become familiar with modern workplaces and the knowledge and skills students need in order to succeed in them. The chamber, employers, and foundations are interested in supporting a greater array of teacher externships.

A key challenge, common across the country, is that CTE has been largely dismantled over the last decade in comprehensive high schools that have focused on teaching to and raising scores on standardized tests. CTE offerings in comprehensive high schools appear to be uneven. There are excellent programs-health care at West Aurora, for example-but other programs at the same school are outdated, and the CTE director reports that the IT curriculum must be more comprehensive. While CTE courses are available in the region, Aurora's regional CTE centers-Fox Valley and Indian Valley are a long commute from schools.

CAREER ADVISING

The Aurora region has several pockets of strength when it comes to exposing young people to the world of work. Some schools offer very popular career days, and employers, high schools, and postsecondary institutions collaborate to organize job fairs. Others schools highlight and assess workforce readiness skills or use prepackaged software for guidance. And the State makes guidance tools available through the STEM Pathways Learning Exchanges and counseling websites.

At the same time, it is not clear that there are systemic commitments to a sequence of advising activities and scaffolding to connect career information to experiences in the workplace. And despite increasing outreach to parents, many of them know little about the options and careers for their children's futures, and tend to think that white-collar jobs are the only route to success. Many parents do not know about opportunities for or the conditions of careers in manufacturing, for example, while others do not regard postsecondary credentials as necessary or as a possible option for their children.

OPPORTUNITIES AND KEY QUESTIONS FOR PLANNING

Planning for and investing in Pathways to Prosperity in Illinois, the energetic leadership of Aurora's core Pathways team, and the wide community and employer support for the initiative indicate strong potential for implementing an exemplary model in the region. The Aurora team is positioned to address important community challenges and create a model with lessons for replication across the state. That team has begun intermediary structure design, regional employer research, audits of high school and postsecondary pathway course offerings, public relations planning, evaluation frameworks, policy

reviews, and next steps to develop IT, health care, and advanced manufacturing career pathways. With this extensive activity planned or underway, the asset-mapping team identified four types of key question to address.

Intermediary Leadership

- What organizations or individuals could lead regional implementation of the initiative? What capacity and support would they have to coordinate the four elements of the Pathways model?
- How should the regional intermediary and state-level Learning Exchanges define and coordinate their roles, particularly for employer engagement?

Scale

- What scale of initiative is the Aurora region prepared to create? How many industries, schools, and young people should it prepare and for what jobs?
- How should the team define the region for its initial planning? How should employers who are outside or not beholden to the participating jurisdictions be included in planning and in offering opportunities for students?

Industry Targets and Organizing

- How should the community leadership prioritize implementation steps among its targeted IT, health care and manufacturing pathways? How should their employer leadership be organized?
- What employer leadership could be organized for the IT pathway? How should pathway planning extend beyond IT industry firms themselves to incorporate and address the many opportunities in other industries?
- Could the city's proposed Tech Center act as an incubator, linking community and youth IT training with existing and hoped for IT business and job growth?

Public Relations and Policy

- How might the region use its widely engaged community leadership in a campaign to change public perceptions of regional career opportunities?
- How could legislative support and public sector leadership help the region create employer incentives and encourage secondary-postsecondary collaboration?
- What performance measures will be used to monitor progress and give institutions valuable feedback to improve educational and career outcomes?

BACKGROUND

The Pathways to Prosperity asset-mapping process for Illinois serves three complementary purposes. First, it assesses resources in Aurora and Chicago for building grades 9-14 pathways linked to high-demand careers.ⁱ Second, it assists those regions in their design and planning for implementing pathways. Third, it takes advantage of the state's significant Race to the Top investment in designing and establishing a statewide pathways infrastructure.ⁱⁱ

The report is organized around the four levers of the Pathways to Prosperity framework:

- **Employer Engagement:** Employers committed to providing learning opportunities at the workplace and supporting the transition of young people into the labor market;
- **9-14 Pathways (with 6-20 links in Aurora):** Career pathways with clear structures, timelines, costs, and requirements linking and integrating high school, community college and university curricula, and aligning both with labor market needs;
- **Career Guidance:** An early and sustained career-information and advising system strong enough to help students and families make informed choices about educational career paths; and
- **Intermediaries:** Local or regional intermediary organizations to provide the infrastructure and support for the development of such pathways.

The asset map also pays attention to such issues as labor market demands that can help inform the selection of pathway themes and priorities, and it highlights challenges posed by geography, transportation, and fiscal environment. It furthermore examines resources that can support the design and implementation of pathways, the capacity and commitment of leadership, and the state environment affecting the capacity of the regions to move forward.

ILLINOIS STATE ENVIRONMENT

STATE ASSETS

Three years of state planning and investment in the Illinois Pathways to Prosperity initiative have led to a solid, thoughtfully designed foundation for launching partnerships for regional pathways. Backing up the state initiative are commitments from the governor and influential business leaders—particularly the Illinois Business Roundtable—and key state agencies—the Illinois Department of Commerce and Economic Opportunity, the Illinois State Board of Education, the Illinois Community College Board, the Illinois Board of Higher Education, the Illinois Department of Employment Security, and the Illinois Student Assistance Commission, among others. These partners have now attracted and aligned significant resources for implementation through elements of the state’s \$42.8 million Race to the Top award.

A cornerstone of the state’s strategy is public-private working groups designed to scale up P-20 programs of study and nine Learning Exchanges that will support high-demand industries in science, technology, engineering, and mathematics (STEM) industry clusters. The working groups and Learning Exchanges serve as state-level organizing tools to better coordinate investments, resources, and planning around industry and student needs. They aim to build out critical resources for STEM programs of study and model P-20 programs. These will include high-quality, industry-reviewed curricula, as well as work-based learning experiences connected to sequenced career pathway coursework aligned across secondary and postsecondary levels. The programs of study will include industry-recognized stackable credentials and early college opportunities. Intended outcomes are to improve academic achievement, increase graduation rates, and improve transition rates to postsecondary education and employment.

The state has awarded \$430,000 for implementation “scopes of work” to each of five sector-based STEM Learning Exchanges, including Pathways to Prosperity priorities in health sciences, information technology, and manufacturing, as well as two others, one in agriculture, food, and natural resources and another in research and development. The state also created smaller planning scopes of work with Learning Exchanges in architecture and construction, finance, energy, and transportation, distribution, and logistics.

Among the state assets for building pathways is the Work-Based Learning Working Group. It is developing P-20 models for work-based learning and identifying incentives, policy recommendations, and supports to build capacity and increase the availability of such experiences. The working group includes representatives from state agencies, P-20 education institutions, industry associations, after-school programs, and workforce

boards, among others. It has drawn from a variety of Illinois models, such as the Youth Partnership Toolkit produced by the Chicago Workforce Investment Council and the Metropolitan Chicago Healthcare Council, as well as the National Academy Foundation and Wisconsin-based apprenticeship models.

STATE CHALLENGES

Applying the state's considerable assets locally will require clarifying state and local intermediary roles, coordinating state-level and regional employer relationships, and developing regional intermediary capacity with an eye toward replication in additional sites.

Roles for direct interaction among employers, students, and school and postsecondary staff will need the most immediate clarification. Because important business and industry groups are organized at the state level, state and local leaders must determine the formation of local employer leadership groups and how those will relate to the state working groups and Learning Exchanges. Also, secondary school or college staff members who have relationships with local employers or wish to create them may need systems to coordinate employer outreach with the Learning Exchanges and with neighboring schools that are accessing Learning Exchange referrals.

Long-term sustainability is a significant challenge. Race to the Top funding will be instrumental in supporting state and local leaders as they begin to implement Pathways to Prosperity models. However, the federal funding is designed to encourage private-sector investments, and its matching funds are time limited. State and local leaders will need to identify sustainable funding to support local institutions and pathways initiatives that serve both public and private ends. Broader budget challenges will constrain the state's ability to expand the model across Illinois unless it can develop new sources, strategies, or efficiencies for investment in college- and career-readiness reforms.

On the positive side, the state is coordinating a new U.S. Department of Labor Workforce Innovation Fund grant of \$12 million, as part of Illinois Pathways, and the Manufacturing STEM Learning Exchange. This demonstrates how the Learning Exchanges will be vehicles for coordinating a variety of public-private investments moving forward.

REGIONAL ANALYSES

Aurora and Chicago will be the first two regions to implement the Pathways to Prosperity initiative model in Illinois.

