



## USDOT Region V Regional University Transportation Center Final Report

NEXTRANS Project No. 142UWY2.1 and 142UWY2.2

### **REGION V TRANSPORTATION WORKFORCE ASSESSMENT AND SUMMIT**

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## **DISCLAIMER**

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## USDOT Region V Regional University Transportation Center Final Report

# TECHNICAL SUMMARY

NEXTRANS Project No. 142UWY2.1 and 142UWY2.2

Final Report, May, 2017

## Region V Transportation Workforce Assessment and Summit

### Introduction

The transportation workforce is undergoing unprecedented change due to rapid retirement of baby boomers while at the same time information, communication, and automation technologies are rapidly changing the transportation of people and goods. The purpose of this project is to lay the groundwork for addressing the transportation workforce challenges in the region.

### Findings

1. The outcome of K-12 investments to promote transportation career awareness are unknown. A collective impact strategy is needed to bring stakeholders together around a common mission and common performance measures. The collective impact strategy has been successful in other sectors.
2. The transportation sector invests in training programs without fulfilling personal or organizational workforce development goals because most programs are not credentialed or stackable. One strategy for developing and retaining the transportation workforce is to create career pathways. Pathways are usually geared for a specific population in a certain geographic area. Transportation agencies that work with educational partners to identify career pathways into and within the organization, will retain their workforce longer.
3. Many participants of the Regional Summit expressed concerns over how difficult it is to market transportation jobs to younger generations who might think of the occupations as low tech or with limited advancement opportunity. The industry must reach out to schools, minorities, women, and returning citizens with targeted messages that promote the industry and remove the stigma and misconceptions about transportation jobs.

### Recommendations

1. USDOT partner with USDOL to ensure that emerging occupations within the departments are reflected in the SOC system.
2. Education, internship, and apprenticeship programs will be necessary to bring future transportation workers up to speed with new technological advances in their positions. Transportation agencies should take advantage of apprenticeship models to attract and retain skilled workers.

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## Introduction

### Transportation Infrastructure and Services in Region V

An extensive multimodal transportation network serves both passengers and freight movement in the FHWA Region V states: Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin (Figure 1). This region covers 322,530 square miles, approximately 9 percent of the United States. These states are home to 52,196,212 residents, approximately 17 percent of the U.S. population (Census, 2014). Table 1 details the region’s population, land area, and transportation infrastructure information. Three of the 15 most densely populated areas in the United States are in this region: Chicago, Indianapolis, and Columbus. Additionally, major metropolitan areas exist in each of these states (Census, 2014). Ohio is among the top ten most densely populated states in the U.S. Other states ranking near the top ten most densely populated states include Illinois (12<sup>th</sup>), Indiana (16<sup>th</sup>), and Michigan (17<sup>th</sup>). These states are moderately sized, contain both rural and urban areas, and demonstrate geographic, economic, and resource variance. This variation can be assumed to affect the dynamics of the transportation system as well as the corollary workforce composition.



Figure 1: Region V States

Table 1. Overview of Population and Transportation Infrastructure by State for Region V

State	Population	Land Area	Public Road Miles	Commuters using Public Transit	Freight Railroad Miles	Inland Waterway Miles
Illinois	12,880,580	55,519	144,337	8.5%	7,027	1,100
Indiana	6,596,855	35,826	97,289	1.1%	4,273	350
Michigan	9,909,877	56,539	122,051	1.3%	3,632	0
Minnesota	5,457,173	79,627	138,833	3.3%	4,449	260
Ohio	11,594,163	40,861	123,281	1.6%	5,338	440
Wisconsin	5,757,564	54,158	115,094	1.8%	3,385	230

Sources: <http://gis.rita.dot.gov/StateFacts/> Retrieved March 26, 2015.

[https://www.aar.org/Style%20Library/railroads\\_and\\_states/dist/data/pdf/State%20rankings.pdf](https://www.aar.org/Style%20Library/railroads_and_states/dist/data/pdf/State%20rankings.pdf) Retrieved Nov. 2, 2015

As is typical across the U.S. transportation system, public investment and demand centers on highways and their associated car and truck freight movements in this region. According to the Bureau of Transportation Statistics (STS, 2012), the six states accounted for 507 billion passenger vehicle miles travelled (VMT). Ohio ranked 5<sup>th</sup> in the country with 112 billion VMT, followed by Illinois at 8<sup>th</sup> with 104 billion, Michigan at 10<sup>th</sup> with 94.5 billion and Indiana at 12<sup>th</sup> with 78.9 billion VMT. Wisconsin ranked 18<sup>th</sup> at 59 billion and Minnesota (19<sup>th</sup>) at 57 billion.

Region V plays a major role in the nation’s transportation, economic, and social systems. With more than 740,000 public road miles, approximately 64 percent of all freight tonnage is moving nationally on the highways. Clearly, highways, whether for personal vehicles or commercial trucks, dominate the system. Each of these states also has significant marine, rail, and aviation systems that move both freight and people. In addition to passenger demands, the region boasts two major U.S. rail hubs, access to nearly all the marine systems through the Great Lakes and Mississippi systems, and critical freight aviation facilities (FHWA, 2013; FHWA, 2015; FAF, 2013).

With this extensive multimodal regional transportation system, the total transportation expenditures by state and local governments in Region V exceed \$35 billion per year in Fiscal Year 2012 (STS, 2014). This makes up approximately 14 percent of the \$241 billion spent by state and local governments within the United States. Over ten percent of U.S. funds is directed to Region highways (Table 2), 2.3 percent of total funds to transit, 1 percent of funds to air, and approximately .04 percent of total funds for water transportation.

**Table 2. Budget by State and Mode (Millions of Dollars)**

State	Total	Highway	Transit	Air	Water
Illinois	\$12,226	\$7,250	\$3,757	\$1,202	\$16
Indiana	\$3,209	\$2,842	\$185	\$166	\$17
Michigan	\$4,432	\$3,350	\$612	\$464	\$5
Minnesota	\$4,225	\$3,638	\$184	\$368	\$36
Ohio	\$6,613	\$5,409	\$736	\$449	\$20
Wisconsin	\$4,499	\$3,874	\$363	\$247	\$15
Total, Reg V	\$35,204	\$26,362	\$5,837	\$2,896	\$101
Total, US	\$249,562	\$160,459	\$62,270	\$21,533	\$5,300

Source:

[https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/state\\_transportation\\_statistics/state\\_transportation\\_statistics\\_2015/chapter-6/Table6\\_8](https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/state_transportation_statistics/state_transportation_statistics_2015/chapter-6/Table6_8)



## Workforce Development Challenges

As for many industries, transportation employers are challenged to find qualified and skilled employees to do the needed work. Skill developments and career opportunities are important for employees, as in the Midwest region of the United States and should be the focus of workforce development efforts in the next ten years.

While focusing on addressing current transportation workforce needs, it is also important to understand challenges that will be faced when looking to improve the workforce. Participants of the 2012 National Transportation Workforce Summit organized by the Council of University Transportation Centers identified four major challenges to the transportation workforce (CUTC, 2012). These challenges include:

- Demographic changes, particularly retiring baby boomers.
- Career awareness and recruitment.
- New technologies and the need for operators and managers who can use them.
- Changing demands and priorities of transportation agencies requiring a workforce with broader, new skills.

These challenges are not unique to the transportation sector. The retirement of baby boomers is a major challenge that affects all mature industries across the nation (Warne, 2005). Current population demographics make employers uncertain about the availability of new workers to fill positions left open by retirees. However, this problem is also exacerbated by demographic differences in those who are available to fill the open positions. Lack of understanding about the transportation industry could also contribute to the challenges. For example, the workforce is more diverse than it has been in the past and recruiting and retaining women in transportation organizations has been a challenge due to a lack of career interest in transportation (Agrawal & Dill, 2008), few female role models in transportation careers (Rivera et al., 2007), and negative perceptions of the industry, such as a gender barrier and lack of flexibility (Dainty et al., 2004). Further, the younger generation of employees, not just women, typically expects more support from their employers with respect to flexibility and work-life balance (Zemke et al., 2000). Because this has not been important to previous generations of transportation workers, occupations and organizations are often not currently structured to offer these elements to employees.

Technology advancements are changing the way transportation infrastructure is designed, built, and operated and as well as the way transportation systems use contributes to economic growth. For example, computerized manufacturing and inventory management systems have completely changed the role of transportation in supply chain logistics. The air transportation industry is currently experiencing the implementation of NextGen, which utilizes new technology and requires wide-ranging transformations to work that has been done in the past. Other modes of transportation are also experiencing changes in the types of technology and equipment used to do work. With increases in the usage of computers and computerized equipment, employees who can work with the new technology are needed. Further, technology changes, new safety requirements, and changing legislation place additional burden on transportation organizations because they need to be able to meet changing requirements to be successful.

These transportation workforce challenges exist across the nation, and experiences in the Midwest region of the United States are no different in that these same challenges are experienced when working to develop a high-quality transportation workforce. The purpose of this project is to lay the groundwork for addressing the transportation workforce challenges in the region either by taking steps toward implementing the national recommendations regionally or by identifying the challenges and developing the solutions that may be unique to this region.

This report emphasizes workforce needs and priorities in Region V now and emerging in the future. It provides an overview of the transportation industry in the Midwest and specific workforce needs within the region within the road, water and rail modes. It provides information about the key types of transportation occupations in the region currently as well as job projections for these occupations for the next ten years. Based on these findings, skills required for key occupations will be identified, including skills that need additional training and development based on the experiences of transportation stakeholders within the region.

The Midwest supports significant transportation systems that require a diverse and broad-based transportation workforce. Although the skills and knowledge requirements for the various jobs will differ, key skills will likely overlap across many of these varied occupations.

With this modal distribution, major transportation employers in the area offer the full range of job opportunities. Just a sample of occupations would include the state and local department of transportation workforce together with rail, transit, marine, and aviation system employees, as well as drivers, educators, and researchers. These occupational areas are supplemented with a strong presence of transportation-dependent industries such as agriculture, natural resources, manufacturing, and supply chain logistics.

## Research Methodology

The methodology for developing this report includes several key phases, which are described below.

**Background review.** Our team identified and analyzed information from federal, state, and private sector research, technical reports, conference presentations, case studies, and human resources documents (e.g., position descriptions, job advertisements, career ladders, trainings, strategic plans, etc.). The objective was to characterize the transportation industry and employment trends in Region V. Results increased our team's overall understanding of the region's transportation workforce and related issues. We used this information to sort transportation occupations in categories of *high-wage*, *high-skill*, and *high-demand*.

**Engage stakeholders.** Next, we engaged transportation industry stakeholders throughout the region—both public and private partners—who are specifically knowledgeable about transportation occupations. We leveraged our contacts within state departments of workforce development, departments of transportation, economic development associations, industry associations, workforce investment boards, labor unions, higher education systems (colleges and universities), technical education systems (community and technical colleges), and major employers throughout the region to gather input from stakeholders. In addition to face-to-face meetings and teleconferences, we hosted a two-day Strategic

Advisory Meeting in April 2015 and a Regional Workforce Summit in December 2015. The broad range of participants discussed the burning issues and concerns of both the public and private sectors of the transportation industry. We engaged stakeholders in all modes to identify critical job functions, workforce development activities, recruitment and retention challenges, diversity challenges, targeted labor pools, and workforce trends over the next ten years. We identified common challenges and some innovative strategies underway to address these challenges. Results of this phase helped us define the workforce at the regional level and create a list of critical workforce occupations.

**Estimating regional workforce demand for occupations.** The project team used real-time job postings, ten-year projections from the Bureau of Labor Statistics (BLS), and a summary of future trends gleaned from stakeholder interviews to compile a picture of future regional workforce demand. These analyses demonstrated an unequivocal, across-the-board demand for truck drivers and support staff, especially diesel mechanics, in the public and private sectors. The team also examined a proposed expansion of the inland waterway system in the Midwest, which has the potential to enlarge the maritime workforce and subsidiary manufacturing and service sectors. The project team also considered the effects of overdue infrastructure improvement projects across the nine-state region, especially highways and bridges (FHWA, 2014) which would impact construction worker demand. The team also considered the implications of increasing global free trade with a corresponding need for supply chain and logistics professionals.

Phase II involves planning and conducting a regional summit that brings together transportation, education, labor and economic development stakeholders to consider the recommendations made at the national summit considering specific regional conditions and needs. The critical task of developing a transportation workforce strategy challenges the transportation industry as it faces a loss of workers to retirement and separation over the next ten years. The important tasks for planning and convening the Summit are described below.

**Identify Region V transportation workforce stakeholders and goals for a regional summit.** There are many stakeholders to engage. Stakeholder organizations involved in educating, training and employing transportation workers span all modes: highway, air, maritime, rail, and pipeline. They include the private sector and the public sector—state departments of transportation, education, and labor; professional associations and other organizations such as unions and workforce investment boards; as well the educational system (K-12, technical schools, community colleges and universities) (CUTC, 2012).

While there are many efforts in place to build a pipeline of talent for this sector, workforce development efforts tend to focus on a single mode or occupation. The task of engaging stakeholders in transportation workforce development is a complex problem because of the overwhelming number and scope of stakeholder organizations represented, jobs in the industry (i.e., construction, truck driver, and white collar), the invisibility of the sector (Stacey, 2003), the lack of awareness about careers (Hernandez & Ritchie, 2015), and the wide range of education and training options. For complex problems like this, approaches must allow for innovation, creativity, and breaking with the past, and must be outcomes based.

The overall premise of the Summit was to shift our conversation from the problems to the possibilities and to create an alternative future distinct from the past. To “Change the Conversation” attendees would focus on possibility rather than problem solving; ownership rather than entitlement, blame, or denial; gifts rather than deficiencies; commitment rather than hedge or barter; dissent and refusal rather than rebellion, resignation, or lip service.

**Identify methodology for engaging regional stakeholders.** Effectively bringing all the stakeholders together and achieving optimal benefit across all modes requires some innovations for engagement. The MTWC reviewed various methodologies to engage stakeholders at the Midwest Transportation Workforce Summit. This report presents a brief review of organizational behavior/social impact/complexity science methods used to deal with complex problems.

The Midwest Transportation Workforce Center (MTWC) adopted Collective Impact, a structured approach to cross-sector collaboration, as its overarching framework for engagement and community building among the stakeholders. Collective Impact is the “commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem” (Hanleybrown, Kania, & Kramer, 2012). This approach has been successful in dealing with complex social issues such as homelessness, teen-age pregnancy, and juvenile delinquency. The framework has been used by the Partnership for Sustainable Communities in accelerating local actions to align housing and transportation policies across the U.S. (“The Sustainable Communities Initiative,” n.d.). Partners for a Competitive Workforce of Cincinnati, Ohio has an initiative to develop a supply chain career pathway which has created work/education/tuition reimbursement models for high school and college students since its inception in 2015 (“Home | #SupplyChainOKI,” n.d.).

There are four phases to Collective Impact (Table 3) (Hanleybrown et al., 2012) but these are not necessarily consecutive phases. A Collective Impact initiative may take 2–3 years for all phases to be completed. For the 2015 Summit, the MTWC analyzed baseline data, began engaging the community, and facilitated the sharing of practices. Formalizing a common agenda and metrics will be the focus of future conversations.

**Table 3. Phases of Collective Impact**

Components for Success	Phase I Initiate Action	Phase II Organize for Impact	Phase III Sustain Action and Impact
Governance and Infrastructure	Identify champions and form cross-sector group	Create infrastructure (backbone and processes)	Facilitate and refine
Strategic Planning	Map the landscape and use data to make the case	Create common agenda (goals and strategy)	Support implementation (alignment to goals and strategies)
Community Involvement	Facilitate community outreach	Engage community and build public will	Continue engagement and conduct advocacy
Evaluation and Improvement	Analyze baseline data to identify key issues and gaps	Establish shared metrics (indicators, measurement, and approach)	Collect, track, and report progress (process to learn and improve)

**Plan and conduct regional summit.** There are five elements necessary for Collective Impact to happen (Hanleybrown et al., 2012) listed below. Within the context of Collective Impact, the MTWC saw its role in conducting the regional summit as the backbone organization.

1. An agreed upon understanding of the problem that results in a common agenda;
2. Agreement on common metrics in order to align stakeholder activities and quantify impacts;
3. A coordinating organization that provides backbone support and takes the responsibility to plan, manage, and facilitate on behalf of the group;
4. Continuous communication among stakeholders; and
5. Mutually reinforcing activities where different stakeholders align their programs to achieve maximum impact.

In December 2015, the MTWC hosted a two-day meeting titled, Midwest Transportation Workforce Summit: Addressing the Future Now! Many members of the MTWC Advisory Committee participated in planning the Summit and as session moderators during the event. The Summit steering committee included:

- Teresa Adams, PhD (Chair), Director, Midwest Transportation Workforce Center
- Marcia Black-Watson, Industry Talent Director, Michigan Workforce Development Agency
- Maria Viteri Hart, Program Manager, Midwest Transportation Workforce Center
- Kathy Heady, Sector Manager, Wisconsin Economic Development Corporation
- Grailing Jones, Director, Schneider Finance Inc., (Small Business Owner-Operator Development)
- Judy Jozaitis, EdD, Vice-President, Workforce Development and Community Education, Lincoln Land Community College
- Darrin Pfeifly, Director of Transport Training, Crowder College
- Dawn Pratt, Human Resources Manager, Payne & Dolan, Inc.
- Cherish Schwenn, Executive Director, Wisconsin Ready Mixed Concrete Association
- Lee Wilkinson, Director, Operations and Finance Division, Iowa Department of Transportation
- Ernie Wittwer, MTWC Consultant

There were 123 registrants for representing all stakeholder groups and states in Region V. Summit participants were provided with the following pre-readings: *Channeling Change, Making Collective Impact Work* (Hanleybrown et al., 2012), and *Using Emergence to take Social Innovation to Scale*. Participants also received Block's book in their packets. All summit materials including agenda, pre-meeting materials, presentations, workforce initiatives can be found at <http://mtwc.org/mtwc-events/regional-workforce-summit/>.

The format of the Summit included traditional presentations followed by directed conversations rather than the typical question and answer period. Instead, we embraced the use of powerful questions to help individuals understand their role within the workforce system and the impact they have on such a system. Attendees spent some time in reflection and then moved to small groups of 3–12 for further discussion and to see if the group might co-create new initiatives.

The use of powerful questions offered a method to overcome two barriers. First, to help individuals reflect on their role in perpetuating the current reality and corresponding change in attitudes and behaviors. Second, to accelerate action among groups that typically work in silos. In answering the

questions, we hoped the participants would assume accountability for and commit to making the Summit a success for themselves and others.

**Assess Summit methodology and outcomes.** The unique backgrounds of the Summit attendees are reflected by the wide variety of responses, ranging from general to specific and covering topics such as workforce diversity, transportation education, and career development. Conversations at the 2015 MTWC Summit resulted in 104 individual commitments made by representatives from various agencies, companies, and organizations in the transportation industry. The commitments are not as important as the act of making the commitment. In this report, we analyze the content of commitments into categories to reflect the impact of the Summit on the attitudes and actions of the participants. The categories include commitments to continue the conversations started at the Summit, spreading messages from the Summit to people or organizations that did not attend the Summit, taking action to create a partnership, changing attitude about an issue, or taking an action to learn more about an issue. The largest group are commitments to take actions such as to create “an online training program that educates professionals” about the power of social media as a tool “for hiring, recruiting, and the entire spectrum of options for workforce education and development.”

The MTWC continues to facilitate the Google Community of Practice established for the Summit attendees.

## Phase 1: Regional Transportation Workforce Assessment

The transportation industry is a broad sector, encompassing a wide range of occupations with diverse job functions. These transportation occupations span the modes including highways, waterways, and rail.

Federal agencies and other organizations that collect, analyze, and share occupational data do so by using the Standard Occupational Classification (SOC) system. In this system, each occupation has its own code and the codes are grouped into categories of similar occupations. This allows for more consistent reporting and analysis of occupations.

From an industry perspective, Table 4 shows average annual employment data classified by the North American Industry Classification System (NAICS). In 2014, more than 900 million individuals were employed within the Transportation and Warehousing sector in Region V. Most of these employees (84 percent) work in private organizations and the remainder in federal, state, or local government. While these individuals work in different modes of transportation and different organizations, this table shows the importance and prevalence of transportation jobs and careers in the region.

**Table 4. Number of Employees in Transportation and Warehousing Occupations, Annual Average, 2014**

	Employees in Private Organizations	Employees in Federal, State and Local Government	Total Number of Employees
United States Total	4,391,274	934,197	5,325,471
Illinois	231,614	42,945	274,559
Indiana	116,772	17,291	134,063
Michigan	106,716	24,409	131,125
Minnesota	77,869	18,150	96,019
Ohio	170,691	32,587	203,278
Wisconsin	87,720	13,383	101,103
Region V Total	791,382	148,765	940,147

Source: [http://www.bls.gov/cew/apps/data\\_views/data\\_views.htm#tab=Tables](http://www.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables) (NAICS Codes 48-49)

Of the 5.3 million transportation and warehousing employees in the country, more than 17 percent are employed in the six states that comprise Region V. And, more than 50 percent of transportation and warehousing employees in this region are employed in just two states: Illinois and Ohio. All six states, however, have both private and public employees working in transportation-related occupations.

### **Top MSAs for Transportation and Warehousing Jobs**

Burning Glass Technologies is a job aggregator that uses spider technology to crawl the web to report current job openings. This labor market intelligence provides a different view of the marketplace as skills and occupations can be identified through industry sectors and by geography. From May 1 to October 31,

2015, the five metropolitan statistical areas (MSAs) in Region V with greatest number of transportation and warehousing jobs are Chicago, Detroit, Cincinnati, Indianapolis and Cleveland (Figure 2).

Source: Labor Insight Jobs (Burning Glass Technologies)

**Top MSAs**

May 01, 2015 - Oct. 31, 2015  
 There are 149,471 postings available with the current filters applied.  
 There are 28,010 unspecified or unclassified postings.

**Active Selections**

Last 6 months AND ( State : Missouri OR State : Iowa OR State : Illinois OR State : Indiana OR State : Kansas OR State : Michigan OR State : Minnesota OR State : Ohio OR State : Wisconsin ) AND ( Industry Sector : Transportation and Warehousing )

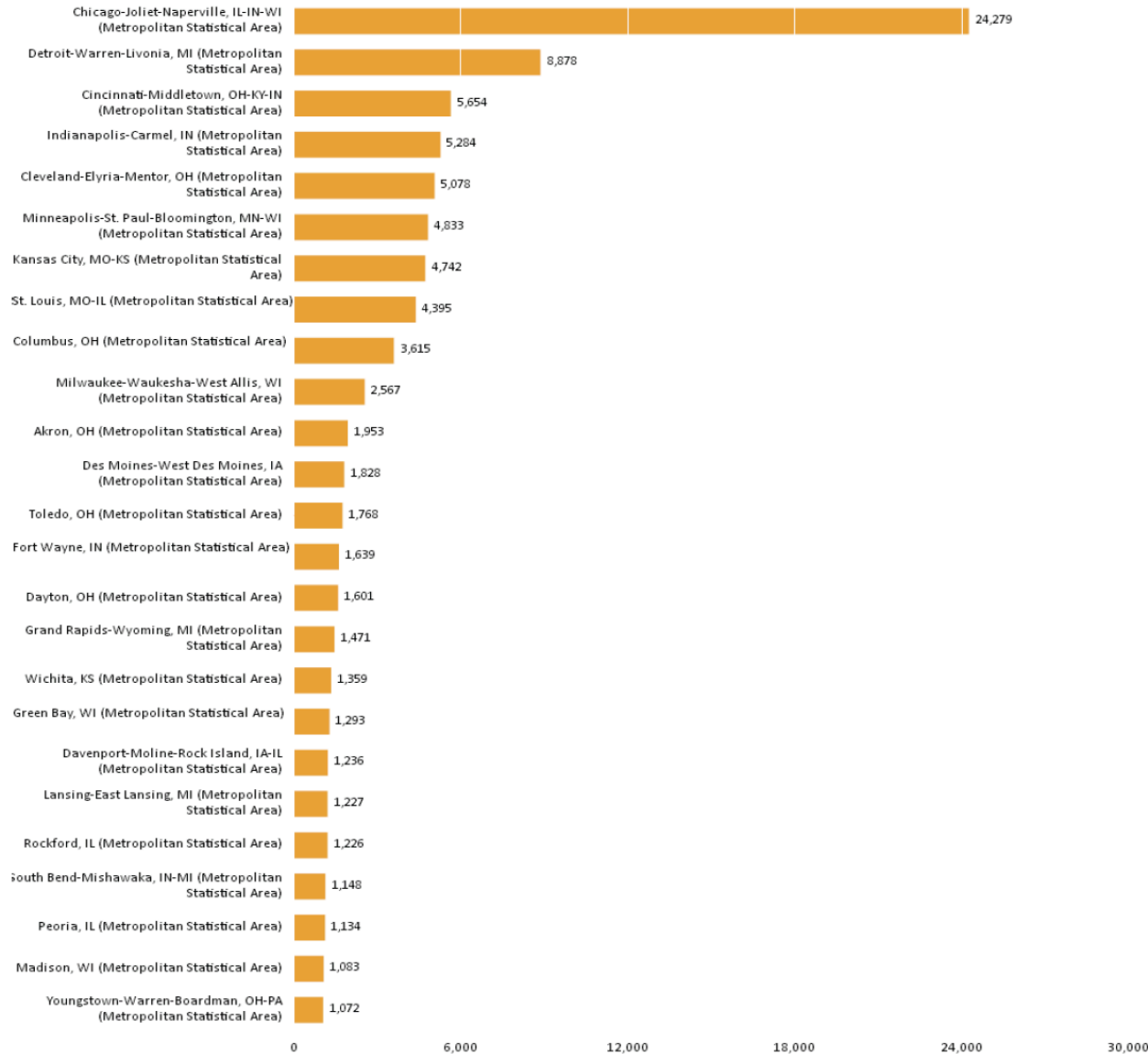


Figure 2: Top MSA's in the Midwest for Transportation and Warehousing Jobs



Likewise, the use of Burning Glass Technologies provided insight and identified jobs that are in demand in transportation sector. This helped identify occupations such as *Managers, All Others* and *Software Developer, Applications*.

Source: Labor Insight Jobs (Burning Glass Technologies)

### Top Occupations

May 01, 2015 - Oct. 31, 2015  
 There are 149,471 postings available with the current filters applied.  
 There are 1,552 unspecified or unclassified postings.

### Active Selections

Last 6 months AND ( State : Missouri OR State : Iowa OR State : Illinois OR State : Indiana OR State : Kansas OR State : Michigan OR State : Minnesota OR State : Ohio OR State : Wisconsin ) AND ( Industry Sector : Transportation and Warehousing )

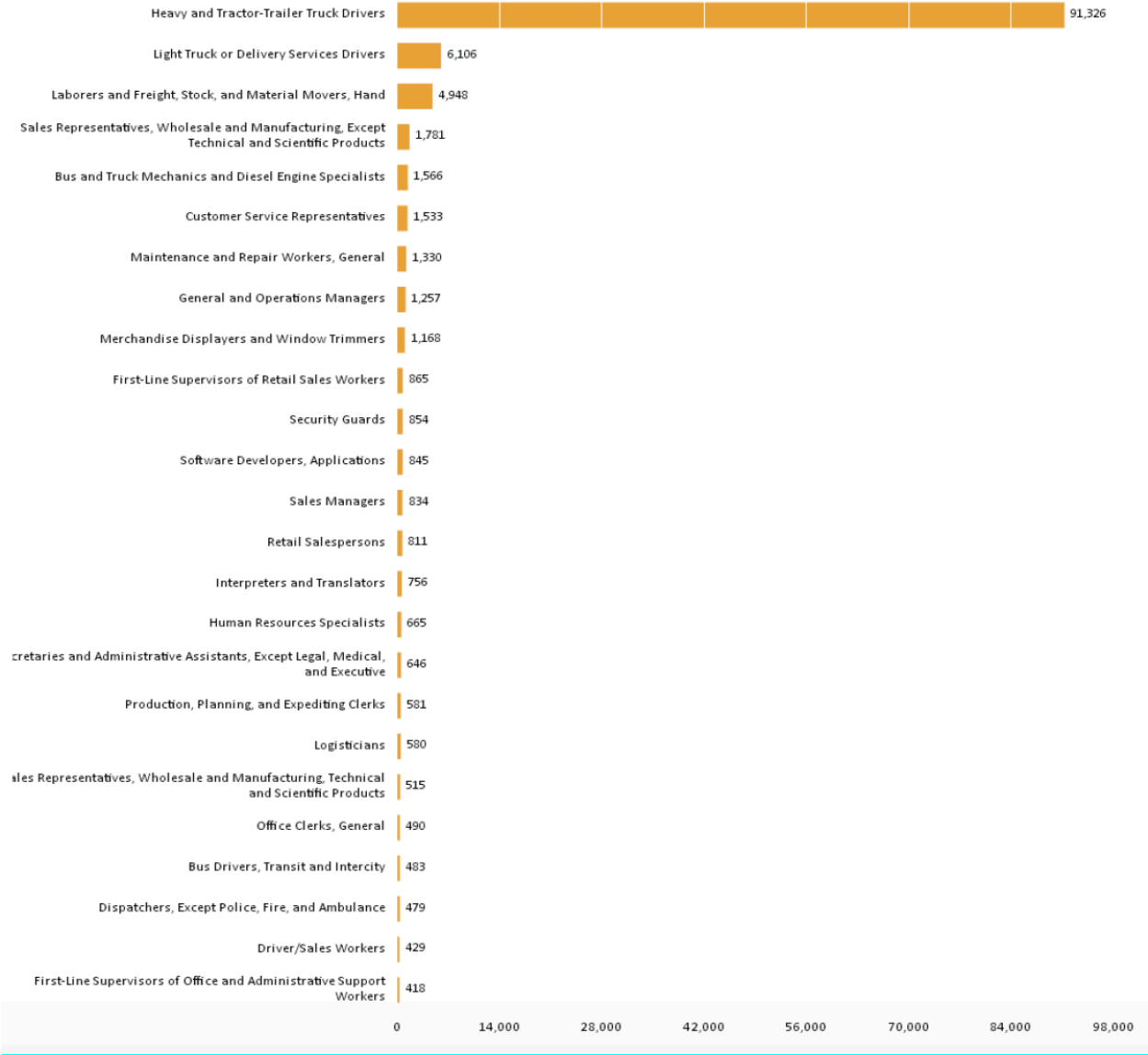


Figure 3: Top Midwest Jobs in the Transportation and Warehousing Sector, 2015

## Transportation Occupations in Region V

For a more in-depth look at the Region V transportation workforce, our work shifted from employees within the industry to those employed in specific occupations. Further, to understand future needs, we examined projections about changes in the number of employees for each occupation.

As we began exploring the transportation workforce in Region V, important occupations within the industry were first identified using occupational codes and employment data from existing state Department of Labor (DOL) and Bureau of Labor Statistics (BLS) databases. This information was then used to provide a broad overview of the transportation workforce in the Midwest.

The BLS and individual state departments of labor develop 10-year predictions to help with long-term planning, specifically about career choice. As such, the education typically required for each occupation is provided. The projections are based on how fast employment is expected to grow or decline for each occupation. Projections are updated every two years. The data in this report includes both the number of employees in Region V in each occupation, as well as a 10-year projection. This information presented in this report is based on 2012 data and includes projections for 2022.

There are 23 major groups of occupations within the 2012 Standard Occupational Classification (SOC) system, including Transportation and Material Moving Occupations, designated by SOC codes that begin with 53.

This list was further refined by examining transportation knowledge required of each occupation. This knowledge refers to the design, maintenance, of transportation infrastructure or operating a conveyance such as a bus or truck. Table 4 provides data for occupations within this group relevant to Region V. For each occupation, the table includes an SOC code, occupation title, number of employees in Region V in May 2014, national average hourly wage, and the typical education required for entry into the occupation. The table also includes 2012 data and 2022 projections, number of employees and percent change. Not all occupations are estimated in each state. These occupations are asterisked (\*). See the notes section for further information.

**Table 5. Current and Projected Employment in Region V for Transportation Occupations within the SOC Transportation and Material Moving**

SOC Code	Occupation Title	# of employees in Region V May 2014	National Average Hourly Wage	Typical Education Needed for Entry	# of Employees, 2012	Projected # of Employees, 2022	Change in # of Employees	Percent Change
53-1021	1st Line Supvr. of Helpers, Laborers, and Material Movers, Hand	30,690	\$23.55	High school diploma or equivalent	30,547	33,669	3,122	10.22
53-1031	1st Line Supvr. of Transp and Material-Moving Machine and Vehicle Operators	31,090	\$27.66	High school diploma or equivalent	32,596	34,960	2,364	7.25
53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians*	2,520	\$12.26	High school diploma or equivalent	1,467	1,725	258	17.59
53-3021	Bus Drivers, Transit and Intercity	23,980	\$18.95	High school diploma or equivalent	27,454	28,849	1,395	5.08
53-3022	Bus Drivers, School or Special Client	88,150	\$14.38	High school diploma or equivalent	87,668	93,362	5,694	6.49
53-3032	Truck Drivers, Heavy and Tractor-Trailer	312,230	\$20.16	High school diploma or equivalent	314,610	345,772	31,162	9.90
53-3033	Truck Drivers, Light or Delivery Services	145,050	\$16.28	High school diploma or equivalent	148,839	156,780	7,941	5.34
53-3041	Taxi Drivers and Chauffeurs	28,210	\$12.35	High school diploma or equivalent	31,506	36,122	4,616	14.65
53-4011	Locomotive Engineers†	8,700	\$27.41	High school diploma or equivalent	4,002	3,817	-185	-4.62
53-4013	Rail Yard Engineers, Dinkey Operators, and Hostler‡	700	\$21.54	High school diploma or equivalent	1,117	1,146	29	2.60

\* For Ambulance Drivers, et.al., 2012 estimate not available for Indiana.

† For Locomotive Engineers, 2012 estimate not available for Illinois. 3,000 in 2014.

‡ For Railyard Engineers, et al. 2012 estimate not released for Ohio and Wisconsin. 2014 estimates not released for Indiana, Minnesota, Wisconsin.