In Chicago, with its massive and complex education system, Pathways to Prosperity centers initially on the Chicago Public Schools, and specifically on its Early College STEM high schools project.ⁱⁱⁱ

In Aurora, Pathways to Prosperity leaders have identified the asset-mapping region as the four Aurora school districts and the four counties in which they operate: DuPage, Kane, Kendall, and Will, with downtown Aurora in Kane County as the hub of activity. These counties are part of the Greater Chicago Metropolitan Statistical Area, which also includes Cook, DeKalb, Grundy, and McHenry counties.

All these counties operate in the larger environment of the Greater Chicago labor market but with distinct differences detailed below.

Labor Market Overview

The Chicago Metropolitan Statistical Area has a population of over 10 million, the third largest in the nation, following Los Angeles and New York. While the region's population grew overall in the last decade, its "collar counties"—DuPage, Kane, Kendall, Lake, McHenry, and Will—grew exponentially from 2000 to 2007. Kendall County was the nation's fastest-growing county during this time.^{iv}

Within the region's growth, the Latino population grew by almost 340,000, or more than 24 percent, between 2000 and 2007. Kendall County had the greatest percentage growth of Latinos—278 percent. The Chicago Metropolitan Agency for Planning (CMAP) recently estimated that one in every five residents of the region is Latino.^v

According to the same CMAP workforce report, the top five industry sectors in the northeast Illinois region in 2007 were: professional and business services (more than 17 percent of jobs); health and education (13 percent); government (12 percent); manufacturing (19 percent) and retail (11 percent). Sixty-four percent of the region's jobs were located in Cook County, 15 percent were in DuPage County, and 21 percent were in the other five counties covered by the CMAP.^{vi} At an occupational level, the Illinois Department of Economic Security listed the top five occupations in the Chicago area for 2010 as office and administrative support, sales, production, transportation, and food service workers.^{vii}

Comparing “Real Time” and Projected Growth

Given the dynamic nature of the U.S. economy, the Pathways to Prosperity asset mapping augmented these labor market data with a 10-year employment outlook for 2022, current earnings, and the number of establishments for each industry, as well as the latest “real time” labor market information from job postings for the year beginning September 1, 2011. Each data element provides a lens on the labor market; taken together, seemingly contradictory data from these multiple lenses can generate insights, questions, and dialogue with employers. For instance, the 10-year projections based on historical data suggest a long-term decline of manufacturing, while 2012 job postings rank manufacturing firms as the third-largest industry in terms of recruiting for the Chicago MSA and the second largest recruiter for the four-county sub-region. Contradicting traditional projections, this suggests a recent and critical reversal of the long-term trend for manufacturing.

The Chicago MSA

Using 2012 data from Economic Modeling Specialists, Inc. (EMSI) and the Bureau of Labor Statistics (BLS) for the eight-county Chicago MSA, the health care and social assistance industry offers the largest number of jobs, employing over half a million people. The government, retail trade, professional, and scientific and technical services sectors follow. Finance and insurance, administrative support and waste management, and manufacturing also have substantial employment in the region, with well over 300,000 people working in each industry in 2012 (see *Table 1*).

Based on historical factors that do not include recent hiring patterns, the Bureau of Labor Statistics predicts that the largest employment growth for the Chicago region will occur in health care, professional services, and finance and insurance, each with over 20 percent projected growth. Job-posting patterns from September 2011 to August 2012—the most current data available on the labor market—corroborate some of these employment strengths as regional employers in health care, professional services, and finance and insurance are indeed advertising for employees more than other sectors. The more recent data contradicts BLS projections in manufacturing, however. While BLS projects a continued employment decline for manufacturing, job-posting data suggest an important shift in this trend with manufacturing employers among the top three advertisers for new employees in the past year.

The Chicago Metropolitan Agency for Planning has conducted another valuable analysis by industry cluster, looking at clusters of interrelated industries and value chains.^{viii} By this analysis, 2007 employment was largest in what CMAP defines as the business and financial services cluster, while the manufacturing super-sector ranked third, and

information technology and telecommunications ranked seventh. *See Appendix II for additional detail about these industries and the largest employers in the Chicago MSA.*

Table 1.
Industries Ranked by Job Postings, Chicago MSA

Description	2012 Jobs	2022 Jobs	% Change	2012 Earnings	2011 Establishments	Job Postings (91/11 - 8/31/12)
Health Care and Social Assistance	531,767	652,005	23%	\$51,267	19,330	53,179
Professional, Scientific, and Technical Services	383,057	460,052	20%	\$85,434	34,166	51,162
Manufacturing	339,710	306,749	(10%)	\$74,022	11,338	34,356
Finance and Insurance	349,797	426,939	22%	\$90,905	13,228	33,494
Retail Trade	403,277	412,794	2%	\$30,755	21,933	24,217
Educational Services (Private)	158,231	195,591	24%	\$43,042	2,959	19,580
Admin Support and Waste Mgmt and Remediation	362,708	433,147	19%	\$35,343	12,274	17,350
Transportation and Warehousing	215,198	246,819	15%	\$55,640	8,566	17,094
Accommodation and Food Services	305,275	348,201	14%	\$22,681	15,826	15,264
Information	82,547	85,554	4%	\$84,081	3,714	12,310
Real Estate and Rental and Leasing	200,232	227,154	13%	\$35,400	9,252	9,372
Government	466,405	491,481	5%	\$69,330	2,566	7,308
Other Services (except Public Administration)	276,848	322,582	17%	\$31,757	22,236	6,295
Wholesale Trade	190,675	198,042	4%	\$80,484	14,819	4,981
Construction	180,567	191,875	6%	\$57,950	22,297	3,237
Arts, Entertainment, and Recreation	102,351	120,028	17%	\$26,647	2,775	3,223
Management of Companies and Enterprises	75,022	82,036	9%	\$136,983	902	1,543
Utilities	10,552	10,052	(5%)	\$137,055	136	939
Mining, Quarrying, and Oil and Gas Extraction	1,789	2,056	15%	\$71,711	83	271
Agriculture, Forestry, Fishing and Hunting	8,806	7,667	(13%)	\$28,289	348	143
Unclassified Industry	3,541	1,822	(49%)	\$41,969	5,598	10

Total	4,648,355	5,222,646		1,290,745	224,346	315,328
--------------	------------------	------------------	--	------------------	----------------	----------------

Source: EMSI and Burning Glass Labor Insight

MSA County Areas: Cook, Illinois (17031), DeKalb, Illinois (17037), DuPage, Illinois (17043), Grundy, Illinois (17063), Kane, Illinois (17089), Kendall, Illinois (17093), McHenry, Illinois (17111), Will, Illinois (17197)

Aurora: DuPage, Kane, Kendall, and Will Counties

While the larger Chicago regional economy deeply affects DuPage, Kane, Kendall, and Will counties, as a group they have their own mix of industry dynamics. In these four target counties, the largest industries are retail trade, government, health care and social assistance, and manufacturing, each employing over 100,000 people.

These industries are followed by administrative support, professional, scientific, and technical services, and finance and insurance, all of which the BLS predicts to have rapid growth over the next decade. Along with health care and social assistance, each of these relatively large industries is predicted to have over 20 percent employment growth by 2022. Notably, these growth industries share important crosscutting information technology (IT) functions that will likely make IT skills increasingly important across a variety of occupations. Also, some careers within rapidly growing categories offer low wages and only limited career paths, while others offer much better career prospects.

Table 2.

Industries Ranked by Job Postings, DuPage, Kane, Kendall, and Will Counties

Description	2012 Jobs	2022 Jobs	% Change	2012 Earnings	2011 Establishments	Job Postings 9/1/11 - 8/31/12
Health Care and Social Assistance	121,330	151,202	25%	\$53,848	5,266	15,168
Manufacturing	111,312	101,425	(9%)	\$74,804	3,876	9,780
Professional, Scientific, and Technical Services	99,758	120,781	21%	\$71,464	10,083	8,964
Retail Trade	128,212	132,712	4%	\$31,874	6,135	7,863
Finance and Insurance	87,733	110,247	26%	\$59,254	3,712	7,488
Admin Support, Waste Mgmt and Remediation	101,082	122,629	21%	\$36,586	4,184	4,726
Transportation and Warehousing	52,130	60,916	17%	\$54,085	3,057	4,233
Educational Services (Private)	30,683	36,418	19%	\$36,281	822	4,200
Accommodation and Food Services	76,792	88,713	16%	\$19,872	4,070	4,160
Information	19,886	20,696	4%	\$72,379	938	2,303

Real Estate and Rental and Leasing	52,510	61,817	18%	\$29,146	2,402	2,092
Government	123,926	133,848	8%	\$62,028	871	1,525
Wholesale Trade	76,923	80,308	4%	\$82,415	5,409	1,446
Other Services (except Public Administration)	65,480	73,284	12%	\$32,535	5,355	1,333
Arts, Entertainment, and Recreation	27,123	32,247	19%	\$22,185	790	977
Construction	57,489	61,749	7%	\$60,555	8,029	854
Utilities	4,655	4,366	(6%)	\$147,600	59	396
Management of Companies and Enterprises	25,759	28,467	11%	\$134,947	269	351
Mining, Quarrying, and Oil and Gas Extraction	664	685	3%	\$87,627	38	157
Agriculture, Forestry, Fishing and Hunting	4,128	3,187	(23%)	\$28,807	166	51
Unclassified Industry	719	386	(46%)	\$42,105	1,147	N/A
Total	1,268,295	1,426,085	0.12	53,624	66,677	78,067

Source: EMSI, Burning Glass Labor Insight

County Areas: DuPage, Illinois (17043), Kane, Illinois (17089), Kendall, Illinois (17093), Will, Illinois (17197)

Examining employers' job-posting patterns between September 2011 and August 2012 sheds additional light on employment opportunities in these industries. Health care remains the region's top industry by this ranking. However, manufacturing is rising—it is the second most frequent advertiser for new workers—followed by professional services, retail trade, and finance and insurance. While most workers with IT skills are employed outside the strictly defined Information sector, that industry itself has risen to the top 10 for the region in terms of job postings.

CMAQ has also provided the four-county River Valley Region with an important analysis, which sheds light on employment using a cluster-based model. Of particular interest, it highlights employment and the top occupations in two clusters that regional planners are examining closely: information technology and manufacturing (specifically machinery manufacturing). *For more information, see Appendix III and the CMAQ analysis.*^{ix}

Targeting Information Technology, Health Care, and Manufacturing

This assessment highlights Aurora's career opportunities in health care and manufacturing as industries, and in IT as a *set of occupations* that are central to many industries. Based on job-postings data, IT occupations are in large demand for the area's professional, scientific, and technical services industry, and they are also in large

demand in manufacturing, health care, and other sectors. Last year in the four-county region, there were 1,915 IT job postings in professional and technical services firms, and the region's health care and manufacturing firms had over 700 IT job postings each. Beyond this data, Aurora's public and private resources and momentum around IT careers also help make IT pathways a prominent candidate for development. It could add an important pathway option next to existing school initiatives in health care and manufacturing.

Geography of Target Industries

School District 129 of West Aurora, covering North Aurora and portions of Aurora, Montgomery, and Sugar Grove, recently generated a useful resource for examining target-industry labor demand in the region. Using GIS mapping, it identified employers within a 10-mile radius of the school district to determine the makeup (industry type, size, location) of employers in close proximity to the district.^x

The GIS data suggest a note of particular significance to Aurora's Pathways to Prosperity planning. While the locations of health care and manufacturing firms with over 20 employees are spread relatively evenly across the 10-mile radius, technology businesses appear much more heavily represented to the east of Aurora, in DuPage County. As an example, the IT employer map in Figure 1 suggests a preponderance of employers near Naperville (to the right) compared to relatively few in Aurora (center). That contrasts with the more even distribution of health care employers in Figure 2. *For more information, see Appendix III.*

Figure 1.
IT Employer Locations Within a 10-mile Radius of Aurora District 129, GIS Data

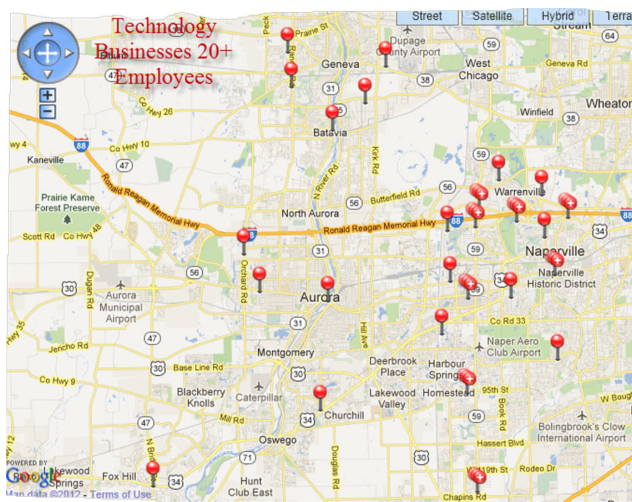
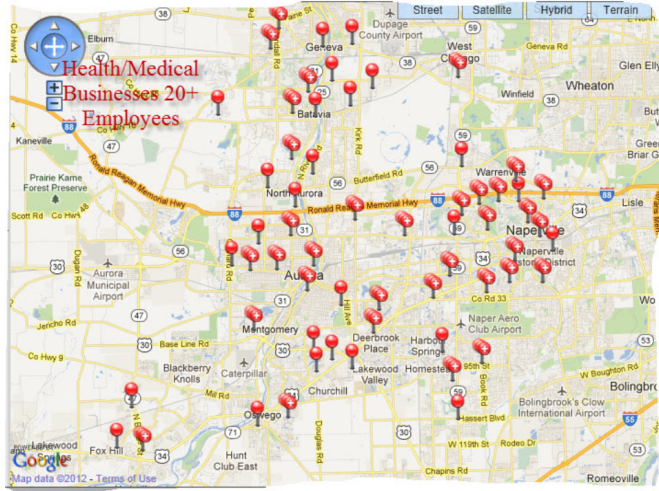


Figure 2.
Health Care Employer Locations Within a 10-mile Radius of Aurora District 129, GIS Data



AURORA

OVERALL ASSETS AND CHALLENGES: LEADERSHIP AND COLLABORATION

The Aurora region benefits from a core group of leaders who are actively driving collaboration across the stakeholder groups critical to a comprehensive Pathways to Prosperity initiative. This group, originally convened by Aurora Mayor Tom Weisner to address student workforce readiness, includes the top leaders or designees of the West Aurora School District, Waubonsee Community College, the Aurora Regional Chamber of Commerce, and other public agencies and school districts in the City of Aurora, as well as one of the region's state representatives, Linda Chapa LaVia, who plays a leadership role for education in the Illinois General Assembly. This team has built significant public will and high expectations for the Aurora Pathways to Prosperity initiative.

This mobilization has helped solidify a consensus on the need for a single point of contact for this work as well as a staff person dedicated to it full time. Local foundations have expressed interest in supporting Pathways to Prosperity. During the asset-mapping work, the research team raised the issue with the president and executive director of a leading local funder, and both acknowledged that a full-time staff director would be key to moving forward quickly. Pathways discussions also have included major employers and business associations, as well as workforce and community organizations, and they, too, recognize the urgency of better preparing young people as a prerequisite for economic growth and sustainability in the region. While it could be better connected to other efforts, the Valley Industrial Association reports that it is actively engaged in pathways planning and several IT employers also have begun organizing around the issue.

In addition to the core Pathways to Prosperity team, there are precedents for collaboration between K-12 and postsecondary institutions. Waubonsee Community College has growing dual-credit participation (800 students), an interest in early college designs that bridge and integrate grades 6 or 9 through grade 14, and a number of partnerships with area high schools for mounting industry career fairs, among other initiatives. Waubonsee has strong presidential leadership and a vice president for program development who has been successful in strategically responding to business and community needs. The regional Career and Technical Education (CTE) intermediary, Valley Education for Employment System (VALEES), which manages programs to engage employers with schools and teachers, is located on the Waubonsee campus. Aurora University, the College of DuPage, and Northern Illinois University also

have strong programs that could support pathways. Aurora University's partnership with four school districts in a planned John C. Dunham STEM Partnership School is an example of an innovative design and a strong commitment to overcoming K-12/postsecondary divides. This unique partnership school was made possible in part through recent bipartisan legislation that supports partnerships between public school districts and universities in their region.

Community mobilization is a challenge as well as an asset overall. Skepticism about change and improvement will emerge if early initiatives do not visibly benefit young people in Aurora's high schools.

The region also faces a challenge in setting priorities for and sequencing the introduction of initiatives in the industry sectors under consideration. The region offers opportunities for IT career pathways, as well as strong interest among and current activities with manufacturing employers. Health care is also a leading employer, and there are already strong secondary and postsecondary health care programs—for example, the Health Sciences Career Academy at West High School. The East Aurora School District cites career academies in IT and health sciences, as well as four other concentrations. These have large enrollments (all students select one career academy), although the current concentration is less intensive than envisioned in the Pathways to Prosperity framework.

Aurora will need to weigh the region's capacity to implement new, high-quality initiatives on tight timeframes against the advantages of immediately enlisting business partners across multiple sectors and offering more choices to students. Aurora leaders may consider planning both shorter- and longer-term initiatives and coordinating their different timelines with both employer and school partners. For instance, the region might develop an IT career pathway in year one, while expanding to advanced manufacturing and health care the following year.