SOC Code	Occupation Title	# of employees in Region V May 2014	National Average Hourly Wage	Typical Education Needed for Entry	# of Employees, 2012	Projected # of Employees, 2022	Change in # of Employees	Percent Change
53-4021	Railroad Brake, Signal, and Switch Operators	3,740	\$25.14	High school diploma or equivalent	436	436	0	0.00
53-4031	Railroad Conductors and Yardmasters <sup>§</sup>	6,030	\$26.84	High school diploma or equivalent	8,645	8,195	-450	-5.21
53-4041	Subway and Streetcar Operators	0	\$28.48	High school diploma or equivalent	15	16	1	6.67
53-5011	Sailors and Marine Oilers**	1,480	\$19.70	High school diploma or equivalent	1,511	1,629	118	7.81
53-5021	Captains, Mates, and Pilots of Water Vessels <sup>††</sup>	1,740	\$38.07	High school diploma or equivalent	1,851	1,982	131	7.08
53-6041	Traffic Technicians <sup>‡‡</sup>	630	\$22.38	High school diploma or equivalent	368	391	23	6.25
53-6051	Transportation Inspectors	3,010	\$34.05	High school diploma or equivalent	3,167	3,515	348	10.99
53-7011	Conveyor Operators and Tenders <sup>§§</sup>	5,360	\$16.35	High school diploma or equivalent	8,593	9,220	627	7.30
53-7021	Crane and Tower Operators	7,060	\$25.75	High school diploma or equivalent	7,286	8,092	806	11.06
53-7031	Dredge Operators <sup>***</sup>	220	\$21.94	High school diploma or equivalent	73	77	4	5.48
53-7041	Hoist and Winch Operators <sup>†††</sup>	790	\$23.47	High school diploma or equivalent	683	701	18	2.64

<sup>§</sup> For Railroad Conductors, 2014 estimate not available for Ohio.

\*\* For Sailors, et. al, 2014 estimate not available for Minnesota and Indiana.

†† For Captains, et.al., 2014 estimate not available for Indiana.

‡‡ 2014 estimate not available for Wisconsin.

§§ For Conveyor operators et.al 2014 not available for Indiana.

\*\*\* Dredge Operators, no occupations in IL, MI, MN, WI.

††† Hoist and Winch Operators, 2014 estimate not available for Michigan

SOC Code	Occupation Title	# of employees in Region V May 2014	National Average Hourly Wage	Typical Education Needed for Entry	# of Employees, 2012	Projected # of Employees, 2022	Change in # of Employees	Percent Change
53-7061	Cleaners of Vehicles and Equipment	56,870	\$11.22	High school diploma or equivalent	56,770	61,391	4,621	8.14
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	471,670	\$13.07	High school diploma or equivalent	438,191	490,377	52,186	11.91
53-7063	Machine Feeders and Offbearers	22,160	\$14.73	High school diploma or equivalent	23,452	24,027	575	2.45
53-7064	Packers and Packagers	157,660	\$11.08	High school diploma or equivalent	149,522	163,005	13,483	9.02
53-7081	Refuse and Recyclable Material Collectors	19,030	\$17.32	High school diploma or equivalent	20,630	22,389	1,759	8.53
53-7121	Tank Car, Truck, and Ship Loaders	1,890	\$21.41	High school diploma or equivalent	1,027	1,155	128	12.46

Notes: Ship Engineers Not shown. 120 employees in Ohio and Michigan. No other estimates or projections in Region V.

Sources: Bureau of Labor Statistics <https://www.bls.gov/oes/Tables.htm>; [http://www.bls.gov/cew/apps/data\\_views/data\\_views.htm#tab=Tables](http://www.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables) State 2012–2022 Employment Figures and Projections, <https://www.bls.gov/oes/Tables.htm>. “--” indicates that data were not available from the identified source.

2012 and 2014 employment data and projections were gathered state-by-state from the following sources:

Illinois at: [http://www.ides.illinois.gov/LMI/Pages/Employment\\_Projections.aspx](http://www.ides.illinois.gov/LMI/Pages/Employment_Projections.aspx);

Indiana at: [http://www.hoosierdata.in.gov/dpage.asp?id=39&view\\_number=2&panel\\_number=2](http://www.hoosierdata.in.gov/dpage.asp?id=39&view_number=2&panel_number=2);

Michigan (*note that these are 2010 and 2020 figures*) at: <http://milmi.org/?PAGEID=67&SUBID=201>;

Minnesota at <https://apps.deed.state.mn.us/lmi/oes/Results.aspx>;

Ohio at: <http://ohiolmi.com/proj/OhioJobOutlook.htm>; and

Wisconsin at: <http://worknet.wisconsin.gov/worknet/daocprj.aspx?menuselection=da>.

The greatest long-term (defined as 2012-22) increases in the Region V are projected to be in *Drivers Stock Laborers and Freight and Hand Material Movers* (more than 52,000 jobs), followed by *Heavy and Tractor Trailer Truck* (more than 31,000 jobs). No other occupations approach these totals. The third projected swiftest growing occupation is *Packers and Packagers* (more than 13,000 jobs) and the fourth, *Light or Delivery Services Truck Drivers* (nearly 8,000 jobs). Some occupations are expected to experience only modest increases, while others, such as in the railroad industry, are expected to shrink.

It is also important to look at employment changes in terms of percent change, which shows occupations expected to grow quickly, without the focus on the larger occupations. The largest percentage increases are expected to be in *Ambulance Drivers and Attendants (except Emergency Medical Technicians)* (17.6 percent), followed by *Taxi Drivers and Chauffeurs* (nearly 15 percent), *Tank Car, Truck, and Ship Loaders* (12.4 percent), and *Laborers and Freight, Stock, and Material Movers, Hand* (almost 12 percent). When examining the occupations shown in Table 5, each mode described for the Midwest is represented in these occupations.

We also find employees working in transportation across other SOC Major Groups. For example, many transportation agencies employ engineers or planners, which are not included in the list of occupations in Table 5. Engineers and planners may be employed by transportation organizations, but they may also work in other industries. It was necessary to examine occupations in other SOC major groupings. To identify transportation occupations outside of the Transportation and Materials Moving Occupations SOC grouping, the research team adopted a broad definition of “transportation occupations” to encompass: *Occupations related to the planning, design, construction, operation, management and maintenance of transportation infrastructure: conveyances, systems; and modes that support the movement of people, materials, and goods.*

One group of employees who serve an important role in transportation are engineers and other scientists responsible for designing and building needed infrastructure, as well as individuals working in construction, maintenance, and repair of roads, tracks, or other structures used in transportation. To provide information on these occupations, Table 6 includes data for relevant occupations from the following SOC groups:

- Architecture and Engineering Occupations (17-0000)
- Life, Physical and Social Science Occupations (19-0000)
- Construction and Extraction Occupations (47-0000)
- Installation, Maintenance and Repair Occupations (49-0000)

When considering the outlook for these industry-spanning occupations in terms of number of employees, it is important to note that there will likely be more competition due to the diverse employers for which they can work. This is especially true for occupations expected to grow in the next seven years.

**Table 6. Current and Projected Employment in Region V for Transportation Occupations within Engineering, Science, Construction, and Maintenance**

SOC Code	Occupation Title	# of employees in the MW, May 2014	National Average Hourly Wage	Typical Education Needed for Entry	# of Employees, 2012	Projected # of Employees, 2022	Change in # of Employees	Percent Change
17-2051	Civil Engineers	34,220	\$41.89	Bachelor's degree	32,586	37,344	4,758	14.60
17-2121	Marine Engineers <sup>†††</sup>	70	\$47.67	Bachelor's degree	105	118	13	12.38
19-3051	Urban and Regional Planners	4,150	\$33.18	Master's degree	4,400	4,630	230	5.23
19-3099	Transportation Planners (Social Scientist and Related)	3,200	\$38.48	Master's degree	3,889	3,808	-81	-2.08
47-2051	Cement Masons and Concrete Finishers	25,510	\$19.70	High school diploma or equivalent	23,898	28,473	4,575	19.14
47-2061	Construction Laborers	120,380	\$17.19	High school diploma or equivalent	140,073	164,111	24,038	17.16
47-2071	Paving, Surfacing, and Tamping Equipment Operators	7,150	\$20.41	High school diploma or equivalent	7,350	8,440	1,090	14.83
47-2073	Operating Engineers and Other Construction Equipment Operation	54,390	\$23.09	High school diploma or equivalent	52,592	59,802	7,210	13.71
47-2221	Structural Iron and Steel Workers	9,920	\$25.55	High school diploma or equivalent	8,853	9,930	1,077	12.17
47-4051	Highway Maintenance Workers	29,880	\$18.22	High school diploma or equivalent	32,696	33,687	991	3.03

<sup>†††</sup> For Marine Engineers, 2014 data is for Wisconsin only. Other states not available.

SOC Code	Occupation Title	# of employees in the MW, May 2014	National Average Hourly Wage	Typical Education Needed for Entry	# of Employees, 2012	Projected # of Employees, 2022	Change in # of Employees	Percent Change
47-4061	Rail-Track Laying and Maintenance Equipment Operators <sup>§§§</sup>	2,380	\$24.39	High school diploma or equivalent	3,357	3,434	77	2.29
49-3023	Automotive Service Technicians and Mechanics	105,410	\$19.22	High school diploma or equivalent	113,539	120,942	7,403	6.52
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	46,530	\$21.71	High school diploma or equivalent	47,573	50,933	3,360	7.06
49-3043	Rail Car Repairers	3,860	\$25.27	High school diploma or equivalent	4,802	4,823	21	0.44
49-3093	Tire Repairers and Changers	14,560	\$12.31	High school diploma or equivalent	14,269	15,223	954	6.69

<sup>a</sup> Sources: Bureau of Labor Statistics <https://www.bls.gov/oes/Tables.htm>; [http://www.bls.gov/cew/apps/data\\_views/data\\_views.htm#tab=Tables](http://www.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables)

<sup>b</sup> Sources: State 2012–2022 Employment Figures and Projections, <https://www.bls.gov/oes/Tables.htm>. "--" indicates that data were not available from the identified source.

2012 and 2014 employment data and projections were gathered state-by-state from the following sources:

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Indiana at: [http://www.hoosierdata.in.gov/dpage.asp?id=39&view\\_number=2&panel\\_number=2](http://www.hoosierdata.in.gov/dpage.asp?id=39&view_number=2&panel_number=2);

Michigan (*note that these are 2010 and 2020 figures*) at: <http://milmi.org/?PAGEID=67&SUBID=201>;

Minnesota at <https://apps.deed.state.mn.us/lmi/oes/Results.aspx>;

Ohio at: <http://ohiolmi.com/proj/OhioJobOutlook.htm>; and

Wisconsin at: <http://worknet.wisconsin.gov/worknet/daocprj.aspx?menuselection=da>.

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<sup>§§§</sup> For Rail-Track Laying et.al., 2014 estimate is not available for Michigan.



Top occupations in terms of percent change by 2022 are *Cement Masons and Concrete Finishers* (19 percent) followed by *Construction Laborers* (17 percent). The *Construction Laborers* occupation is projected to need an additional 24,000 jobs in 2022. Seven thousand new *Automotive Service Technicians* will be needed in 2022.

Only some occupations in Table 6, specifically *Civil Engineers, Marine Engineers, Urban and Regional Planners, and Transportation Planners (Social Scientists and Related)*, require a college degree (i.e., bachelor's or master's degree). With only one exception, each occupation is projected to increase in size by 2022.

*Transportation Planners* have their own O\*Net code but when crosswalked with the SOC system are grouped under the SOC Social Scientists code. It is difficult to predict whether the decrease in jobs (81 jobs equivalent or decrease of 2 percent) will impact transportation planners.

Two occupations within the rail industry (*Rail Car Repairers; Rail-Track Laying and Maintenance Equipment Operators*) are projected to show quite modest growth of .44 percent and two percent, respectively.

Beyond the engineering and technical employees that support transportation organizations, there are also employees in management, finance, computer technology, and support. Table 7 provides occupational data and projections for these types of occupations, which come from the following SOC groups:

- Management Occupations (11-0000)
- Business and Financial Operations Occupations (13-0000)
- Protective Service Occupations (33-0000)
- Office and Administrative Occupations (43-0000)
- Computer and Information Technology Occupations (15-0000)

Like the previous occupational data and projections tables, Table 7 provides SOC code, occupation title, number of employees in the Region V, average hourly wage, typical education required for entry into the occupation, and 2012-22 occupational projections.

**Table 7. Current and Projected Employment in Region V for Transportation Occupations within Management, Service, and Support Occupations**

SOC Code	Occupation Title	Region V Employees May 2014	National Average Hourly Wage	Typical Education Needed for Entry	# of Employees, 2012	Projected # of Employees, 2022	Change in # of Employees	Percent Change
11-1021	General and Operations Manager	331,330	\$56.35	Bachelor's degree	299,750	327,960	28,210	9.41
11-3071	Transportation, Storage and Distribution Managers	20,770	\$44.80	High school diploma or equivalent	20,462	21,776	1,314	6.42
11-9199	Managers, All Others (includes Supply Chain Managers) <sup>13</sup>	69,990	\$52.99	Bachelor's degree	142,338	153,524	11,186	7.86
13-1081	Logisticians	22,560	\$36.94	Bachelor's degree	21,261	25,437	4,176	19.64
13-1199	Business Support Specialists (includes Customs Brokers)	163,420	\$35.10	Bachelor's degree	163,777	176,888	13,111	8.01
15-1132	Software Developers, Applications	100,440	\$47.85	Bachelor's degree	94,860	112,920	18,060	19.04
33-3052	Transit and Railroad Police <sup>14</sup>	420	\$25.56	Some college, no degree	20	20	0	0.00
33-9093	Transportation Security Screeners <sup>15</sup>	2,380	\$18.56	Some college, no degree	5,690	6,419	729	12.81
43-5011	Freight Forwarders	12,440	\$21.14	High school diploma or equivalent	14,312	16,725	2,413	16.86
43-5032	Dispatchers, Except Police, Fire, and Ambulance	32,620	\$19.09	High school diploma or equivalent	30,492	33,299	2,807	9.21

Sources: Bureau of Labor Statistics <https://www.bls.gov/oes/Tables.htm>; [http://www.bls.gov/cew/apps/data\\_views/data\\_views.htm#tab=Tables](http://www.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables) State 2012–2022 Employment Figures and Projections, <https://www.bls.gov/oes/Tables.htm>. “--” indicates that data were not available from the identified source. 2012 and 2014 employment data and projections were gathered state-by-state from the following sources: Illinois at: [http://www.ides.illinois.gov/LMI/Pages/Employment\\_Projections.aspx](http://www.ides.illinois.gov/LMI/Pages/Employment_Projections.aspx); Indiana at: [http://www.hoosierdata.in.gov/dpage.asp?id=39&view\\_number=2&panel\\_number=2](http://www.hoosierdata.in.gov/dpage.asp?id=39&view_number=2&panel_number=2); Michigan (note that these are 2010 and 2020 figures) at: <http://milmi.org/?PAGEID=67&SUBID=201>; Minnesota at <https://apps.deed.state.mn.us/lmi/oes/Results.aspx>; Ohio at: <http://ohiolmi.com/proj/OhioJobOutlook.htm>; and Wisconsin at: <http://worknet.wisconsin.gov/worknet/daocccprj.aspx?menuselection=da>.

<sup>13</sup> For Managers, all others 2014 estimate not available for Minnesota.

<sup>14</sup> For Transit and Railroad Police, 2014 estimates not available for Indiana, Michigan, Wisconsin.

<sup>15</sup> Transportation Security Screeners, 2014 estimates not available for Illinois and Ohio.

Table 7 demonstrates how important it is for educators and transportation organizations in Region V, and indeed across the country, to be preparing students for careers as *Logisticians* and *Freight Forwarders*. Both occupations are expected to see increases. For *Logisticians* 19.6 percent and for *Freight Forwarders*, more than 16.8 percent, which translates to nearly 6,589 additional positions across the region by 2022.

*Software Developer, Applications* is also another high growth occupation at 19 percent change in 2022 with projections of 18,000 jobs. This job, however can be found in all sectors. A Burning Glass query can help to determine the number of jobs in the transportation sector.

A similar occupation that crosses many sectors is the *General and Operations Manager*. In 2022, it is projected that there will be an additional 28,000 jobs. This occupation is expected to grow at 9 percent.

Finally, occupational data and projections were analyzed at the state level to identify differences in the workforce and potential workforce needs across Region V. Table 8 breaks down transportation occupations with the greatest expected increases and decreases in employment by state. Examining changes in the transportation workforce this way allows us to see similarities and differences across the region.

Illinois, Indiana, Minnesota, and Wisconsin are expected to demonstrate robust increases (up to 20 percent) in some occupations such as *Construction Laborers, Operating Engineers, Laborers, Freight, Stock, and Hand Material Movers* but decreases in railroad occupations, *Transportation Security Screeners, Transportation Planners*, and certain other occupations. For example, Michigan is expected to demonstrate good (11 percent) increases in truck drivers but large decreases in *Machine Feeders and Offbearers*. This occupation is also expected to decrease by more than six percent in Minnesota.

These similarities could indicate that efforts to train and recruit employees in these occupations would be beneficial region wide. Understanding the workforce across states can help identify areas where coordination of efforts would be useful to transportation stakeholders.