The Aurora community's mobilization has generated out-of-the-box ideas that the community is considering carefully. An example is the potential transformation of the former Waubensee Community College building into a tech center that might function as a secondary education center, a business incubator, a community education resource, or some combination of all three. Related concepts are to leverage Aurora's specialty in fiber optic cable wiring as a tool for building more IT career preparation (and IT businesses), opening the question of whether such infrastructure advantages will simply foster more web use in schools or be leveraged into a major educational asset.

An additional overall challenge will be designing initiatives that match needs and resources across four different school districts and counties. School District 129 has committed its leadership and resources to driving the early initiative, and it is leading an audit of opportunities for partnership among the three other districts. Asset mapping

revealed interest and a genuine desire for collaboration among all the districts. Even so, it will take careful, sensitive, strategic leadership to build a coalition and hold it together.

While having fewer partners expedites planning and action, the geographic distribution of employment and target industry firms in the region is a further consideration in planning. As Districts 129's GIS mapping indicates, large numbers of employers are located in neighboring jurisdictions, adding to the benefits Aurora would gain from partnership or coordination across jurisdictions at both the K-12 and community college levels.

AURORA PATHWAYS FRAMEWORK ANALYSIS

INTERMEDIARIES

Several institutions could perform intermediary functions in Aurora, but roles would have to be defined and distributed and capacity built. As one foundation interviewee noted, “Someone has to make this their day job” in order to execute the complex Pathways to Prosperity functions, which require a variety of skills and relationships. There will also be a need for focus to make a high level of coordination possible.

The foundation’s recognition of need and its interest in considering support of a dedicated intermediary leader is an important asset, giving Aurora the ability to consider a variety of strategies. In addition, the state can provide support and the mayor of Aurora has lent important leadership. This helps create the environment of public and private support necessary for intermediaries to succeed.

The next ingredient needed is a clear commitment from and coordination among employers. This is likely to come in the form of sectoral partnerships for specific regional career pathways and a thoughtful strategy for implementation. Because Aurora’s interests are in IT, advanced manufacturing, and health care, the region will need to consider strategies for developing intermediary capacity to serve those markets. The intermediary will need to organize employer groups for IT and health care while expanding the existing manufacturing efforts. The intermediary’s resources, along with employer commitment, will suggest the sequence for implementing the pathways in the three sectors.

The Aurora Regional Chamber of Commerce has demonstrated leadership around workforce education issues and has an ability to convene employers from multiple sectors. However, no existing organization in the region has the capacity to take on many of the more time-intensive coordinating functions between employers and schools.

On the education side, Valley Education for Employment System (VALEES) shows potential for coordinating certain intermediary functions. It has partnerships with employers in a number of industries, notably health care and manufacturing. VALEES connects high schools and employers, makes a clear start to marshalling those assets for students at the high school level and into pathways to postsecondary credentials. VALEES, a regional delivery system established by the Illinois State Board of Education, also has some state support and the potential for more.

However, before VALEES could play a more significant intermediary role, it would face at least two challenges: its small budget and its large mandate. Its two part-time staff

members reach out to, and partner with, employers well beyond the local area and serve a large number of high school CTE programs beyond the Aurora school districts. VALEES serves two vocational centers that are a long commute for Aurora's young people. In addition, while VALEES supports programs of study, clusters may not articulate with high school offerings.

Incongruous school, county, and city borders set up special challenges for the Aurora region. The fact that the city and its school districts, including the community colleges, cut across multiple counties, and that regional education boundaries and technical centers are not centered in the city, make it more difficult to identify intermediaries who can serve (and be supported by) the various jurisdictions. Given the challenge of finding an existing institution that crosses all of these jurisdictions, multiple interviewees suggested that it could be beneficial to establish a new Aurora regional intermediary in order to facilitate the buy-in of multiple stakeholders across jurisdictions. A new organization could be modeled after groups, such as the Boston Compact for schools or the Alignment Nashville framework, which Aurora leaders have been reviewing.

For the intermediary design, it is critical that regional employers have some "skin in the game": this means not only contributing financially but also being ready and willing to train young people for their labor needs. Finding the right mix of public dollars and employer contribution supporting career pathways is a challenge, but those employers with whom the Pathways to Prosperity team met say they are motivated to work with young people for two reasons: they need trained and skilled workers, and they would like to help build a healthy regional economy.

EMPLOYER ENGAGEMENT

Overall, employers in the region demonstrate a combination of interests in Pathways efforts: an altruistic interest in supporting local youth and a self-interest in filling urgent workforce needs in manufacturing and other industries. At the same time, some employers are skeptical about whether young people want hands-on skills and about whether schools are providing their graduates with the strong leadership qualities required by employers. There was some discussion about whether technical or soft skills (e.g., leadership) are more important and also which of Aurora's schools are better positioned to teach these skills to students.

The Valley Industrial Association (VIA), one of the region's associations primarily representing northeastern Illinois manufacturers, understands the challenges inherent in building student interest in manufacturing and starting appropriate skills training early enough. VIA has experience and a vested interest in playing intermediary roles in connection with employer convening and work-based learning. The manufacturing group

plans to begin with outreach at the high school level and work back into grade school, eventually implementing applied math and physics as early as the fourth grade. VIA, Waubonsee Community College, the school districts, and economic developers conduct a large career fair serving many high school students.

VIA has the support of the statewide Illinois Manufacturers' Association, which is the lead entity for the Manufacturing STEM Learning Exchange. The relationship between the Illinois Manufacturers' Association and VIA can be a valuable asset for designing coordination strategies between employer groups at the state and regional levels. From a broader regional standpoint, VIA's limitation is that it cannot reach extensively beyond manufacturing career pathways.

Like the Illinois Manufacturers' Association in manufacturing, CompTIA, the lead entity for the IT STEM Learning Exchange at the state level, will be an important asset at the Aurora regional level. Yet Aurora will need to organize local employers for this sector. The city and the Aurora Chamber have helped convene IT sector employers and IT employers. The IT employer group is new and concerned with issues beyond workforce and education. As such, Aurora will need to explore how that group might support IT career pathway development. Some of the involved IT leaders also work with the city and Aurora schools around broadband usage and IT infrastructure.

Although the asset-mapping team did not interview a representative group of health care employers, the sector presents strong labor market demand and promising career pathways for young people in the region. West Aurora High School, Waubonsee Community College, and several other institutions have developed programs to prepare students for health care careers. More dialogue with health care employers is needed to improve and coordinate among those programs and develop efficient systems for work-based learning.

Health care employers in the region do not appear to be working on shared labor market needs, so there may be potential gains made from organizing them with the right resources of time and industry expertise.

The Fox Valley Trades Council has been a resource for career pathways in the building and construction trades for many years. Its well-developed apprenticeship programs and facilities have adapted to the industry's increasingly complex skills demands, and the trades leaders note that they require increasingly strong foundational skills from new apprentices. Because of the recession's effects on demand for trades workers, there are relatively few opportunities now, but the region should monitor this in the future.

Looking across multiple sectors, the Aurora Regional Chamber of Commerce has committed leadership, understands the workforce and education issues, and has

organized employers around them. The chamber has a mutually supportive relationship with manufacturing and health care employers, as well as with a number of technology employers, among others. It does not have extensive staffing for pathways work, but this could be built to support stronger business-education partnerships.

Aurora's mayor has organized a Business Roundtable that is convening leadership across sectors around several economic development priorities, including workforce development. The leadership of the Workforce Development Team includes the Aurora Chamber, with representation from the City of Aurora, Waubensee Community College, VIA, and others. Currently the team's work centers on three priorities: inventory existing regional/local programs available through postsecondary education institutions; initiate Aurora Regional Pathways to Prosperity with the completion of the research; and increase parent and counselor participation in the Manufacturing Career Awareness Fair.

Another working group of the Mayor's Business Roundtable is the Technology Task Force, which consists of public and private partners with expertise in a variety of technology areas, including software, networks, data, and strategy. This group has recently launched an independent, not-for-profit organization to provide non-municipal access to Aurora's robust fiber optic network. This effort will give educational institutions the opportunity to collaborate and gain high-speed access to Internet resources and technology solutions that are now limited by bandwidth cost.

Internships and Co-op Programs

Not all employers who met with the asset-mapping team offer internships for high school students, although the school districts reported a variety of work exposure activities and some co-ops and internships. Notably, 71 students at West Aurora High School have internships, and District 204 partners with VIA for job shadowing and mentoring and is starting Project Lead the Way internships. East Aurora requires that students complete 40 hours of community service before graduating, in part with the aim of mimicking the exposure of students to careers and workplaces. This indicates some capacity for organizing student work experiences, although the community service does not center on particular career pathways.

Construction apprentices trained by the union are well prepared for employment and easy to hire; several trades have well-resourced centers for training apprentices. However, there are so few job openings that the unions are not recruiting as actively as in the past, except for welding apprenticeships. At the same time, due to increasingly complex and computerized industry processes, recruits will need to be highly skilled when demand returns.

Efforts to engage students and employers should take into account Aurora's significant Hispanic community—over 40 percent of city residents. Aurora's Hispanic Chamber of Commerce is eager to contribute to creating opportunities for youth in the region.

9-14 (AND 6-20) PATHWAYS

Pathways to Prosperity promotes the linking and integration of grades 9 through 14 for several reasons. First, 10 years of data collected about the now nearly 300 early college high schools indicate that taking college-level courses in high school prepares underserved students for postsecondary education. Second, young students are motivated to achieve in these early college high schools by the promise of free college courses and the ability to accelerate credit attainment based on performance. Third, few recent high school graduates nationally are getting into and through high-value community college certificates and degrees due to the influx of well-prepared adult students (with work experience and Bachelor's degrees) into the colleges' high-demand programs. Programs integrating grades 9-14 are planned to give young people a predetermined program of study and a reserved place in the required community college courses. The Associate's degree is a useful first step on a career ladder that enables students to enter the labor market without precluding continuing their education to earn Bachelor's degrees, whether immediately or after experience in the labor market. With all this in mind, the Pathways to Prosperity team examined regional efforts to improve career pathways through high school and college. They have also had a strong interest in starting the career pathways initiative in middle school.

While many postsecondary institutions in Aurora provided some career-oriented degrees and certifications, three appear to be the most engaged with the school districts to create career pathways: Waubensee Community College, the College of DuPage, and Aurora University. Waubensee Community College's geography and partnerships with the districts in three of the counties, as well as its strategic links to other Aurora community leaders, make it central to planning a Pathways to Prosperity effort. Waubensee has played a convening role with the school districts in other ways and has long-term relationships with the region's Chambers of Commerce, economic developers, the local Workforce Investment Board, and the Valley Industrial Association. Waubensee is also part of a consortium of colleges, led by Harper College, that is developing advanced manufacturing programs. This Illinois Network of Advanced Manufacturing has received significant funding to build out and improve programs in precision machining, CNC, and other fields. It targets adult workers but will benefit other students as well and includes internships and job training on the way to Associate's and then four-year degrees.

In the eastern part of the region, the College of DuPage, the state's largest community college, has valuable expertise and resources, as demonstrated through its partnerships

and dual-credit programs with the Indian Prairie School District 204. IT industry partners report that the College of DuPage also has an outstanding IT department and that it emphasizes industry credentials and builds its curriculum around many of the IT credentials most desired by employers.

Aurora University has 2+2 programs that connect community college students to four-year degrees, and 40 percent of its 1,000 students come from Waubensee Community College. At the K-12 level, the university's partnership with the four school districts in a planned STEM partnership school sets a precedent for collaboration, while also highlighting a need for sequencing programs for 9-12 graders.

Beyond these highlighted colleges, the Aurora Regional Chamber of Commerce has inventoried all seven of the public and private postsecondary education institutions in the region. This inventory of the disciplines and credentials each college offers is found in the appendices.

All four of Aurora's school districts interviewed have valuable assets that could contribute to the region's Pathways to Prosperity project and have some pathway framework elements. Dual enrollment programs are in place between all of the region's schools and Waubensee Community College or College of DuPage. West Aurora High School, which offers 20 classes, is increasing enrollment in dual-credit courses; high school teachers teach most of the classes, with the exception that students go to the college campuses for health care courses (CNA training). It is not clear whether courses are in programs of study or are one-off selections. Despite the East Aurora School District's high poverty rate and high dropout rate (40 percent), leaders report both high participation in dual enrollment programs and the desire to see an increase in enrollment.

Beyond the traditional CTE courses, Project Lead the Way's pre-engineering training has started in the three high schools of Indian Prairie School District (District 204). The first courses were certified with the University of Illinois. PLTW teachers receive intensive training, and the 120 participating students will take part in internships with employers in their final year of coursework.

District 204 has also started iSTEM programs, with an initial program focused on robotics and research and development. About 300 students will be mentored, and the high schools have developed collaborations with Argonne National Labs, Fermi Labs, and Navistar to do research and development with the students. The district has had greater than anticipated participation by women. All three high schools hosted STEM Family Nights and are forming STEM booster clubs. With the new Common Core State Standards, they have made pre-engineering a focus and received grants from DART Corporation and Office Max.

Both Oswego School District (308) and East Aurora School District (131) have made using technology in the classroom a priority. Oswego District's goal is to have 50 percent of students earn at least 9 credits online by 2018, in part to support a second goal of having 3 out of 10 seniors engaged in all-day internships by that time. This could add significant flexibility for work experiences to seniors' school schedules. East Aurora also reports significant gains in terms of student access to technology (student iPads), and its improvement strategies focus on spreading access and on professional development for teachers to apply technology in teaching.

An additional strength of East Aurora School District is that it is home to the nation's largest and flagship Naval JROTC program. An employer focus group indicated strong interest in leadership development among young people and employers familiar with it valued the JROTC leadership curriculum.

A key challenge, common across the country, is that CTE has been largely dismantled over the last decade in comprehensive high schools that have focused on teaching to and raising scores on standardized tests. CTE offerings in comprehensive high schools appear to be uneven. There are excellent programs—health care at West Aurora, for example—but other programs at the same school are outdated, and the CTE director reports that the IT curriculum must be more comprehensive. While CTE courses are available in the region, Aurora's regional CTE centers—Fox Valley and Indian Valley—are a long commute from schools.

Some CTE teachers and counselors participate in employer-based externships through the VALEES program. Teachers and counselors become familiar with modern workplaces and the knowledge and skills students need in order to succeed in them. The chamber, employers, and foundations are interested in supporting a greater array of teacher externships.

Nationally, community colleges are reported to be over-subscribed and catering to adults with urgent needs, work experience, and savvy to choose high-demand programs leading to jobs. This squeezes out young people who have remedial needs, middling grades, and little experience.

CAREER ADVISING

The Aurora region has pockets of strength when it comes to exposing young people to the world of work. Some schools offer very popular career days, and employers, high schools, and postsecondary institutions collaborate to organize job fairs. Some schools offer Work Keys and the National Career Readiness Certificate to highlight and assess workforce readiness skills, such as dependability, communications, professionalism, teamwork, and problem solving.

Some schools use prepackaged software for guidance, and the state makes guidance tools available through the STEM Pathways Learning Exchanges and counseling sites (e.g., “What’s Next Illinois,” sponsored by the Illinois Student Assistance Commission). However, it is not clear that there are systemic commitments to a sequence of advising activities and scaffolding to connect career information to experiences in the workplace.

In the East Aurora School District, school guidance counselors expose ninth graders to multiple career pathways: broadcasting, information technology, performing arts, hospitality, engineering and construction, health sciences, and food service and recreational tourism. Every student selects one of these academies; the most popular are health science, food services and tourism, and engineering and construction. East Aurora High School instituted a career center to assist students with this selection 10 years ago. One or two counselors host the center, which augments the regular counseling department.

Despite increasing outreach to parents, many of them know little about the options and careers for their children’s futures, and tend to think that white-collar jobs are the only route to success. Many parents do not know about opportunities for or the conditions of careers in manufacturing, for example, while others do not regard postsecondary credentials as necessary or as a possible option for their children.

CONCLUSION: OPPORTUNITIES AND QUESTIONS FOR CONSIDERATION

Planning for and investing in Pathways to Prosperity in Illinois, the energetic leadership of Aurora's core Pathways team, and the wide community and employer support for the initiative indicate strong potential for implementing an exemplary model in the region. Aurora and the state will benefit substantially from working together to build out the model. The initiative presents an opportunity to address important community challenges, implement the vision of local and state leaders, and create a model with lessons for replication across the state.

To get there, state and local teams will need to work together closely to leverage their many assets and address the identified challenges. The core team in Aurora has begun planning that includes consideration of an intermediary structure, audits of regional high school and postsecondary pathway course offerings, regional employer research, public relations and communication planning, evaluation frameworks, policy reviews, and next steps to develop IT, health care, and advanced manufacturing career pathways.

With this extensive activity planned or underway, the asset-mapping team identified four types of key question to address: intermediary leadership; scale; industry targets and organizing; and public relations and policy.

Intermediary Leadership

- What organizations or individuals could lead regional implementation of the initiative? What capacity and support would they have to coordinate the four elements of the Pathways model?
- How should the regional intermediary and state-level Learning Exchanges define and coordinate their roles, particularly for employer engagement?
- Might the region build a VALEES special district for the four school-district region?