**Table 8. Transportation Occupations with Greatest Expected Increases and Decreases in Employment in Region V**

State	SOC Code	Occupation Title	No. of Employees, 2012	Projected No. of Employees, 2022	Change (Number)	Percent Change
Illinois	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	127,888	148,385	20,497	16.03
	47-2061	Construction Laborers	49,807	59,063	9,256	18.58
	53-3032	Truck Drivers, Heavy and Tractor-Trailer	67,747	76,811	9,064	13.38
	47-4061	Rail-Track Laying and Maintenance Equipment Operators	1,539	1,533	-6	-0.39
	19-3099	Transportation Planners	1,120	1,093	-27	-2.41
	53-4031	Railroad Conductors and Yardmasters	3,107	3,028	-79	-2.54
Indiana	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	58,298	67,222	8,924	15.31
	53-3032	Truck Drivers, Heavy and Tractor-Trailer	45,004	49,651	4,647	10.33
	47-2061	Construction Laborers	14,659	17,234	2,575	17.57
	17-2121	Marine Engineers	24	27	3	12.5
	19-3099	Transportation Planners	216	219	3	1.39
	33-9093	Transportation Security Screeners	399	366	-33	-8.27
Michigan	53-3032	Truck Drivers, Heavy and Tractor-Trailer	48,610	54,070	5,460	11.2
	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	61,790	66,130	4,340	7
	13-1199	Customs Brokers	40,300	44,130	3,830	9.5
	53-4021	Railroad Brake, Signal, and Switch Operators	330	310	-20	-6.3
	53-7063	Machine Feeders and Offbearers	2,870	2,520	-350	-12.4
	53-3022	Bus Drivers, School or Special Client	15,980	15,560	-420	-2.6
Minnesota	53-3032	Truck Drivers, Heavy and Tractor-Trailer	35,935	38,478	2,543	7.1
	47-2061	Construction Laborers	11,107	12,969	1,862	16.8
	47-2073	Operating Engineers and Other Construction Equipment Operation	8,351	9,759	1,408	16.9

State	SOC Code	Occupation Title	No. of Employees, 2012	Projected No. of Employees, 2022	Change (Number)	Percent Change
	53-4011	Locomotive Engineers	849	807	-42	-4.9
	53-4031	Railroad Conductors and Yardmasters	771	713	-58	-7.5
	53-7063	Machine Feeders and Offbearers	1,588	1,488	-100	-6.3
Ohio	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	101,050	114,220	13,170	13
	53-3032	Truck Drivers, Heavy and Tractor-Trailer	70,010	75,650	5,640	8.1
	47-2061	Construction Laborers	30,260	35,830	5,570	18.4
	19-3099	Transportation Planners (Social Scientist and Related)	1,410	1,300	-110	-7.8
	53-4011	Locomotive Engineers	1,490	1,260	-230	-15.4
	53-4031	Railroad Conductors and Yardmasters	2,590	2,170	-420	-16.2
Wisconsin	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	56,227	60,119	3,892	6.92
	53-3032	Truck Drivers, Heavy and Tractor-Trailer	47,304	51,112	3,808	8.05
	47-2061	Construction Laborers	13,900	16,515	2,615	18.81
	49-3023	Automotive Service Technicians and Mechanics	13,346	13,360	14	.1
	17-2121	Marine Engineers	81	91	10	12.35
	53-7081	Refuse and Recyclable Material Collectors	2,299	2,269	-30	-1.3

Sources: State 2012–2022 Employment Figures and Projections, <https://www.bls.gov/oes/Tables.htm>. “--” indicates that data were not available from the identified source.

2012 and 2014 employment data and projections were gathered state-by-state from the following sources:

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Michigan (note that these are 2010 and 2020 figures) at: <http://milmi.org/?PAGEID=67&SUBID=201>;

Minnesota at <https://apps.deed.state.mn.us/lmi/oes/Results.aspx>;

Ohio at: <http://ohiolmi.com/proj/OhioJobOutlook.htm>; and

Wisconsin at: <http://worknet.wisconsin.gov/worknet/daocprj.aspx?menuselection=da>.

## Key Occupations in the Midwest

A careful review of labor market data, in-person and phone interviews, labor site visits, and summits uncovered trends in the midwestern transportation labor market in the aftermath of the Great Recession and uneven recovery. These methods include:

- Real-time labor market data
- Archived U.S. Census data
- Bureau of Labor Statistics data
- Two stakeholder workshops with more than 150 participants representing all nine MTWC states and stakeholder groups.
- Interviews with:
  - Trucking company executives
  - Technical and vocational instructors and executives
  - Major metropolitan area public transit human resource executives from Milwaukee
  - Manufacturers and commerce association representatives
  - Concrete and engineering trade group representatives
  - Workforce board executives
  - School district human resource managers
  - State department of transportation human resource managers

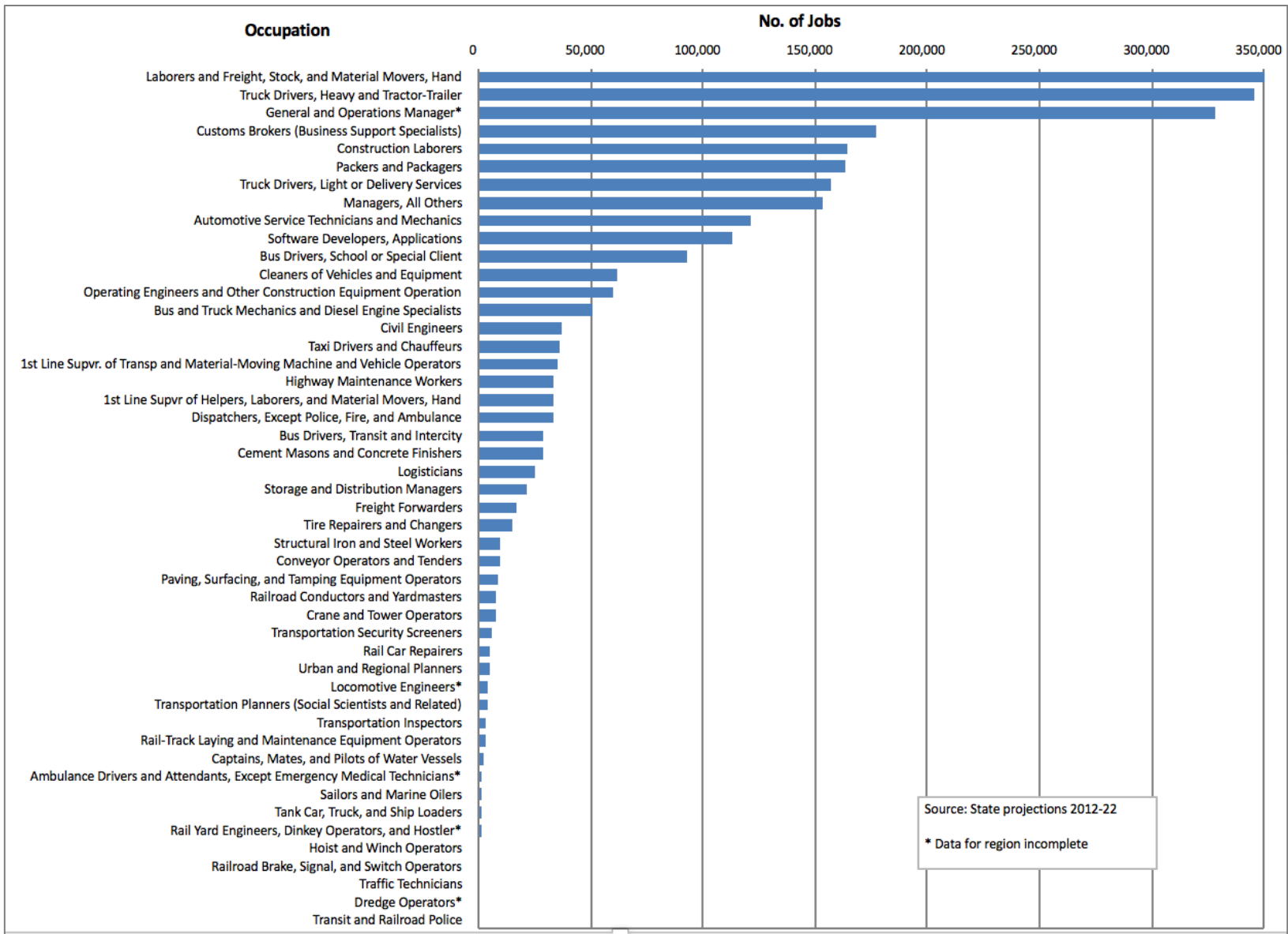
Demand for certain transportation occupations has declined in the Midwest (railroads), but highway occupations, notably light and heavy truck drivers and support staff such as diesel mechanics have surged. These occupations are experiencing enormous difficulty across the board, in both the public and private sectors, attracting qualified personnel. There are compelling arguments on both the market and labor side for this absence of qualified applicants.

**Table 9: Criteria for Prioritizing Transportation Occupations in Region V**

Criteria	Rationale for Inclusion
Increasing employee demand/High growth occupation	<ul style="list-style-type: none"> <li>• Examine gross percentage of demand change to identify occupations with highest percentage of expected growth.</li> <li>• Eliminate occupations expected to decrease in number of employees.</li> </ul>
Established high demand for employees	<ul style="list-style-type: none"> <li>• Examine historic, current, and future number of employees in an occupation.</li> <li>• Select occupations with greatest number of employees or job openings—positions that must be filled in these occupations.</li> </ul>
Future demand for employees	<ul style="list-style-type: none"> <li>• Project data from projects or programs intended to enhance existing transportation network.</li> <li>• Identify occupations to fill expected needed positions.</li> </ul>
Challenges in recruiting or retaining employees	<ul style="list-style-type: none"> <li>• Gather input from stakeholders regarding occupations with traditional challenges in filling or keeping filled.</li> <li>• Selected occupations with these problems because occupations may benefit from additional attention.</li> </ul>

Researchers used high-demand, high-wage, and high-skill metrics as criteria for identifying priority occupations.

Figure 4–7 illustrate the steps in our analysis of the transportation workforce in the Midwest. Figure 4 shows the relative demand for workers to fill various transportation jobs across Region V. Figure 5 shows the current educational attainment of the workforce in these jobs. This Figure shows that many jobs are held by workers without postsecondary education. As these workers retire, their positions are being filled by skilled and credentialed workers. Figure 6 shows the distribution of wages in transportation occupations. Finally, Figure 7 plots the demand for transportation workers by wage and skills. Some occupations, such as civil engineers and planners, enjoy high starting salaries but also require advanced education. The majority of these occupations do not require a high educational attainment but may pay above-average wages, such as truck drivers. Packers and packagers rank lowest in both categories. Crucial to the work of the MTWC is the identification of pathways from lower wage to higher wage occupations. Table 10 lists the resulting prioritized occupations.



Source: State projections 2012-22  
 \* Data for region incomplete

Figure 4: Transportation Jobs in Region V



### Education Attainment of Incumbent Transportation Workers 2010-2011 (US)

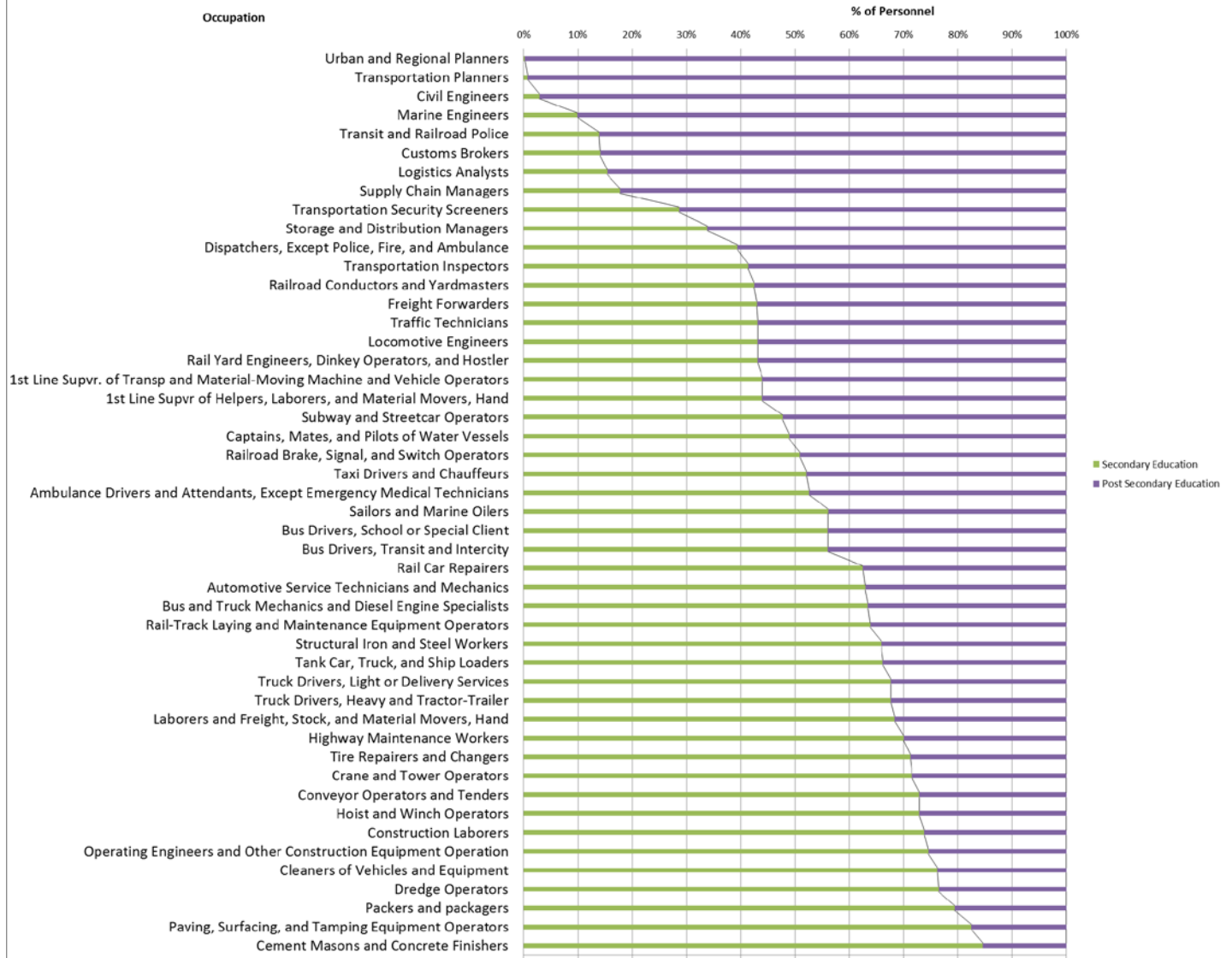


Figure 5: Education Attainment of Workers in Transportation Occupations in Region V