Scale

- What scale of initiative is the Aurora region prepared to create? How many industries, schools, and young people should it prepare and for what jobs?

- Could employers and schools leverage the video-conferencing technology and youth IT skills at the nearby Illinois Math and Science Academy to greatly expand students' exposure to workplaces?
- How should the team define the region for its initial planning? How should employers who are outside or not beholden to the participating jurisdictions be included in planning and in offering opportunities for students?

Industry Targets and Organizing

- How should IT career pathway planning extend beyond IT industry firms themselves to incorporate and address the many opportunities in other industries? What employer leadership could be organized for this pathway?
- Could the city's proposed Tech Center act as an incubator, linking community and youth IT training with existing and hoped for IT business and job growth?
- Is there an opportunity to implement more extensive manufacturing career programs tied to and coordinated among the VIA, Manufacturing Learning Exchanges, and Project lead the Way in the region?
- Given the many individual education partnerships with health care employers in the region, what organizations and strategies are most suited to organizing those employers for systematic pathways across institutions?

Public Relations and Policy

- How might the region use its widely engaged community leadership in a campaign to change public perceptions of regional career opportunities? In particular, how could leaders support parents and guidance counselors?
- What messaging is needed to gain support for the initiative, address likely concerns, and set reasonable expectations for success?
- How could legislative support and public sector leadership help the region create employer incentives to participate in and address barriers to creating pathway systems across the secondary and postsecondary levels?
- What outcome goals and performance measures will be used to monitor progress and give institutions valuable feedback to improve educational and career outcomes for the region's young people?

APPENDIX I.

ORGANIZATIONS REPRESENTED IN THE INTERVIEWS

A+ Foundation for West Aurora Schools
Alarm Detection Systems, Inc.
Aurora Economic Development Commission
Aurora Hispanic Chamber of Commerce
Aurora Regional Chamber of Commerce
Aurora University
Caterpillar Corporation
City of Aurora
Clear Perspective Advisors
ComEd/Exelon
Community Foundation of the Fox River Valley
CompTIA
Dunham Fund
East Aurora School District 131
Fox Valley Trades
(Plumbers & Pipefitters Local 501, SMW 265, DC 30, IBEW 461, Operators 150)
Illinois Manufacturers Association
Illinois Mathematics and Science Academy
Illinois Workforce Board
Indian Prairie School District 204
Kane County Department of Employment and Education
Kane County Office of Community Reinvestment
Katrina Smith
Kelmscott Communications
McKesson Pharmaceutical
Mitutoyo America Corporation
OnLight Aurora
Oswego School District 308
Peerless Corp.
Pilmer Real Estate, Inc.

Provena Mercy Medical Center – Provena Health
Quad County Urban League
Rico Enterprises, Inc.
River Valley Workforce Investment Board
Seize the Future
State Representative Linda Chapa LaVia
State Senator Chris Lauzen
Valley Education for Employment System (VALEES)
Valley Industrial Association (VIA)
Waubonsee Community College
West Aurora High School
West Aurora High School Students
West Aurora School District 129

APPENDIX II.

CHICAGO MSA LABOR MARKET TABLES

Employers with the Most Job Postings, Chicago MSA, September 1, 2011-August 31, 2012

Description	Job Openings
ADVOCATE HEALTH CARE	2,875
ADVOCATE HEALTH SYSTEM	2,622
SEARS	2,576
JP MORGAN CHASE COMPANY	2,534
UNIVERSITY OF CHICAGO	1,926
DELOITTE DEVELOPMENT LLC	1,889
ALLSTATE	1,811
CENTRAL DUPAGE HEALTH, INC.	1,721
PETCO ANIMAL SUPPLIES INCORPORATED	1,311
RUSH UNIVERSITY MEDICAL CENTER	1,291
THE PNC FINANCIAL SERVICES GROUP, INC.	1,238
BEST BUY	1,201
EDWARD HOSPITAL HEALTH SERVICES	1,125
INTERNATIONAL TRUCK ENGINE CORP.	1,099
UNITED STATES CELLULAR	1,080
NORTHERN TRUST	1,049
ADVENTIST MIDWEST HEALTH	1,018
BANK OF AMERICA	990
HYATT	979
UNIVERSITY OF CHICAGO MEDICAL CENTER	977

Source: EMSI

Top Employers, Chicago MSA

Business Name	Local Employees
Northwestern Memorial Hospital	6,002
Chicago Park District	6,000
Rush University Medical Center	5,792
Cook County Bureaus-health Svc	5,000
Prentice Hospital Vale	4,400

Source: EMSI

APPENDIX III.

AURORA FOUR-COUNTY LABOR MARKET TABLES

Employers with the Most Job Openings, Aurora Four-county Region,
September 1, 2011-August 31,2012

Description	Job Openings
CENTRAL DUPAGE HEALTH, INC.	1,713
EDWARD HOSPITAL HEALTH SERVICES	1,124
DELNOR COMMUNITY HEALTH SYSTEM	967
INTERNATIONAL TRUCK ENGINE CORPORATION	850
ADVOCATE HEALTH CARE	812
ADVOCATE HEALTH SYSTEM	784
JP MORGAN CHASE COMPANY	774
ADVENTIST MIDWEST HEALTH	766
PROVENA HEALTH	644
MCDONALD'S	642
PETCO ANIMAL SUPPLIES INCORPORATED	606
NAVISTAR	589
DEVRY UNIVERSITY	583
THE PNC FINANCIAL SERVICES GROUP, INC.	577
BEST BUY	533
MEIJER	457
SHERMAN HEALTH	390
OFFICE MAX	376
TCF FINANCIAL CORPORATION	374
BLOCKBUSTER INC.	344

Source: Burning Glass Labor Market Insight

County Areas: DuPage, Illinois (17043), Kane, Illinois (17089), Kendall, Illinois (17093), Will, Illinois (17197)

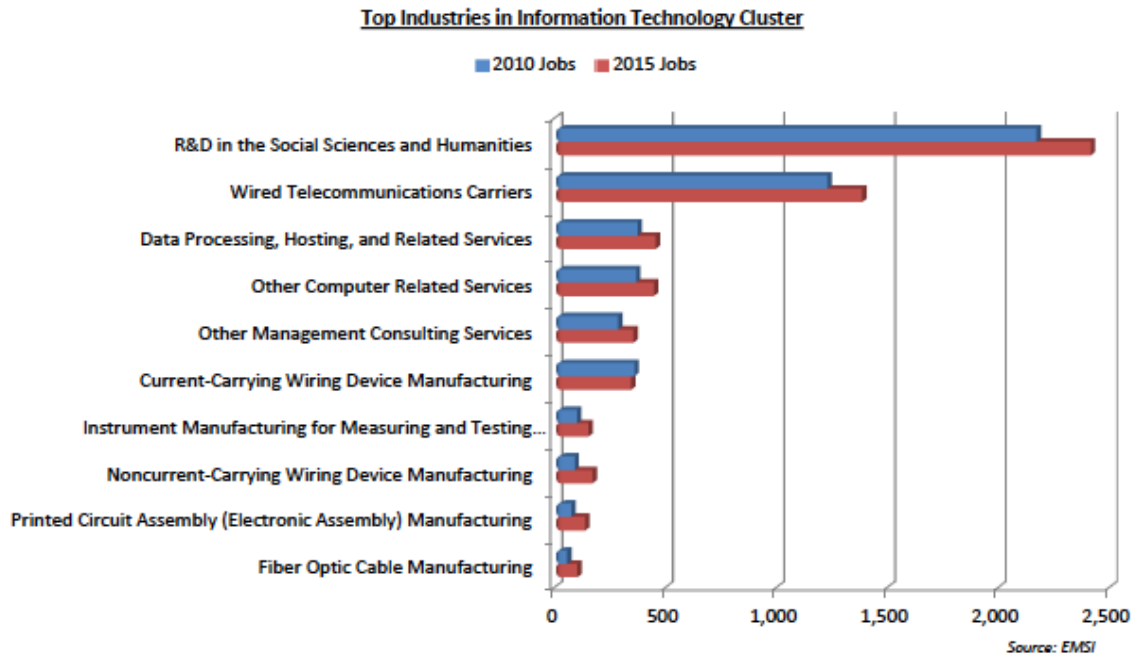
Top Employers, Aurora Four-county Region

Business Name	Local Employees
Molex Incorporated	2,045
Navistar International Corporation	2,000
Edward Hospital Inc.	1,689
Elmhurst Memorial Hospital	1,584
Adventist Hinsdale Hospital	1,512

Source: EMSI Complete Employment - 2012.2

INFORMATION TECHNOLOGY SECTOR, RIVER VALLEY REGION

Electronic/Computer Manufacturing and Computer-related Professional Services Drive the Information Technology Cluster



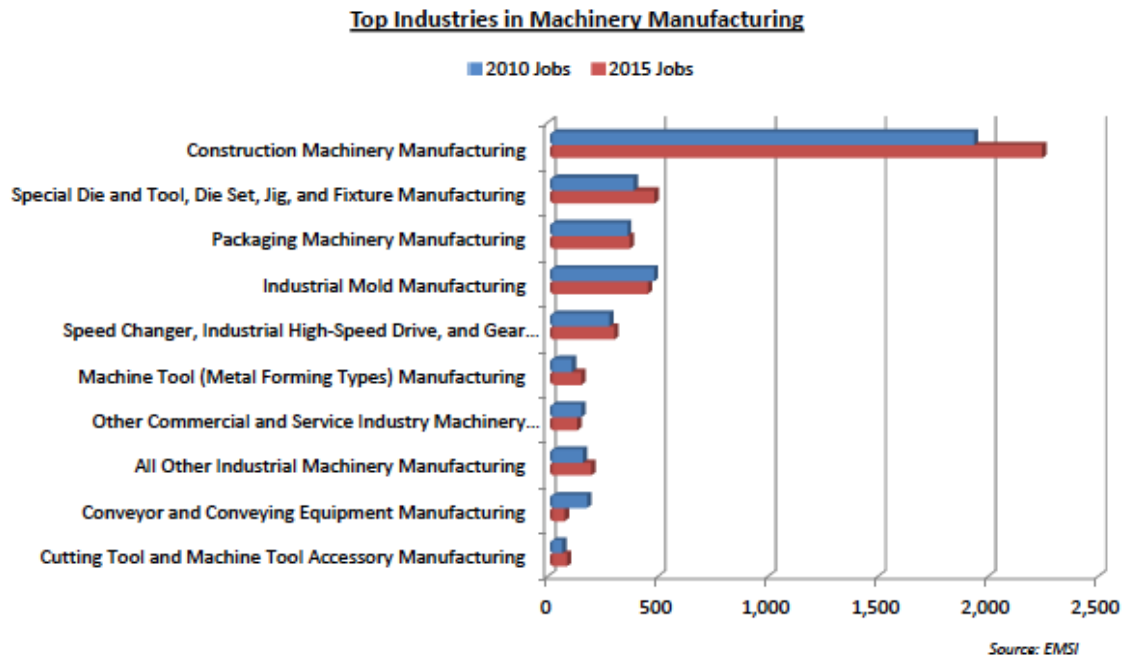
Top Occupations in Information Technology Cluster Require Advanced Studies and Experience

Occupation	2010 Jobs	2015 Jobs	Change	Hourly Earnings	Education Level
Network systems and data communications analysts	411	486	75	\$18.43	Bachelor's degree
Computer systems analysts	351	392	41	\$20.88	Bachelor's degree
Computer software engineers, applications	317	356	39	\$25.26	Bachelor's degree
Telecommunications equipment installers and repairers	411	449	38	\$20.88	Long-term on-the-job training
Management analysts	243	281	38	\$18.95	Degree plus work experience
Managers, all other	384	416	32	\$18.87	Work experience in a related field
Computer software engineers, systems software	401	427	26	\$27.26	Bachelor's degree
Business operation specialists, all other	423	444	21	\$19.09	Bachelor's degree
Computer support specialists	230	250	20	\$15.21	Associate's degree
Computer programmers	386	405	19	\$21.16	Bachelor's degree

Source: EMSI

RIVER VALLEY REGION MANUFACTURING TABLES

Machinery Manufacturing Industries Will Continue to Grow and Require Attention in the Region



Top Occupations in Machinery Manufacturing Cluster Require Some Training or Degree

Occupation	2010 Jobs	2015 Jobs	Change	Hourly Earnings	Education Level
Machinists	593	624	31	\$16.93	Long-term on-the-job training
Computer-controlled machine tool operators, metal and plastic	185	208	23	\$16.54	Moderate-term on-the-job training
Welders, cutters, solderers, and brazers	295	315	20	\$14.72	Long-term on-the-job training
Managers, all other	95	111	16	\$18.87	Work experience in a related field
Team assemblers	594	609	15	\$9.44	Moderate-term on-the-job training
Tool and die makers	137	148	11	\$23.31	Long-term on-the-job training
First-line supervisors/managers of production and operating workers	227	237	10	\$23.21	Work experience in a related field
Assemblers and fabricators, all other	126	134	8	\$9.91	Moderate-term on-the-job training
Mechanical engineers	120	127	7	\$26.94	Bachelor's degree
Industrial engineers	76	83	7	\$25.48	Bachelor's degree

Source: EMSI

APPENDIX IV.

DATA ON IT JOB POSTINGS IN AURORA, IL, REGION

The following tables provide a quick scan of data on IT-occupation job demand from Internet job postings in the four-county Aurora region for the past 12 months. The data are extracted from 9,435 job postings in the region for the 20 primarily IT-related jobs listed below. Compiled from Burning Glass Labor/Insight web tool in November 2012.

This data provide only one perspective on the IT labor market and should be compared to current employment data from traditional sources and interpreted in dialogue with employers.

IT and HIT Occupations Searched

- Audio and Video Equipment Technicians
- Computer and Information Research Scientists
- Computer and Information Systems Managers
- Computer Hardware Engineers
- Computer Network Architects
- Computer Occupations, All Other
- Computer Programmers
- Computer Systems Analysts
- Computer Systems Engineers/Architects
- Computer User Support Specialists
- Database Administrators
- Desktop Publishers
- Graphic Designers
- Medical Records and Health Information Technicians
- Multi-Media Artists and Animators
- Multimedia Artists and Animators
- Network and Computer Systems Administrators
- Software Developers, Applications
- Software Developers, Systems Software
- Technical Writers

**Top IT Occupations in All Job Postings
Four-county Region, Past 12 Months**

Description	Job Openings
Computer Programmers	1,980
Software Developers, Applications	1,813
Computer Systems Analysts	1,632
Computer Systems Engineers/Architects	933
Computer User Support Specialists	776
Network and Computer Systems Administrators	602
Database Administrators	533
Software Developers, Systems Software	359
Medical Records and Health Information Technicians	228
Computer and Information Systems Managers	145
Graphic Designers	138
Technical Writers	106
Computer Network Architects	91
Audio And Video Equipment Technicians	26
Computer Hardware Engineers	25
Computer and Information Research Scientists	20
Multimedia Artists and Animators	18
Desktop Publishers	10

Top Illinois Counties for IT Job Postings (plus Kendall and Will Counties)
Entire State, Past 12 Months

County	Job Postings
Cook, IL	38,155
DuPage, IL	8,089
Lake, IL	7,249
Sangamon, IL	6,664
McLean, IL	1,846
Peoria, IL	1,305
Saint Clair, IL	983
Kane, IL	884
	...
Will, IL	445
Kendall, IL	17

Distribution of IT Job Postings by Industry Sector
Four-county Region: DuPage, Kane, Kendall, and Will Counties,
Past and Previous 12 Months

Industry Sector code	Industry Sector	Total # of Postings [11/2011 - 10/2012]	% of Total Postings [11/2011 - 10/2012]	% of Total Jobs [11/2010 - 10/2011]
54	Professional, Scientific, and Technical Services	1,915	27.7%	30.0%
62	Health Care and Social Assistance	761	11.0%	11.0%
31-33	Manufacturing	701	10.1%	8.0%
56	Administrative and Support and Waste Management and Remediation Services	657	9.5%	10.0%
44-45	Retail Trade	542	7.8%	7.0%
48-49	Transportation and Warehousing	458	6.6%	5.0%
51	Information	442	6.4%	8.0%
61	Educational Services	438	6.3%	5.0%
52	Finance and Insurance	309	4.5%	4.0%