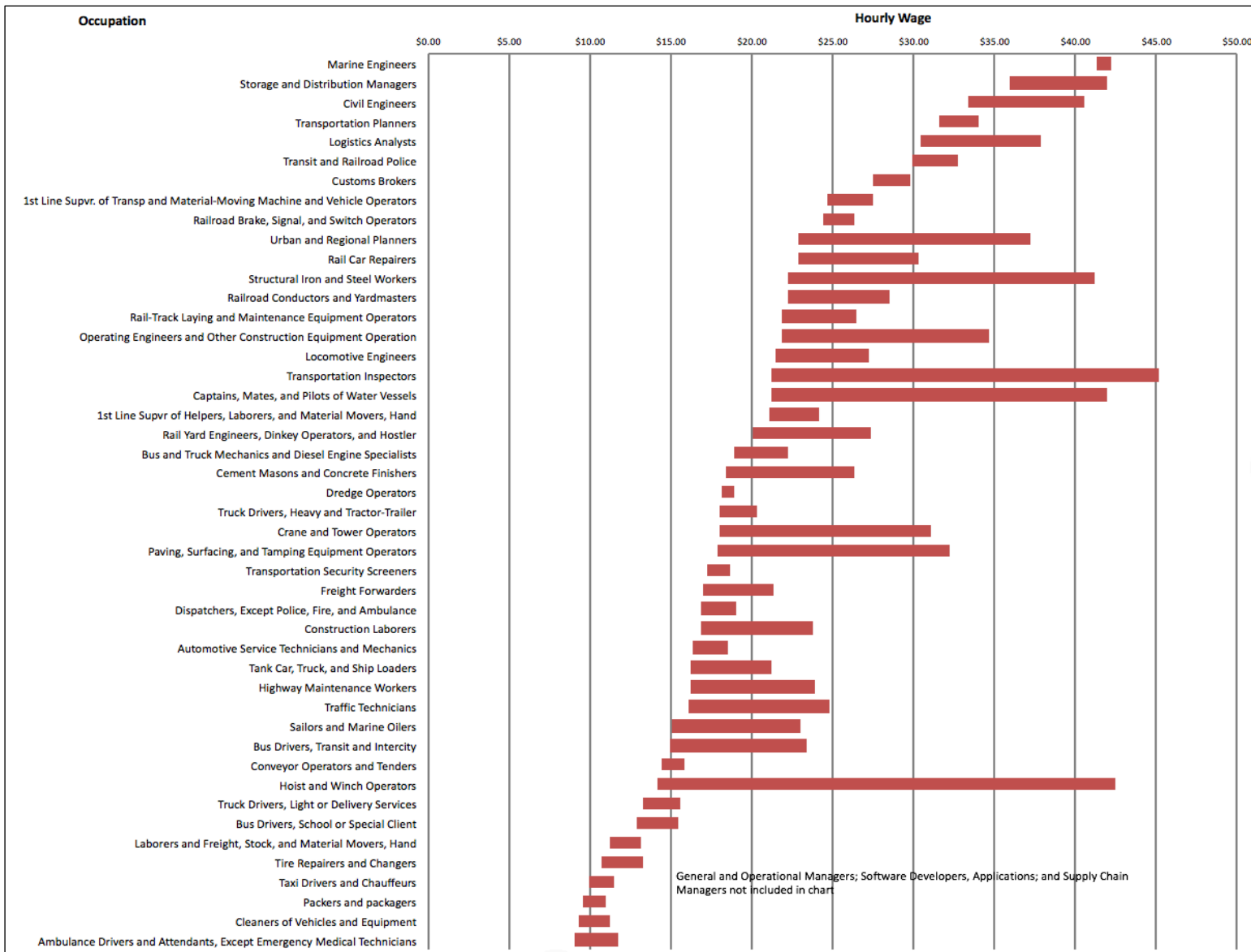


Figure 6: Range of Hourly Wage for Transportation Occupations in Region V

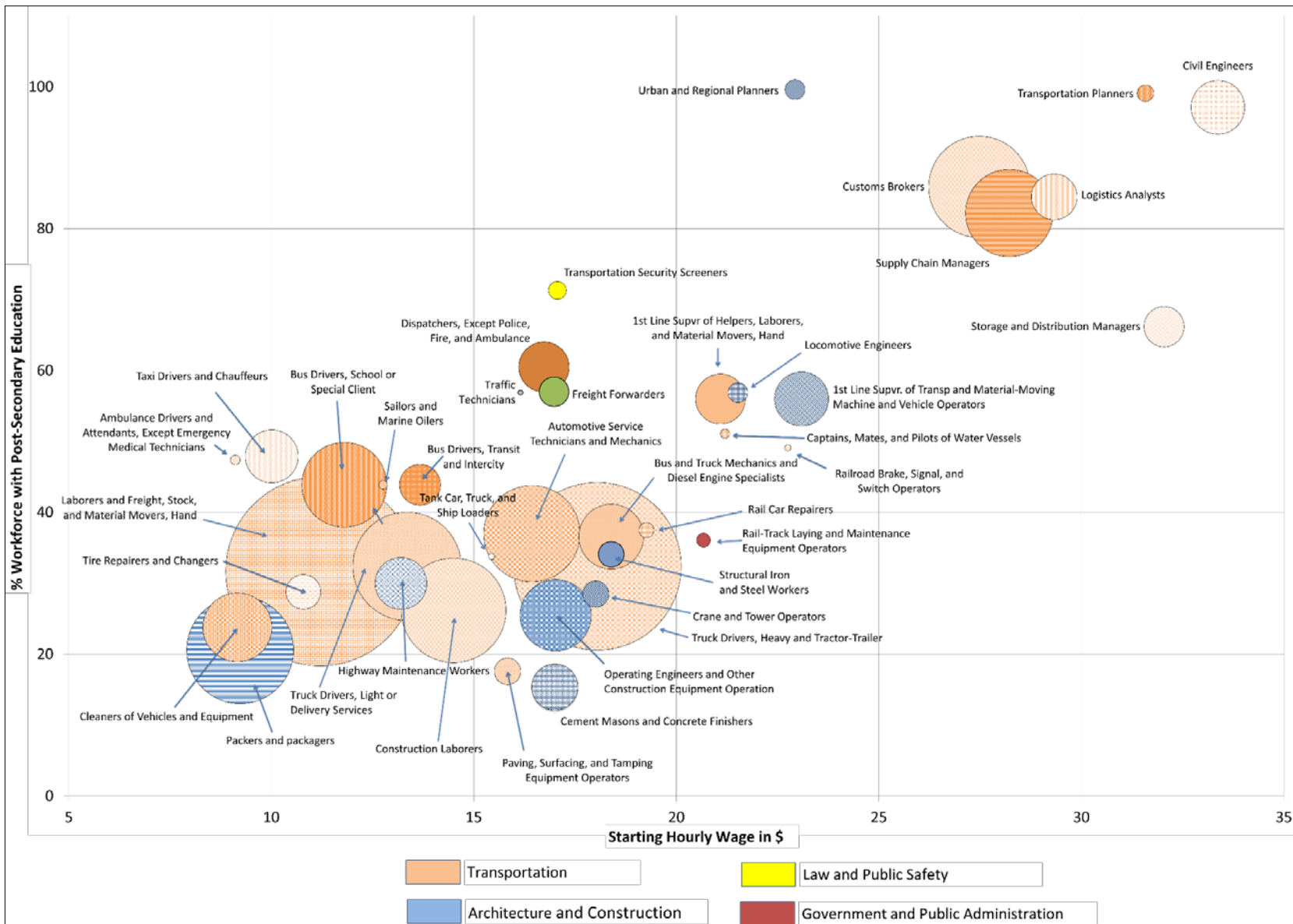


Figure 7: Occupational Demand and Wage in Region V

**Table 10. Priority Occupational Projections for Region V**

SOC Code	SOC Occupation Title	# of Employees 2012 <sup>a</sup>	Projected # of Employees 2022 <sup>a</sup>	Change in # of Employees	Region V Percent Change 2012-2022	National Percent Change 2012-2022 <sup>b</sup>
53-1021	1 <sup>st</sup> Line Supervisor of Helpers, Laborers, and Material Movers, Hand	30,547	33,669	3,122	10.22	8.5
53-1031	1 <sup>st</sup> Line Supervisor of Trans and Material Moving Machine and Vehicle Operators	32,596	34,960	2,364	7.25	8.6
49-3023	Automotive Service Technicians and Mechanics	113,539	120,942	7,403	6.52	8.6
49-3031	Bus and Truck Mechanics, Diesel engine specialists	47,573	50,933	3,360	7.06	8.6
53-3021	Bus Drivers, Transit and Intercity	27,454	28,849	1,395	5.08	9.8
17-2051	Civil Engineers	32,586	37,344	4,758	14.60	19.7
47-2061	Construction Laborers	140,073	164,111	24,038	17.16	24.3
53-3032	Heavy and Tractor-Trailer Truck Drivers	314,610	345,772	31,162	9.90	11.3
13-1081	Logisticians	21,261	25,437	4,176	19.64	21.9
47-2073	Operating Engineers and Other Construction Equipment Operation	52,592	59,802	7,210	13.71	18.9
47-2071	Paving, Surfacing, and Tamping Equipment Operators	7,350	8,440	1,090	14.83	19.7
11-3071	Transportation, Storage and Distribution Managers	20,462	21,776	1,314	6.42	4.9

Sources: State 2012–2022 Employment Figures and Projections, <https://www.bls.gov/oes/Tables.htm>. “--” indicates that data were not available from the identified source. 2012 and 2014 employment data and projections were gathered state-by-state from the following sources:

Illinois at: [http://www.ides.illinois.gov/LMI/Pages/Employment\\_Projections.aspx](http://www.ides.illinois.gov/LMI/Pages/Employment_Projections.aspx);

Indiana at: [http://www.hoosierdata.in.gov/dpage.asp?id=39&view\\_number=2&panel\\_number=2](http://www.hoosierdata.in.gov/dpage.asp?id=39&view_number=2&panel_number=2);

Michigan (note that these are 2010 and 2020 figures) at: <http://milmi.org/?PAGEID=67&SUBID=201>;

Minnesota at <https://apps.deed.state.mn.us/lmi/oes/Results.aspx>;

Ohio at: <http://ohiolmi.com/proj/OhioJobOutlook.htm>; and

Wisconsin at: <http://worknet.wisconsin.gov/worknet/daocprj.aspx?menuselection=da>.

## **Analysis of Key Occupations in Region V**

This section provides information about each key occupation identified across the region. For each occupation, types of employers and educational requirements for employees are given. For the most part, Region V's employment growth lags the nation except for two occupations: *1<sup>st</sup> Line Supervisor of Helpers, Laborers, and Material Movers, Hand*; and *Transportation, Storage and Distribution Managers* (Table 9).

### ***1<sup>st</sup> Line Supervisor of Transportation of Helpers, Laborers, and Material Movers, Hand***

This occupation directly supervises and coordinates the activities of helpers, laborers, or material movers. Job titles associated with this occupation include: Floor Supervisor, Front Line Supervisor, Maintenance Supervisor, Parts Manager, Receiving Lead, Receiving Manager, Receiving Supervisor, Shipping Manager, Shipping Supervisor, and Terminal Operations Manager. Duties for this occupation include: monitoring work environment to ensure safety or adherence to specifications; monitoring loading processes to ensure they are performed properly; notifying others of emergencies, problems, or hazards; resolving personnel problems, and, planning work operations. In Region V, this occupation is projected to grow by 10 percent by 2022.

### ***1<sup>st</sup> Line Supervisor of Transportation and Material–Moving Machine and Vehicle Operators***

This occupation directly supervises and coordinates activities of transportation and material-moving machine and vehicle operators and helpers. Job titles associated with this occupation include: Dock Supervisor, Driver Manager, Fleet Manager, On Car Supervisor, Operations Supervisor, Street Supervisor, Supervisor, Trainmaster, Transportation Supervisor, and Warehouse Supervisor.

Duties for this occupation include enforcing rules and regulations, planning work assignments and equipment allocations, inspecting materials and vehicles, and reviewing orders, schedules, blueprints, and other forms and documents to ensure proper completion of tasks and assignments. In the Midwest, this occupation has a projected employment change of 7.25 percent by 2022, resulting in an expected 2,364 additional employees in Region V.

### ***Automotive Service Technicians and Mechanics***

This occupation repairs automobiles, trucks, buses, and other vehicles. Master mechanics repair virtually any part on the vehicle or specialize in the transmission system. Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Job titles under this occupation may include: Auto Technician, Automobile Technician, Automotive Service Technician, Automotive Technician, Certified ASE Master Automotive Technician (Certified Automotive Service Excellence Master Automotive Technician), Master Automotive Technician, Master Technician, Mechanic, Shop Foreman, or Truck Technician. In Region V, this occupation looks to add over 7,400 jobs by 2022.

### ***Bus and Truck Mechanics and Diesel Engine Specialists***

With a 2012 reported median income of \$42,320, mechanics and driving specialists represented 250,800 jobs nationwide. Expect to see a 7 percent increase in Region V. Certification from the National Institute for Automotive Service Excellence adds value to employees within this industry. The BLS indicates that workers certified through this program, or other comparable programs, will see a larger increase in opportunity than workers without advanced training. Typical employers include truck transporters, government (all levels), repair and maintenance firms, motor vehicle and motor vehicle parts and supplies merchant wholesalers, and manufacturers.

### ***Bus Drivers, Transit and Intercity***

*Bus Drivers, Transit and Intercity* are responsible for driving bus or motor coaches, including both regular route operations and charter/private operations. These employees may be required to help passengers with baggage and provide high quality customer service, while also driving and parking vehicles, inspecting vehicles, and making minor repairs to vehicles such as changing tires. This occupation requires a Commercial Driver's license. Many employers will provide training for Bus Drivers. When examining the occupational projections for *Bus Drivers, Transit and InterCity*, Region V is expected to grow by 5 percent between 2012 and 2022.

### ***Civil Engineers***

Civil engineers are responsible for the design, construction and oversight of broad-range construction projects encompassing the infrastructure of communities. A bachelor's degree is required for entry into this profession. According to BLS and other sources, this occupation is projected to experience faster than average growth in the United States, largely due to aging infrastructure. The types of firms that employed the most civil engineers in 2012, according to BLS, were architectural, engineering, and related services; state government, excluding education and hospitals; local government, excluding education and hospitals; nonresidential building construction; and federal government, excluding the postal service. A bachelor's degree is required for this occupation.

### ***Construction Laborers***

Construction laborers perform tasks requiring physical labor on a variety of construction sites. This mainly consists of preparing and cleaning construction sites, but it can also include loading and unloading building materials, operating or tending construction equipment and machines, and controlling traffic around work zones. Construction laborers may operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. They may clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, and clean up rubble, debris and other waste materials. Sample titles include: Construction Laborer, Construction Worker, Curb and Gutter Laborer, Skill Labor, Union Laborer. In Region V, construction laborers have a bright outlook with a projected growth rate of 17 percent by 2022. Iowa has a greater than national growth projection at 25.7 percent.

Laborers and helpers work in all aspects of transportation in both the private and public sectors, and demand for these workers historically mirrors levels of overall construction activity. Construction

laborers and helpers generally learn their trade through short-term, on-the-job training or two- to four-year apprenticeship programs. There are no specific education requirements, but wages are fairly competitive at \$29,160 in 2012, according to the BLS.

### ***Heavy and Tractor-Trailer Truck Drivers***

This occupation is expected to experience average growth (about 11 percent nationally and 9.9 percent in Region V). Requirements vary within this occupation, but they always require at least short-term training and a Commercial Drivers License (CDL). The CDL is also a requirement for other occupations that move heavy equipment, such as diesel mechanics, operating engineers, and bus drivers. *Heavy Truck Drivers* can be found across many industries such as mining and oil and gas. Firms hiring drivers are general freight trucking, specialized freight trucking, and merchant wholesalers of nondurable goods. *Heavy and Tractor-trailer Truck Drivers* move freight over short and long distances.

Project interviews and labor market data reveal an overwhelming, seemingly permanent demand for heavy and tractor-trailer drivers. Market-side solutions include increasing participation by females, minorities, and recent immigrants in the truck driving profession. However, the following industry factors contribute to the driver shortage:

- High cost of entry into the truck driving profession (up to \$9,000 to acquire a CDL license at a truck driving school).
- Equipment for the trucking industry is expensive, placing pressure on wages. Larger firms don't keep trucks more than three or four years and prices keep going up—\$150,000 for a modern tractor-trailer, \$40,000 for a dry van.
- Wages are stagnant. Firms decided not to raise salaries when fuel costs were high; as fuel costs dropped, wages have not risen.
- Women, minorities, and immigrants could play key roles. One truck driving school reports 34 percent of students are women and that the school sees more Caucasian women than Caucasian men. However, poor work-life balance, especially lack of childcare, is a barrier.
- Federal testing and regulations include blood pressure, sleep apnea, stent and cardiac issues, and diabetes. Sleep apnea test costs vary but can have up to \$3,500 in costs not covered by the company.
- Public transit and DOT officials report difficulty maintaining a quality base of drivers and mechanics due to competition from the private and public sector (cities and counties with better pay). Diesel mechanics and drivers are unenthusiastic about night shifts.

In 2016, University of Wisconsin-Madison researchers participated in the Illinois Workforce Innovation Board's Transportation Distribution and Logistics Task Force aimed at increasing the number of workers in the truck driving profession. Data shared revealed that there are more than enough drivers being trained in Illinois. The real issue is retention. Recent research on truck driver exits revealed that fleet manager or dispatcher relationships are key factors in retention. Another market side solution, that promises a good return on investment for industry, is training for fleet managers or dispatchers (Strategic Programs Inc., 2017).

Truck driver occupation issues are not unique to the Midwest, of course. The entire country is experiencing a shortage of drivers.

## ***Logisticians***

Logistician employment growth will be driven by the important role logistics plays in the transportation of goods in a global economy. Employment in this area is projected to grow 21.9 percent from 2012 to 2022, much faster than the average for all occupations. Logisticians analyze and coordinate a transport organization's supply chain, the system that moves products from supplier to consumer. They must manage the entire life cycle of a product, including acquisition, distribution, allocation, and delivery. The BLS considers this job to be stressful because logistical work is fast paced. Although an associate's degree may be sufficient for some logistician jobs, a bachelor's degree is typically required for most positions. Median annual wages for logisticians was \$72,780 in 2012, and they are generally employed by manufacturing firms, the federal government (excluding the postal service), professional, scientific, and technical service firms, transportation equipment manufacturers, and land, air, and marine product and parts manufacturers.

*Logisticians* is an umbrella designation that groups the following O\*NET occupations: *Logistics Analysts* and *Logistics Engineers*.

*Supply Chain Managers* are closely related to Logisticians, but are currently grouped under the *Managers, all Other SOC* Category and it is difficult to extract data on employment numbers and projections.

## ***Operating Engineers and Other Construction Equipment Operation***

Operating engineers and other construction equipment operators are responsible for operating various types of power construction equipment such as motor graders, bulldozers, scrapers, compressors, pumps, tractors, or front-end loaders. They may also be responsible for repairing and maintaining equipment in addition to operating. Example job titles within this occupation in the Midwest include Operating Engineer, Operating Engineer Apprentice, Construction Equipment Operator, or Heavy Equipment Operator. In Region V, projections show that this occupation is expected to increase by 7,300 employees by 2022. Not all the employees within this occupation are in transportation organizations, but many transportation or transportation-related companies will see the increased need for these employees to assist in things like road construction and maintenance, bridge building, or other activities that require the use of heavy equipment.

## ***Paving, Surfacing, and Tamping Equipment Operators***

Workers in this occupation operate equipment used for applying concrete, asphalt, or other materials to road beds, parking lots, or airport runways and taxiways, or equipment used for tamping gravel, dirt, or other materials. It includes concrete and asphalt paving machine operators, form tampers, tamping machine operators, and stone spreader operators. Job titles reported for this occupation include: Asphalt Paver Operator, Asphalt Raker, Equipment Operator (EO), Heavy Equipment Operator, Maintenance Equipment Operator (MEO), Operator, Paver Operator, Roller Operator, Screed Operator, and Truck Driver.



### ***Transportation, Storage and Distribution Managers***

This occupation plans, directs, or coordinates the transportation operations within an organization or the activities of organizations that provide transportation services. Sample of reported job titles include: Director of Operations, Fleet Manager, Freight Coordinator, Global Transportation Manager, Traffic Manager, Train Operations Manager, Trainmaster, Transportation Director, Transportation Manager, and Transportation Supervisor. Some employers may require a bachelor's degree. National salaries average \$44 an hour. These jobs are expected to grow by 6.4 percent by 2022 in Region V representing approximately 1,300 new jobs.