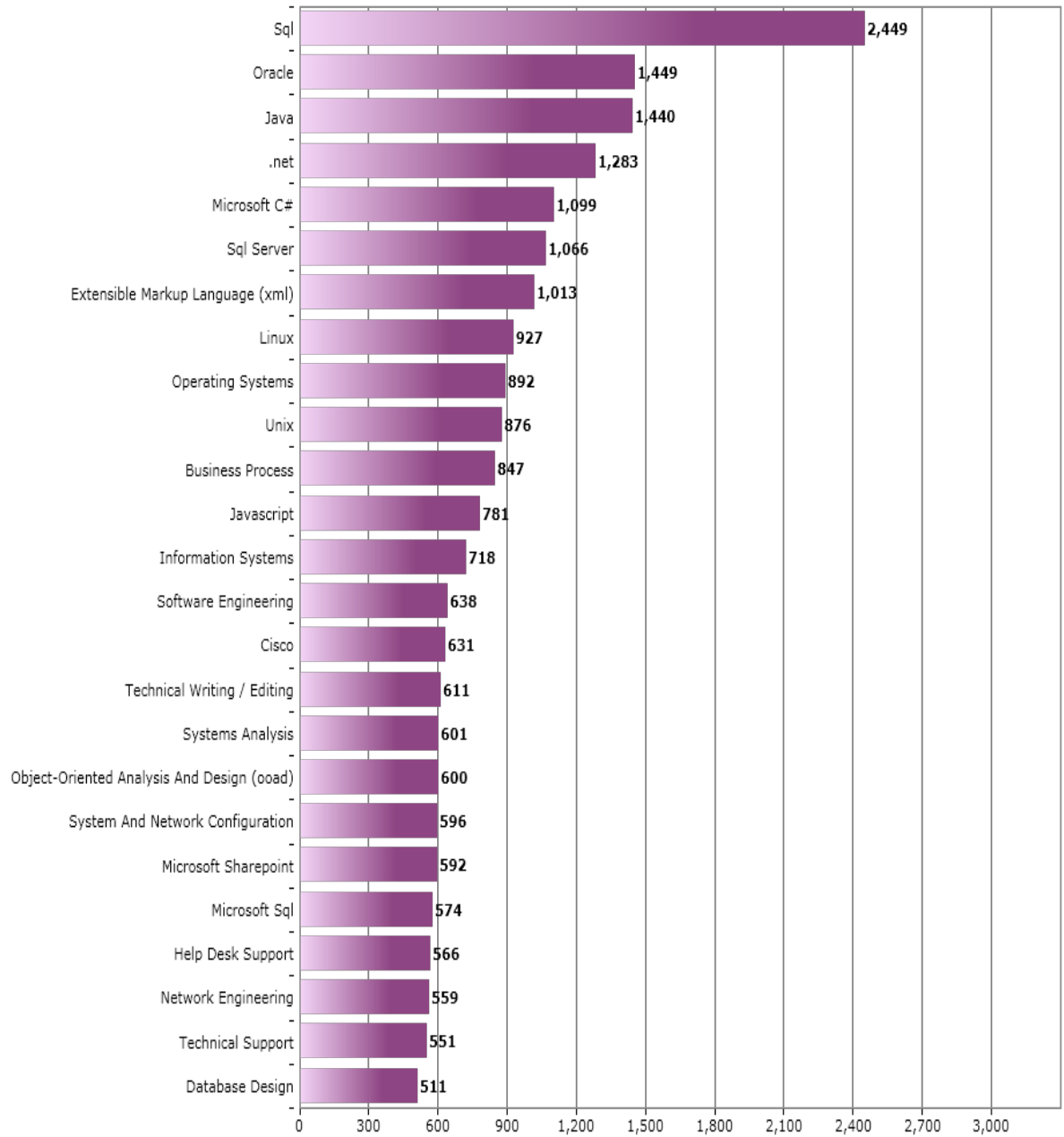
92	Public Administration	282	4.1%	4.0%
72	Accommodation and Food Services	119	1.7%	2.0%
42	Wholesale Trade	83	1.2%	1.0%
53	Real Estate and Rental and Leasing	74	1.1%	1.0%
22	Utilities	40	0.6%	0.0%
81	Other Services (except Public Admin)	24	0.3%	0.0%
23	Construction	17	0.2%	0.0%
71	Arts, Entertainment, and Recreation	17	0.2%	1.0%
21	Mining, Quarrying, Oil & Gas Extraction	17	0.2%	0.0%
55	Management of Companies and Enterprises	15	0.2%	0.0%

**Top Skills Clusters requested in Job Postings
Four-county Region, Past 12 Months**

Description	Job Postings
COMMON SKILLS: Communication and Coordination	5,756
COMMON SKILLS: Business Environment Skills	5,193
COMMON SKILLS: Problem Solving	5,033
IT: Programming, Development, and Engineering	4,686
IT: Databases and Data Warehousing	4,418
IT: Network Administration and Security	3,314
COMMON SKILLS: Project and Process Flow Skills	2,817
IT: Business Intelligence	2,805
IT: Web Design And Technologies	2,537
IT: Operating Systems	2,365
CUSTOMER SVC: Basic Assistance: Technical and Electronic	2,049
DIGITAL MEDIA and DESIGN: Tech Development and Design	1,775
IT: Support	1,725
BUSINESS: Process and Planning	1,690
IT: Software Testing and QA	1,647
DIGITAL MEDIA AND DESIGN: Digital Strategy	1,000

CUSTOMER SERVICE: Basic Assistance	710
FINANCE: Accounting, Bookkeeping, and Tax Preparation	616
ARTS: Writing: Technical	611
DIGITAL MEDIA AND DESIGN: Visual and Graphic Design	521
SUPPLY CHAIN AND LOGISTICS: General	519
ENGINEERING: General	493
RESEARCH: Quantitative	486
PRODUCT DESIGN AND DEVELOPMENT	438
HEALTH: Informatics	432
ADMIN SUPPORT: General	389
REPAIR: General	386
MARKETING: General	347
MANAGEMENT: Process Improvement	342
HR: Training	315
SALES: General	295
LEGAL: General	288
ENGINEERING: Electrical and Electronic	260
COMMON SKILLS: Language	228
FINANCE: Financial Compliance and Risk Management	168
IT: General	156
HR: Solutions	140
CUSTOMER SERVICE: Sales	130
HEALTH: Advanced Patient Care	128
ENGINEERING: Architectural	119
FINANCE: Financial Analysis	117
ADVANCED MANUFACTURING: Process Improvement	111
HEALTH: Basic Patient Care	111
RESEARCH: Program Development and Evaluation	104
MANAGEMENT: Program Development and Evaluation	104
HEALTH: Medical Specialties	103

Top Skills Requested in IT Job Postings Four-county Region, Past 12 Months



Top Certifications Requested in Job Postings
Four-county Region, Past 12 Months

Description	Job Openings
Cisco Certified Network Associate	131
Microsoft Certified Systems Engineer (MCSE)	125
Certified A+ Technician	120
Cisco Certified Network Professional (CCNP)	120
Microsoft Certified Professional (MCP)	73
Microsoft Certified It Professional (MCITP)	72
Registered Health Information Technician	70
Registered Health Information Administrator	64
Project Management Certification (e.g., PMP)	58
Network+ Certified	53
Cisco Certified Internetwork Expert (CCIE)	50
Certified Coding Specialist	37
Microsoft Certified Technology Specialist (MCTS)	28
Certified Information Systems Security Professional (CISSP)	26
Microsoft Certified Solution Developer (MCSD)	21
Microsoft Certified Systems Administrator (MCSA)	20
Microsoft Certified Desktop Support Technician	20
IT Infrastructure Library	20
Certified Information Systems Auditor (CISA)	18
VMware Certified Professional	17
Business Analysis Certificate	13
Cisco Certified Design Professional (CCDP)	12
Certified Public Accountant	12
Salesforce.com Developer	12
Epic Certification	11
APICS (American Production And Inventory Control Society) Certification	11
Server+	11

Oracle Certification (e.g., Oracle Certified Associate)	10
Professional Engineer	10
Database Administrator (DBA)	10

HEALTH CARE AND MANUFACTURING

IT Postings Within Health Care and Social Assistance Industry Four-county Region, Past 12 Months

Description	Job Openings
Computer Systems Analysts	208
Medical Records and Health Information Technicians	124
Computer Programmers	88
Software Developers, Applications	86
Computer Systems Engineers/Architects	54
Network and Computer Systems Administrators	51
Computer User Support Specialists	42
Database Administrators	40
Computer and Information Systems Managers	30
Software Developers, Systems Software	19
Technical Writers	12
Computer Network Architects	2
Audio and Video Equipment Technicians	2
Graphic Designers	2
Multimedia Artists and Animators	1

**IT Postings within Manufacturing
Four-county Region, Past 12 Months**

Description	Job Openings
Computer Systems Analysts	173
Software Developers, Applications	151
Computer Systems Engineers/Architects	91
Computer Programmers	79
Computer User Support Specialists	46
Network and Computer Systems Administrators	46
Software Developers, Systems Software	44
Graphic Designers	23
Database Administrators	18
Computer Network Architects	15
Computer and Information Systems Managers	5
Technical Writers	3
Computer Hardware Engineers	3
Audio and Video Equipment Technicians	2
Computer and Information Research Scientists	1
Medical Records and Health Information Technicians	1

APPENDIX V.

MANUFACTURING FIRMS WITHIN A 10-MILE RADIUS OF AURORA DISTRICT 129, GIS DATA