### **Skill Needs for Key Occupations in the Midwest**

Identifying skill needs for these occupations allows a clearer understanding of the requirements and expectations related to specific occupations, and for guidance into proper training and employment consistent with these skills and abilities.

Table 10 lists Region V's priority occupations and the top skills identified for each, as well as additional required skills as identified by data collected from O\*NET and Burning Glass. Many of these skills can be applied across multiple occupations but other occupations require unique and highly industry-specific skills.

While relevant work experience is important to many employers, some offer on-the-job training. Workforce programs offering training support for these jobs is also available, although the decline of public funding region-wide is impacting the entry of many individuals into the workforce, notably minorities and those of limited means.

Interviews in the private and public transportation sectors have also identified the lack of additional, essential skills:

- Communications
- Customer service
- Problem solving and critical thinking
- Decision making
- Prioritizing tasks

These, however, are skills perhaps universally lacking in an unprepared U.S. workforce and not unique to the transportation workforce.

**Table 11. Skill Requirements for Priority Occupations**

Occupation	Top Skills Highlighted in Job Postings	Additional Required Skills
<b>STEM</b>		
Civil engineers	Computer-aided design (CAD), engineering design, inspection, construction management, civil 3D	Mathematics, critical thinking, complex problem solving, reasoning, decision making
<b>CTE/Vocational or Technical</b>		
Automotive Service Technicians and Mechanics	Inspect, troubleshoot, repair	Develop estimates, recording, communicate in non-technical manner
Bus and Truck Mechanics and Diesel Engine Specialists	Repair, inspection, vehicle maintenance, hand tools, fuel systems	Machine troubleshooting, equipment monitoring, manual and finger dexterity
Bus Drivers, Transit and Intercity	Math and computer skills, driving, customer service focused	Interpret bus schedules
Heavy and Tractor-Trailer Drivers	Inspection, repair, product delivery, forklift operation, record keeping	Equipment operation, control and monitoring, critical thinking, control precision, far and near vision, reaction time
Operating Engineers and Other Construction Equipment Operation	Equipment operation, heavy equipment, repair, machinery	Operational control and monitoring, personnel monitoring, equipment maintenance, control precision, depth perception
<b>Skilled Laborer</b>		
1 <sup>st</sup> Line Supervisor of Helpers, Laborers, and Material Movers, Hand	Monitor processes, manage personnel, plan, operations, forklift operation	Maintains procedural manuals, safety, staff training
1 <sup>st</sup> Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	Scheduling, forklift operation, inspection, operations management, logistics	Management of personnel and resources, critical thinking, oral and written comprehension, expression, problem sensitivity, deductive reasoning
Construction Laborers	Hand tools, power tools, machinery, repair	Coordination, machine operation, manual dexterity, arm/hand steadiness, static strength
Paving, Surfacing, and Tamping Equipment Operators	Physical strength, basic computer, communication skills, use of hand tools, power tools and hydraulic equipment	Project management, work independently
<b>Supply Chain and Logistics</b>		
Logisticians	Logistics, procurement, supply chain, purchasing, inventory management	Critical thinking, complex problem solving, oral comprehension and expression, problem sensitivity
Transportation, Storage and Distribution Managers	Computer, critical thinking, inventory management, management, planning	Phone, supervisor

Sources: O\*NET and Burning Glass Technologies

## Emerging Occupations

The Department of Labor/ Employment and Training Administration sponsors O\*NET, the nation’s occupational database. The database provides an online application that aggregates other occupational data such as wages, job openings, skills, etc., and supports career exploration tools for students and job seekers, such as My Next Move, Mi Próximo Paso, and My Next Move for Veterans.

While technology’s impact is not included in the Bureau of Labor Statistics’ ten-year projections of demand (U.S. Bureau of Labor Statistics, n.d.), the reality is that new skills and competencies will be tied to the advancements being made in connected and automated cars and trucks (CAVs), manipulation of big data, robotics in heavy equipment machinery, drones, and new fuels market penetration (Mohaddes & Sweatman, 2016).

As new and emerging occupations develop, new O\*NET codes are assigned. While these occupations are recognized due to industry demand, or technological change, a corresponding SOC code from the Bureau of Labor Statistics takes years to develop. In the meantime, occupations are grouped under an umbrella category. Because the data are aggregated, it is difficult to determine the demand or current employment of an emerging occupation. Emerging occupations in Transportation are listed in Table 12.

**Table 12: O\*NET 2010 Occupations in Transportation**

Occupation	Descriptions
Customs Brokers	Prepare customs documentation and ensure that shipments meet all applicable laws to facilitate the import and export of goods. Determine and track duties and taxes payable and process payments on behalf of client. Sign documents under a power of attorney. Represent clients in meetings with customs officials and apply for duty refunds and tariff reclassifications. Coordinate transportation and storage of imported goods.
Freight Forwarders	Research rates, routings, or modes of transport for shipment of products. Maintain awareness of regulations affecting the international movement of cargo. Plan for additional services such as storage and inland transportation.
Logistics Analysts	Analyze product delivery or supply chain processes to identify or recommend changes. May manage route activity including invoicing, electronic bills, and shipment tracing.
Logistics Engineers	Design and analyze operational solutions for projects such as transportation optimization, network modeling, process and methods analysis, cost containment, capacity enhancement, routing and shipment optimization, and information management.
Logistics Managers	Plan, direct, or coordinate purchasing, warehousing, distribution, forecasting, customer service, or planning services. Manage logistics personnel and logistics systems and direct daily operations.
RFID Specialists	Design and implement radio frequency identification device (RFID) systems used to track shipments or goods.
Supply Chain Managers	Direct, or coordinate production, purchasing, warehousing, distribution, or financial forecasting services and activities to limit costs and improve accuracy, customer service and safety. Examine existing procedures and opportunities for streamlining

	activities to meet product distribution needs. Direct the movement, storage, and processing of inventory.
Transportation Engineers	Develop plans for surface transportation projects according to established engineering standards and state or federal construction policy. Prepare plans, estimates, or specifications to design transportation facilities. Plan alterations and modifications of existing streets, highways, or freeways to improve traffic flow.
Transportation Planners	Prepare studies for proposed transportation projects. Gather, compile, and analyze data. Study the use and operation of transportation systems. Develop transportation models or simulations.

BLS periodically updates the SOC system, including changes in codes, titles, definitions, and new occupations or groups as well as deletions. For example, Transportation Planners, a new and emerging occupation in 2010 was assigned a unique O\*NET code (19-3099.01), different from Urban and Regional Planners (19-3051). The Transportation Planner occupation was assigned to the SOC code Social Scientists and Related Worker (19-3099). For the SOC system update in 2018, new transportation occupations (Table 13) were included reflecting the need for new skills and or changing models of delivery. New occupations that represents skills used in the transportation sector are listed in Table 14. Examples of these occupations include *Data Scientist*, and *Private Vehicle Driver*, reflecting the need for expertise in data analysis and shared mobility.

**Table 13: New Transportation Occupations in BLS 2018**

SOC Code	New Occupation
53-1040	First-Line Supervisors of Transportation and Material-Moving Workers
53-1044	First Line Supervisors of Transportation Passenger Attendants
53-1049	First Line Supervisors of Transportation Workers, All Other
53-3050	Passenger Vehicle Drivers
53-3051	Bus Drivers, School
53-3053	Shuttle Drivers and Chauffeurs
53-3054	Taxi Drivers
53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
53-6030	Transportation Service Attendants
53-6032	Aircraft Service Attendants

**Table 14: Other Related Occupations in BLS 2018**

SOC Code	New Occupation
13-1080	Logisticians and Project Management Specialists
13-1082	Project Management Specialists
13-1191	Sustainability Analysts
13-2022	Appraisers of Personal and Business Property
13-2054	Financial Risk Specialists
15-1243	Database Integration Architects
15-1252	Software Developers
15-1253	Software Quality Assurance Analysts and Testers

15-1255	Web or Digital Interface Designers
15-2050	Data Scientists

## Occupations of the Future - Inland Waterways

New inland waterway projects currently underway in the Midwest may significantly impact the labor market, especially the upgrading of the M-35 and M-55 Marine Highway Routes on the Mississippi and Illinois rivers connecting Chicago, Minneapolis and New Orleans. These and other routes connect every major metro area in the Midwest (Mid-America Freight Coalition, 2014).

Occupations with the greatest demand are expected to be barge personnel, deckhands, engineers, pilots, and captains. Because waterways are increasingly multi-modal, other inland waterway occupations include:

- Sailors and oilers
- Laborers and freight, stock, and materials movers, hand
- Industrial truck and tractor operators
- Tank car, truck, and ship loaders
- Material moving workers, all other
- First-line supervisors of transportation and material moving machine and vehicle operators
- Crane and tower operators
- Cargo and freight agents, and
- Ship engineers

This projected expansion will also likely result in a need for fleet modernization and system rehabilitation, which, in turn, will drive secondary economic activity such as increased manufacturing of marine equipment and vessels, as well as increased activity in niche marine construction projects.

Because most river operations firms are also privately held, they do not pursue shareholder value every quarter and make decisions for the long haul. This has resulted in generally good benefits and relatively high pay.

However, issues include:

- Seasonality. Operations slow throughout the region, but especially in the upper Midwest. Some occupations report six months idle.
- Work-life balance. Unless land-based, river jobs require being away from home for 28 days at a time, minimum.
- Lack of female, African American, and Hispanic diversity.
- Heavy workload, stringent daily schedules, exposure to the elements, unpredictable working conditions, and risk of injury.

## Demographic Trends and Forecasts for Region V

This research has focused primarily on labor market projections. However population projections should also be considered in light of several trends in workforce development—second careers for retirees, especially the baby boomer generation—and to determine any anomalies in gender distribution. Projections for Region V were assembled by the UW-Madison Applied Population Laboratory in December 2016.

Most states in the six-state region produce their own projections, or have them produced under contract. However, there are inconsistencies in launch dates and the time horizons into the future. The states' projections were first recalibrated to a common starting date of 7/1/2015, and then re-set as needed to 7/1/2020, 7/1/2025 and 7/1/2030. One state's projections (IL) were extended from their terminal date of 2025 to 2030.

In comparing the state-produced projections at 2015 to the Census Bureau's vintage 2015 population estimates, the latter were selected for the basis date because they provided methodologically consistent starting points. In addition, births for the 2010-2015 period have been less than originally projected (in all six states, as well as nationally), meaning that the states' own projections for young people are likely over-stated.

The cohort relationships indicated by the states' projections were applied to the 7/1/2015 base-year values to generate a revised set of projections for 2020, 2025 and 2030. For most age groups, the revisions are relatively small when compared to the states' original projection values.

Projections were made by five-year age groups and sex. The 2015-2030 age-sex population data were assembled using the Census Bureau's most recent state-level, age-sex population estimates and state-level projections series produced since the 2010 Census. Figures 8–11 show the population pyramids for Region V. The visualizations show that population growth is steady for all age groups except for baby boomers. By 2020, there will be a slightly larger female population for those aged 50 and over. Over time, by 2030, population overall grows slowly (Figure 14).

According to the Census, migration from the Midwest will continue to other parts of the country.

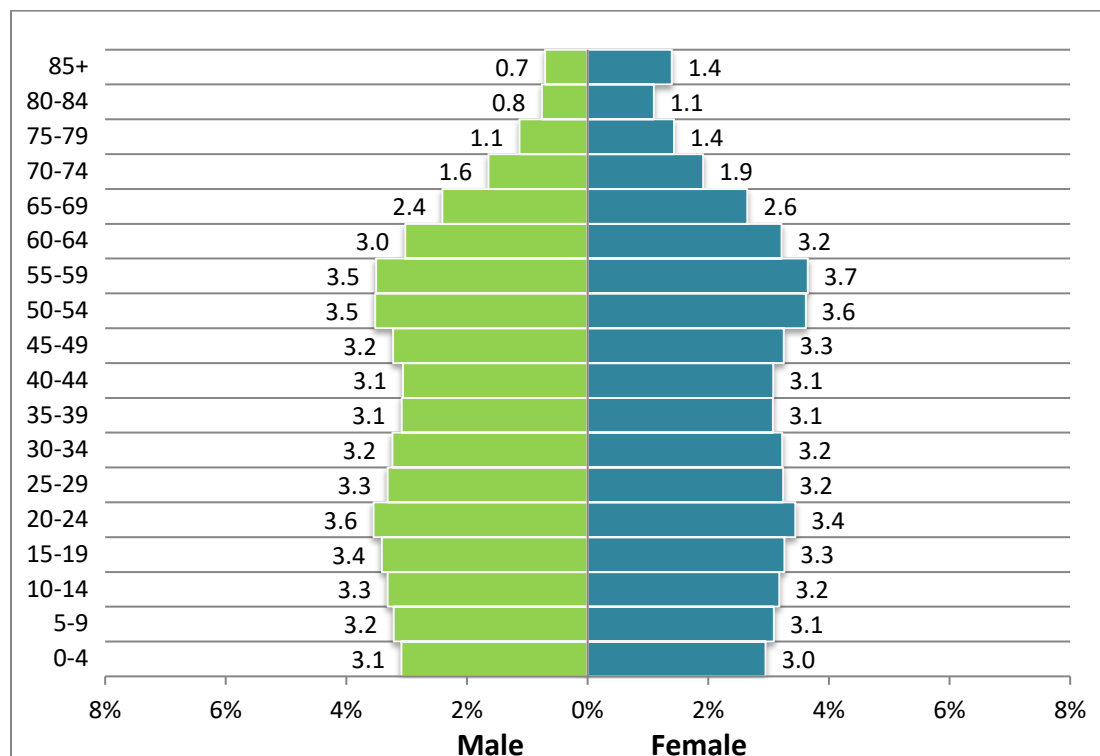


Figure 8. Region V Age and Gender, 2015

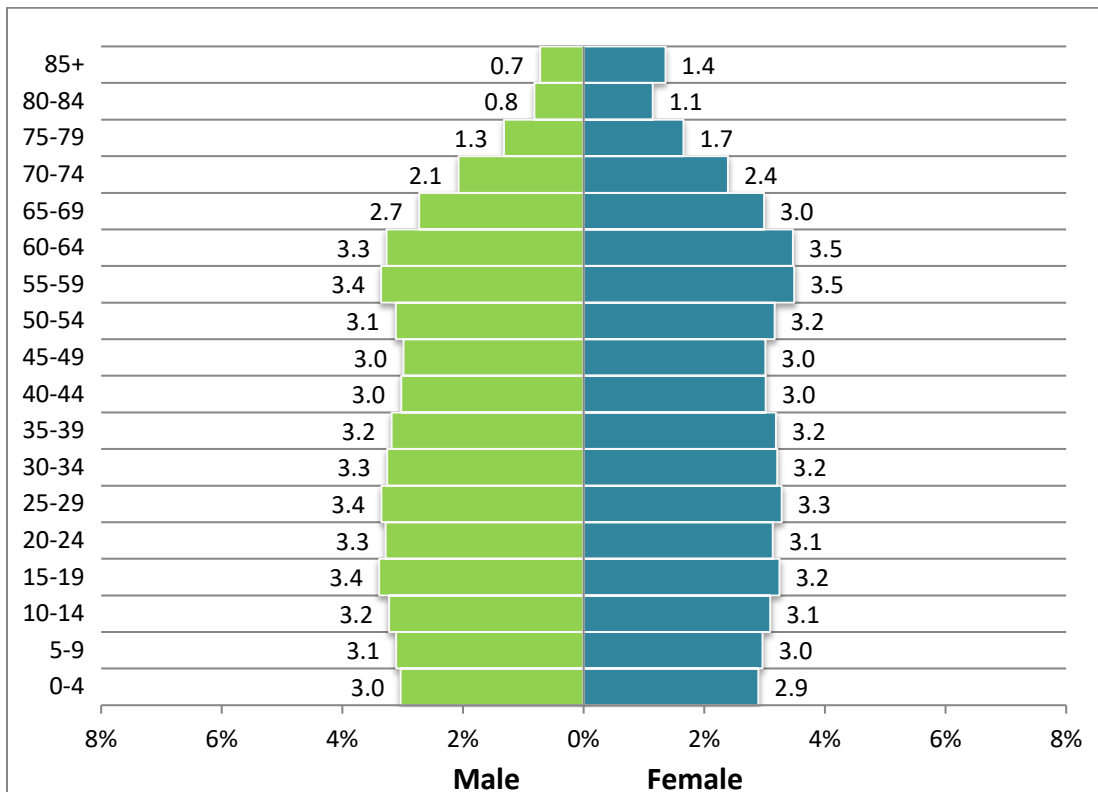


Figure 9. Region V Age and Gender, 2020

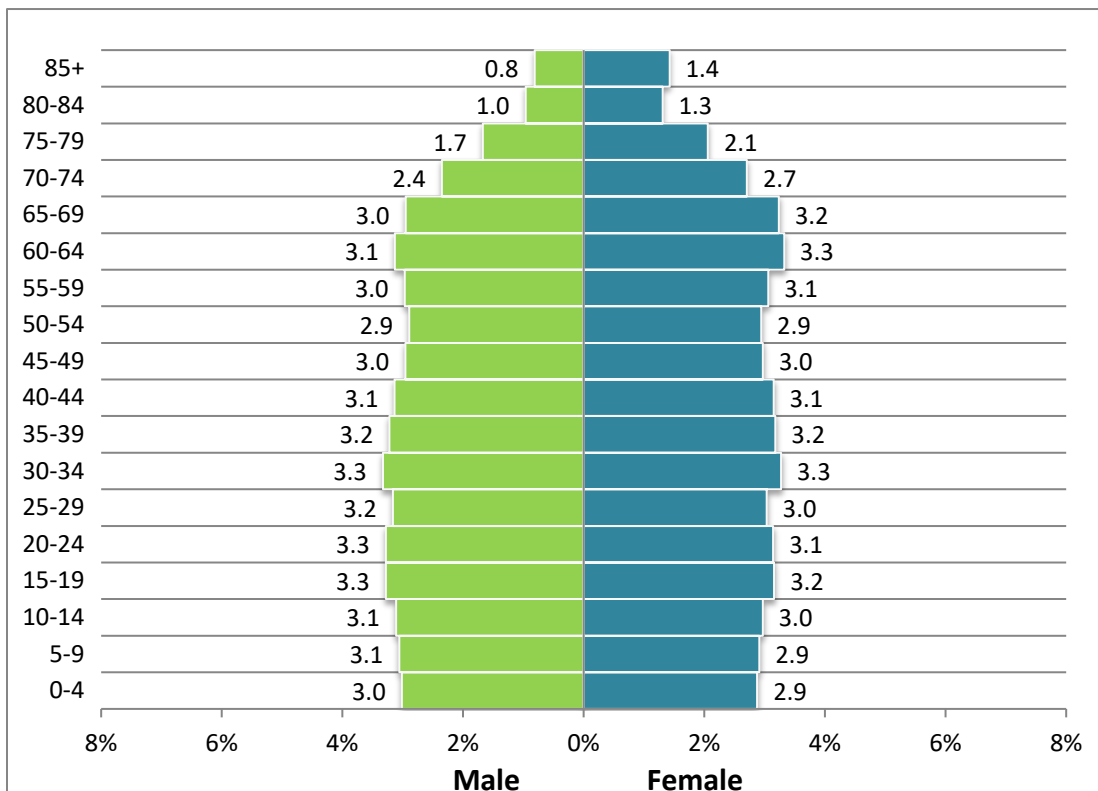


Figure 10: Region V Age and Gender, 2025

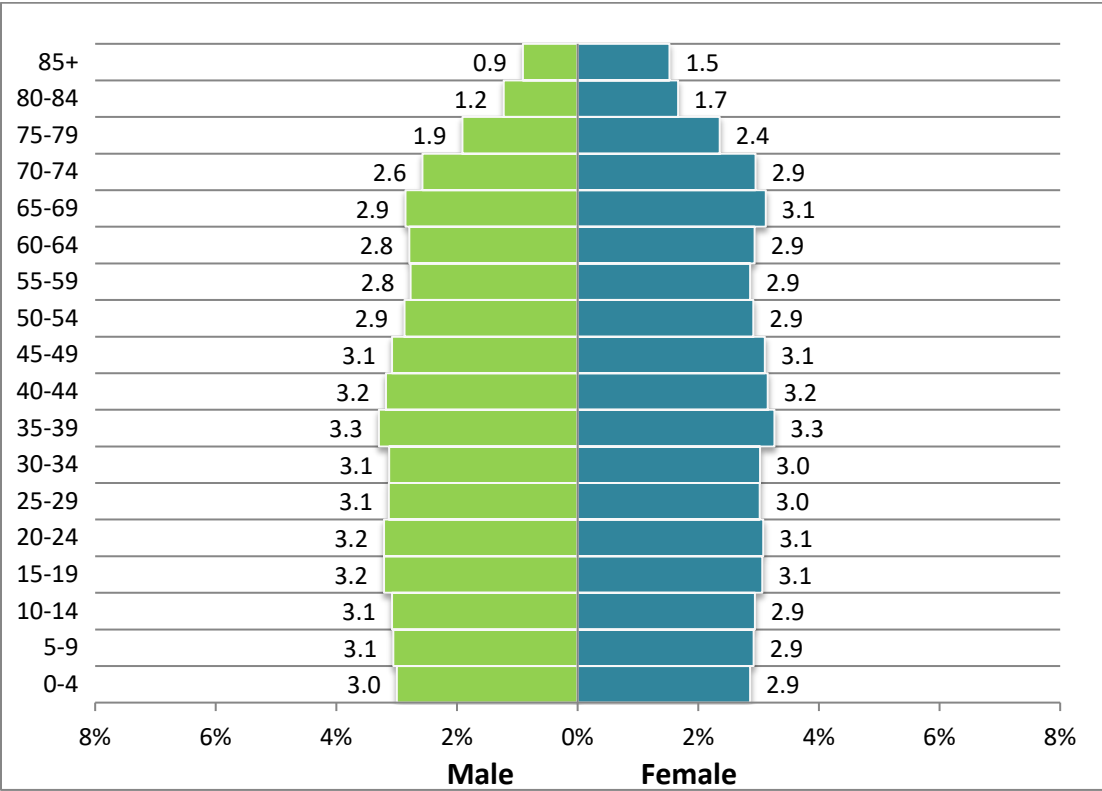


Figure 11: Region V Age and Gender, 2030



**Table 15: Population Estimates 2015 and Projections 2020-2030, by Age and Sex, Summation of Six States**

Age	7/1/15			7/1/20			7/1/25			7/1/30		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	1,615,570	1,542,710	3,158,280	1,606,600	1,533,100	3,139,700	1,611,800	1,538,000	3,149,800	1,615,500	1,539,900	3,155,400
5-9	1,682,180	1,614,950	3,297,130	1,645,200	1,570,100	3,215,300	1,632,800	1,557,200	3,190,000	1,647,800	1,571,600	3,219,400
10-14	1,735,030	1,661,010	3,396,040	1,706,200	1,637,000	3,343,200	1,663,000	1,586,600	3,249,600	1,659,600	1,582,500	3,242,100
15-19	1,784,520	1,705,690	3,490,210	1,793,900	1,718,800	3,512,700	1,753,100	1,688,200	3,441,300	1,730,900	1,650,500	3,381,400
20	366,130	352,240	718,370	371,200	351,500	722,700	374,300	355,800	730,100	369,000	351,300	720,300
21-24	1,489,900	1,447,060	2,936,960	1,366,900	1,308,100	2,675,000	1,379,000	1,323,700	2,702,700	1,360,200	1,307,200	2,667,400
25-29	1,734,710	1,695,370	3,430,080	1,775,800	1,736,600	3,512,400	1,689,900	1,623,000	3,312,900	1,687,200	1,625,600	3,312,800
30-34	1,692,980	1,686,140	3,379,120	1,724,400	1,696,700	3,421,100	1,778,200	1,749,200	3,527,400	1,684,500	1,629,500	3,314,000
35-39	1,612,150	1,606,450	3,218,600	1,685,300	1,688,000	3,373,300	1,721,300	1,699,900	3,421,200	1,776,600	1,758,900	3,535,500
40-44	1,601,400	1,609,200	3,210,600	1,599,200	1,598,300	3,197,500	1,675,900	1,683,600	3,359,500	1,713,500	1,698,000	3,411,500
45-49	1,687,290	1,699,870	3,387,160	1,582,000	1,594,600	3,176,600	1,581,200	1,587,900	3,169,100	1,659,700	1,673,600	3,333,300
50-54	1,843,450	1,890,310	3,733,760	1,648,500	1,675,600	3,324,100	1,545,200	1,572,400	3,117,600	1,548,300	1,570,100	3,118,400
55-59	1,833,840	1,908,830	3,742,670	1,776,500	1,846,400	3,622,900	1,586,700	1,636,300	3,223,000	1,493,000	1,541,200	3,034,200
60-64	1,580,050	1,679,930	3,259,980	1,729,500	1,836,600	3,566,100	1,673,600	1,776,700	3,450,300	1,503,800	1,581,500	3,085,300
65-69	1,259,960	1,384,320	2,644,280	1,444,500	1,581,800	3,026,300	1,578,600	1,730,800	3,309,400	1,539,800	1,681,500	3,221,300
70-74	860,850	1,001,850	1,862,700	1,098,900	1,265,400	2,364,300	1,256,400	1,446,200	2,702,600	1,387,000	1,589,500	2,976,500
75-79	591,150	747,650	1,338,800	700,300	876,500	1,576,800	892,900	1,101,100	1,994,000	1,029,300	1,270,400	2,299,700
80-84	397,880	574,250	972,130	433,700	606,600	1,040,300	513,900	699,100	1,213,000	661,000	896,800	1,557,800
85+	369,540	730,400	1,099,940	383,000	717,500	1,100,500	435,700	761,500	1,197,200	489,700	821,700	1,311,400
<b>TOTALS</b>	<b>25,738,580</b>	<b>26,538,230</b>	<b>52,276,810</b>	<b>26,071,600</b>	<b>26,839,200</b>	<b>52,910,800</b>	<b>26,343,500</b>	<b>27,117,200</b>	<b>53,460,700</b>	<b>26,556,400</b>	<b>27,341,300</b>	<b>53,897,700</b>

## Inventory of Transportation Education Programs and K-12 Activities

An inventory of educational and workforce development resources was conducted in 2015. Researchers focused first on the educational offerings that offered credentials for the following transportation occupations:

- Automotive Service Technicians and Mechanics
- Bus and Truck Mechanics and Diesel Engine Specialists
- Bus Drivers, School or Special Client
- Bus Drivers, Transit and Intercity
- Mates Ship, Boat and Barge
- Cement Masons and Concrete Finishers
- Civil Engineers
- Cleaners of Vehicles and Equipment
- Construction Laborers
- Conveyor Operators and Tenders
- Crane and Tower Operators
- Customs Brokers
- Dispatchers, Except Police, Fire, and Ambulance
- Dredge Operators
- First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand
- First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators
- Freight Forwarders
- Highway Maintenance Workers
- Hoist and Winch Operators
- Laborers and Freight, Stock, and Material Movers, Hand
- Locomotive Engineers
- Logistics Analysts
- Machine Feeders and Offbearers
- Marine Engineers
- Operating Engineers and Other Construction Equipment Operation
- Packers and Packagers, Hand
- Paving, Surfacing, and Tamping Equipment Operators
- Rail Car Repairers
- Rail Yard Engineers, Dinkey Operators, and Hostler
- Rail-Track Laying and Maintenance Equipment Operators
- Railroad Brake, Signal, and Switch Operators
- Railroad Conductors and Yardmasters
- Sailors and Marine Oilers
- Ship Engineer
- Software Developers, Applications
- Storage and Distribution Managers
- Structural Iron and Steel Workers

- Subway and Streetcar Operators
- Supply Chain Managers
- Tank Car, Truck, and Ship Loaders
- Tire Repairers and Changers
- Traffic Technicians
- Transit and Railroad Police
- Transportation Inspectors
- Transportation Planners
- Transportation Security Screeners
- Truck Drivers, Heavy and Tractor-Trailer
- Truck Drivers, Light or Delivery Services
- Urban and Regional Planners

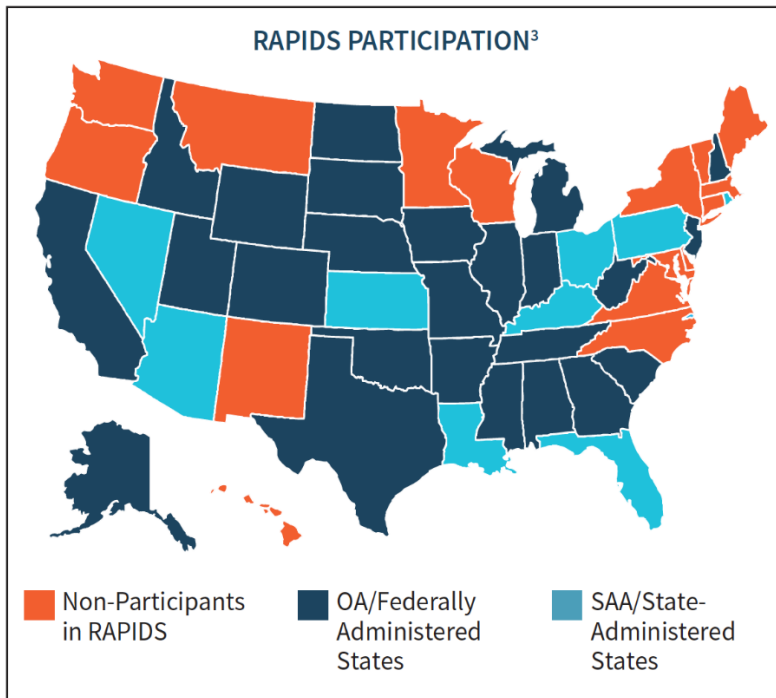
To accomplish this, researchers used the Classification of Instructional Program (CIP) codes developed by the National Center of Education Statistics. These codes support “the accurate tracking, assessment, and reporting of fields of study and program completion of study.” Because CIP codes are crosswalked with the Bureau of Labor Statistics’ Standard Occupational Classification (SOC) system codes, researchers could quickly discern which occupations had formal training programs.

Researchers then queried the Integrated Postsecondary Education Data System (IPEDS) by CIP code to develop a list of postsecondary institutions offering training. IPEDS is a system of interrelated surveys that collect institutional-level data from all US postsecondary institutions that participate in Title IV federal financial aid programs. Institutions are required to report these data. The total number of completions was also an attribute in the query.

The research team then validated the offerings by visiting each institution’s website and collecting credential information. The list of educational resources for Region V can be found in Appendix B.

## Data Gaps

Not all transportation occupations listed in this report had a corresponding CIP code. For example, construction-related training may happen at a technical or community college with a corresponding CIP code but some training may take place in a union facility as an apprenticeship. Currently, a centralized Department of Labor database does not exist for apprenticeship data. Registered apprenticeship data collection is complicated because of the differences in apprenticeship administration. Some states are governed by the Department of Labor (DOL) and track their apprenticeship sponsors in the Registered Apprenticeship Partners Information System (RAPIDS). States may also administer their own apprenticeships and are not required to participate in the RAPIDS system (Workforce Data Quality Campaign, n.d.). Figure 12 shows the different systems and hence the availability of apprenticeship data in Region V. Only Michigan, Illinois, and Indiana are required to report apprenticeship data in RAPIDS. Minnesota and Wisconsin submit data on a quarterly basis.



**Figure 12. Apprenticeship Administration by State**

While RAPIDS is not available to the public, UW-Madison researchers were able to obtain apprenticeship data through DOL staff. The data lists the industry sponsors, and point of contact emails. Attempts to validate the data were not fruitful as sponsors did not reply to researcher emails.

Training that is provided by industry but not credentialed was not in scope of this project. For example, the American Association of State Highway Officials (AASHTO) offers training for many state transportation agencies.

***K-12 Resources and Major Stakeholder Resources***

As a starting point, the research team used the educational institutions list from Appendix B to mine K-12 activities. Appendix C is an inventory of engineering education and training and K-12 engineering career awareness activities offered by those institutions. Activities are classified as summer programs, events, and internships available at state departments of transportation. Researchers also looked at the workforce resources available at the state departments of transportation.

Kindergarten through Grade 12 programs that are federally funded tend to be delivered to local residents. Examples of these are the National Summer Transportation Institute funded by Federal Highway Administration.

It is interesting to note that participation in K-12 summer activities are not restricted to residents from the institution’s state, or even to U.S. residents. Therefore, to determine pipeline statistics, it would be necessary to track participants and obtain demographic information on program registrants.

Likewise, many resources are available on the internet, therefore the reach of resources are available to those with access to the internet. These include other clearinghouses, or web sites.

During the data collection period, researchers noticed there was a preponderance of STEM activities that offered a project-based learning methodology and engineering activities. Only those STEM programs that offered a civil engineering, structural engineering, bridge design and/or construction were included. Many high school programs focusing on engineering provided an in-depth, experiential opportunity, yet program tuition was high. A small handful of schools provided exposure to rail occupations. Public transit careers exposure was limited to cities with extensive public transit systems.

The resources inventoried in Appendices B and C have been added to the Midwest Transportation Workforce Center Clearinghouse at <http://mtwc.org/clearinghouse/>. The clearinghouse has a more extensive list of regional resources, including scholarships that are open to students/workers in the Midwest.

## **Phase II: Midwest Transportation Workforce Summit: Addressing the Future Now!**

Phase II involves planning and conducting a regional summit that brings together transportation, education, labor and economic development stakeholders to consider the recommendations made at the national summit considering specific regional conditions and needs.

The critical task of developing a transportation workforce strategy challenges the transportation industry as it faces a loss of workers to retirement and separation over the next ten years. While there are many efforts in place to build a pipeline of talent in the transportation sector, most act in isolation, limiting their work to a single mode or occupation.

There are many stakeholders to engage. Important stakeholders for participating in the Regional Summit include:

- State transportation agencies
- Local transportation agencies
- Metropolitan Planning Organizations
- Transit agencies
- Trucking associations and firms
- Transportation contractors and consultants
- Labor organizations
- Air carriers
- Railroad associations and firms
- Maritime firms
- Community colleges and technical colleges
- Four-year colleges
- Departments of education
- Departments of labor
- Departments of economic development
- Regional offices of federal agencies

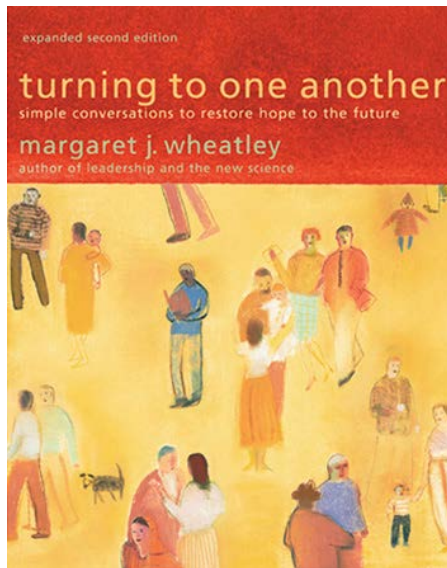
The MTWC reviewed various methodologies to engage stakeholders at the Midwest Transportation Workforce Summit. In this section, we present a review of organizational behavior/social impact/complexity science methods used to deal with complex problems and describes details of the Collective Impact approach used in the Midwest Transportation Workforce Summit.

### **Collective Impact Methodology for Engagement**

The Midwest Transportation Workforce Center (MTWC) adopted Collective Impact, a structured approach to cross-sector collaboration, as its overarching framework for engagement and community building among the stakeholders. The MTWC used Collective Impact to engage stakeholders from different transportation sectors to commit to creating multiple pathways to high-skill, high-wage occupations.

Numerous change management approaches can be used in a Collective Impact initiative. When people come to the table in Collective Impact, the process of letting go of ingrained beliefs can be a lengthy

one. For the Summit, we looked at methods that might accelerate this process in a way fitting the MTWC Summit goals. The following paragraphs describe a few of the change management approaches in the literature that were considered for use at the summit.



In **Turning to One Another** (Wheatley, 2009) Wheatley explains the role of individuals in creating change for the future. According to Wheatley, the only way the world will change is if many people let go of their judgments, become curious about each other, and take the risk to begin a conversation.

All humans want to learn, to improve things, and to care about each other. The unique culture and tradition that make human groups appear different are based on the same human desires for learning, freedom, meaning, and love. Despite most people's desire to live in peace, war, genocide, violence, slavery, and poverty are commonplace across the globe. In conversation, we find that others are just as concerned, caring, and eager for change.

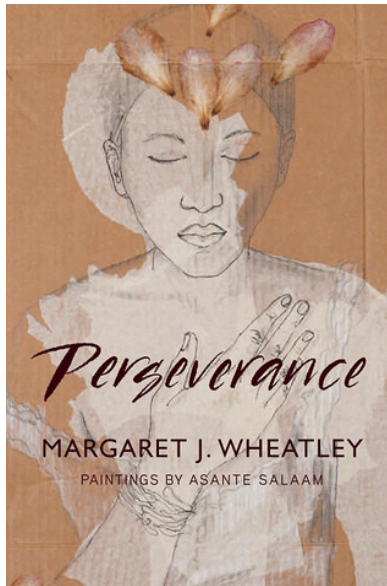
The book explores two conversations to restore hope in the future. She explains that human beings have always sat in circles and councils to do their best thinking, and to develop strong and trusting relationships. These conversations encourage thinking. The first conversation is about the role of individuals in creating change. Change can begin when a small group of ordinary people notice what they care about and take first steps to change the situation. The second conversation is about fear and how to face the fears that control our ability to initiate or engage in conversation.



**Beyond Measure: The Big Impact of Small Changes.** This book is about collective impact within a business organization. Margaret Heffernan's (Heffernan, 2015) explains how to create a strong organizational culture by implementing seemingly small changes like better listening, asking more questions and greater sharing of information. The premise of the book is that small actions by each employee—from bottom to top—have big impact.

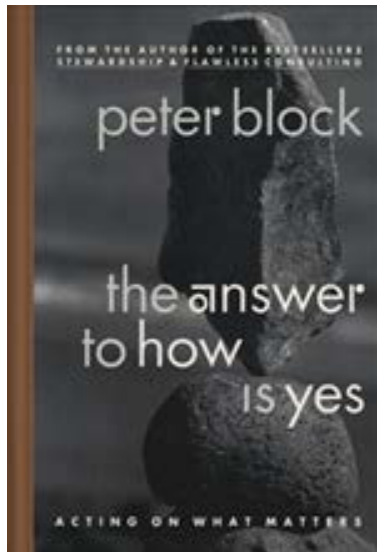
Heffernan shows that throughout history, it has been systemic barriers, such as failure to speak up, hoarding information etc. that handicap engagement and productivity improvements. Therefore, to truly create a culture where information is shared and collaboration is facilitated means empowering everyone within an organization to have—and use—their voice.

Heffernan discusses small changes that lead to an organizational culture that embraces conflict as a creative catalyst; uses every mind on the team; celebrates mistakes; and encourages speaking up.



In **Perseverance** (Wheatley, 2010), Wheatley focuses on the situations, feelings, and challenges that can, over time, cause people to give up or lose their way. *Perseverance* is a discipline—it's a day-by-day decision not to give up. Therefore, we have to notice the moments when we feel lost or overwhelmed or betrayed or exhausted and note how we respond to them. And, we have to notice the rewarding times—when we experience the joy of working together on something hard but worthwhile or when we realize we've made a small difference.

Wheatley draws from spiritual traditions and diverse cultures to explain how humans have persevered throughout time. The book is a collection of essays meant to be read as needed. Every essay names a behavior or dynamic, puts it into a broader human or timeless perspective, and offers ways to either live with or transcend that dynamic. Wheatley wants people to be able to see themselves and their situation and to assume responsibility for changing the situation or their reaction to it.



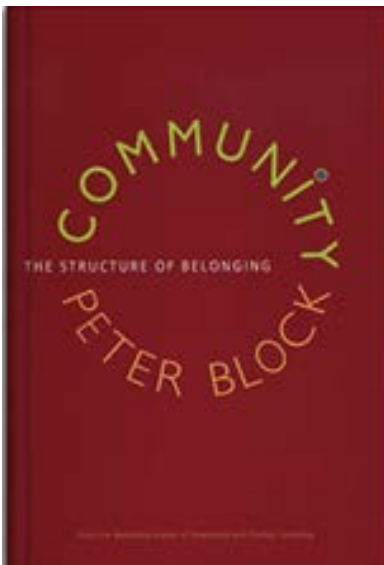
In **The Answer to How is Yes** (Block, 2003), Block explains how technology and pragmatism have turned many people into instruments of efficiency and commerce by allowing them to do more and more about things that mean less and less.

This book raises awareness of the tradeoffs in the name of practicality and expediency, and offers a way of life in which we're motivated not by what "works," but by the things that truly matter in life—idealism, relationship, intimacy, and engagement.

Block presents a way of thinking about actions that helps free people from being controlled by messages about how we should live and act. He inspires us to say yes to our ideals and aspirations.



In **Community: The Structure of Belonging** (Block, 2009), Block raises awareness about the fragments and disconnect among organizations that support the social fabric. The various sectors of our communities—businesses, schools, social service organizations, churches, government—work in



parallel, not in concert. They exist in their own worlds as do so many individual citizens, who long for connection but end up marginalized, their gifts overlooked, their potential contributions lost. This disconnection and detachment makes it hard or impossible to envision and work towards a common future.

Block maintains that the classic problem-solving approach only creates a future of the same problems. This book provides a structured way to create a sense of belonging when people come together to get something done. The approach is meant for occasions such as meetings, dialogues, and planning conferences when people gather to reflect on and decide the kind of future they want. Citizens have the power to change the community story and bring a new context into being. Block shows us how we can overcome isolation and anxiety and create communities alive with energy and possibility.

The Summit's goal was to get attendees to move from self-interest to a more caring and holistic view of the transportation workforce that includes an appreciation for the complexities inherent in a multi-modal and multi-occupational sector. We embraced the use of powerful questions to help individuals understand their role within the workforce system and the impact they have on such a system. The use of powerful questions offered a method to overcome two barriers. First, to help individuals reflect on their role in perpetuating the current reality and the corresponding change in attitudes and behaviors. Second, to accelerate action among groups that typically work in silos.

### **Summit Stakeholders, Steering Committee and Participants**

Stakeholder organizations involved in educating, training and employing transportation workers span all modes: highway, air, maritime, rail, and pipeline. They include the private sector; the public sector—state departments of transportation, education, and labor; professional associations and other organizations, such as unions and workforce investment boards; as well as the educational system—K-12, technical schools, community colleges and universities (Council of University Transportation Centers, 2012). These stakeholder organizations may individually focus only on a subset of transportation occupations, such as civil engineering or truck driving, in their workforce development or career awareness activities. Additionally, each organization may interpret the term transportation differently. University educators focus on civil engineering or transportation engineering occupations, while community colleges include automotive technicians, truck driving, diesel mechanics, as well as supply chain and warehousing under their transportation, distribution and logistics (TDL) offerings. Transportation occupations also span a number of Career Clusters® including Architecture and Construction, Science, Technology, Mathematics and Sciences, Professional Services, Transportation Distribution and Logistics, Government and Public Administration (Hanleybrown et al., 2012).

Other stakeholders who can provide input to the collective discussion include the education community, which is advancing the development of career pathways and providing credentials for training that are stackable and portable to other sectors. A second group is the Department of Labor with its focus on industry-driven approaches via the Workforce Innovation and Opportunity Act (WIOA) and the acceleration of apprenticeships, or pay-as-you-learn opportunities. Lastly, the newest generation of stakeholders, millennials, need to have a seat at the table. Under Collective Impact, we can utilize several stakeholder engagement methods and help align programs so we can solve complex problems.

### Accountability of Participants

At the opening of the Summit, the participants answered four questions (Table 16) by giving a rating on a scale of one to seven, where one is lowest. Ninety-four of the participants responded to all four questions. The questions were designed to gauge the attendees’ willingness to be accountable for their own participation. This type of accountability is an important first step in community building.

**Table 16: Pre-Summit Participation Questions**

Number	Question
Q1	How valuable an experience do you plan this Summit to be?
Q2	How participative do you plan to be?
Q3	How much effort are you willing to contribute to establishing partnerships with other Summit attendees?
Q4	To what extent are you invested in regional efforts for workforce development?

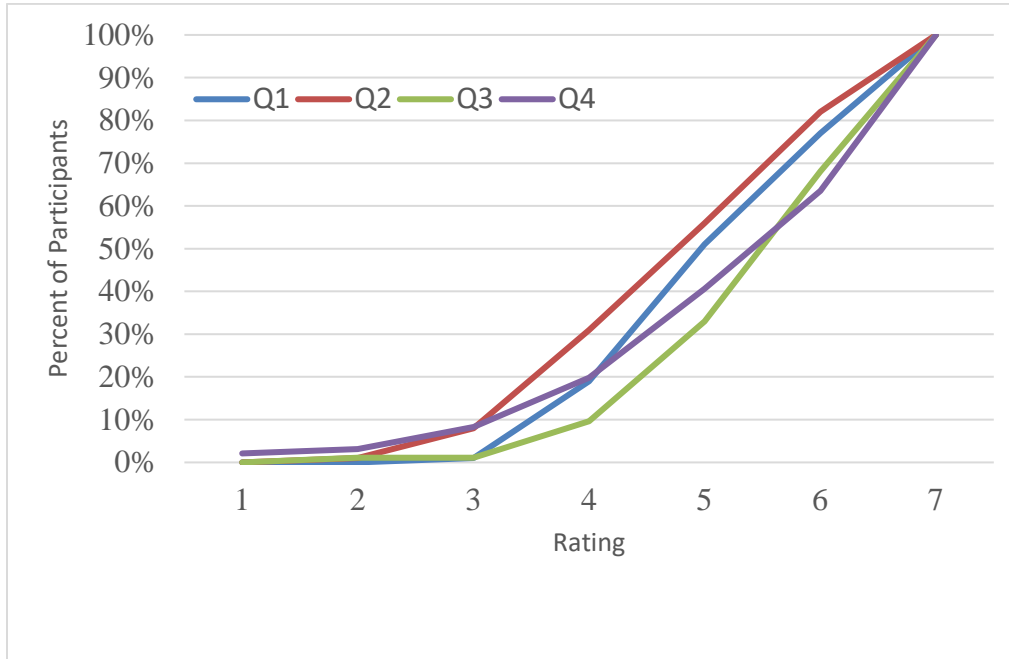
The mean scores for the questions range from 5.2 to 5.8, all well above the rating midpoint of 3.5. Few attendees rated themselves (Figure 13) at three or below on intent to participate (Questions 2) and being invested in regional efforts (Question 4). This explains why the summary statistics (Table 17) show the variances for Questions 2 and 4 as higher than for Questions 1 and 3. To determine whether differences in the ratings for each question are significant, we conducted an analysis of the variance (ANOVA) and pairwise t-tests.

Most participants rated their intentions (Figure 13) high as indicated by the steep slopes from 3 to 7. The correlation analysis of the ratings assigned by each person (Table 19) are all positive indicating that people who rated their intention high on one of the questions tended to rate their intentions as high on other questions as well. Thus, people who gave themselves high scores for willingness to participation also intended to invest effort and contribute.

We conducted a one-way analysis of variance (ANOVA) to determine whether there are any significant differences between the rating means of the four question responses. The P-value from the ANOVA is 0.002 (less than 0.05) indicating that the means for at least two of the questions are significantly different from each other.

We conducted pair-wise t-tests to determine the likelihood the question means differ if they are actually the same (Table 19). The mean ratings for Questions 1 and 2 are different. Similarly the mean ratings for Question 1 and 3, 2 and 3, and 2 and 4 are also significantly different because the probability of

being the same are all less than 5 percent. However, we cannot conclude the rating means differ for Questions 1 and 4, and 3 and 4 because the probability of this is 60 and 20 percent, respectively.



**Figure 13. Cumulative Frequency of Participants' Rating Scores on Summit Opening Questions**

**Table 17: Summary Statistics on Participants' Intentions**

Question	Mean Rating	Variance	95% confidence interval for Means
Q1: Valuable Experience	5.543	1.133	(-----*-----)
Q2: Be Participative	5.202	1.539	(-----*-----)
Q3: Establish Partnerships	5.872	1.059	(-----*-----)
Q4: Invest in Regional Efforts	5.638	2.018	(-----*-----)
			-----+-----+-----+-----+-----+-----
			5.10 5.40 5.70 6.00

**Table 18: Correlation Analysis**

Question	Q1 Valuable Experience	Q2 Be Participative	Q3 Establish Partnerships
Q1: Valuable Experience	1		
Q2: Be Participative	0.396	1	
Q3: Establish Partnerships	0.309	0.425	1
Q4: Invest in Regional Efforts	0.252	0.170	0.498

**Table 19. Simple Pairwise T-Tests of Rating Means**

P-value	Q2 Be Participative	Q3 Establish Partnerships	Q4 Invest in Regional Efforts
Q1 Valuable Experience	0.045	0.032	0.602
Q2 Be Participative		8.08E-05	0.026
Q3 Establish Partnerships			0.197

Most attendees set high expectations for the Summit. Very few participants rated their intentions at 3 or less, thus most expected a valuable experience. The ratings are positively correlated. People who gave themselves high scores for willingness to participation also intended to invest effort and contribute.

While the mean ratings for the questions have a narrow range from 5.2 to 5.8, the differences for the most part, are significant. The attendees’ expectations for a valuable experience was greater than their willingness to participate.

### **Transformational Outcomes and the Use of Powerful Questions to Create Community**

The Summit methodology followed the process outlined by Peter Block (Block, 2009). Community, in this case, is the network of organizations, including employers, with the mission of transportation workforce development. Block defines powerful or transformative questions as questions that cause the respondents to become more accountable and more committed when answering them. These questions are intentionally ambiguous, personal and may evoke anxiety. We use the questions in Table 20 to engage the participants in recognizing their individual roles in creating the community. In answering the questions, we hoped the participants would assume accountability for, and commit to, making the Summit a success for themselves and others. Attendees were asked to avoid discussions about the history of how a situation emerged or reports on situations, giving explanations and opinions, blaming and complaining, or discussions that focus on the definition of terms and conditions, as these conversations are not likely to lead to changes (Block 2009).

Summit participants were provided with the following pre-readings: *Channeling Change, Making Collective Impact Work* (Hanleybrown et al., 2012), and *Using Emergence to take Social Innovation to Scale*. Participants also received Block’s book in their packets. All summit materials including agenda, pre-meeting materials, presentations, and workforce initiatives can be found at <http://mtwc.org/mtwc-events/regional-workforce-summit/>

The format of the Summit included traditional presentations followed by directed conversations rather than the typical question-and-answer period. Instead, the participants were asked to discuss the questions in Table 20. Attendees spent some time in reflection and then moved to small groups of 3–12 for further discussion and to see if the group might co-create new initiatives.

**Table 20: MTWC Powerful Questions by Conversation**

Conversation Topic	Powerful Questions to Drive the Conversation
Possibilities	Think about: <ul style="list-style-type: none"> <li>• The crossroads at this stage of your work</li> <li>• The possibilities that inspire you</li> </ul> What “current reality” does the presentation address? What possibilities can you envision for an alternative future reality?
Ownership	How have you contributed to creating the “current reality”? What is the story about this current reality that you hear yourself telling most often? What is your attachment to this story costing you? What are the payoffs you receive from holding on to this story?
Gifts	What gift (of learning, idea, resource, etc.) did you receive from the presentation? What are the unique strengths or talents of the presenter(s)? What are your own gifts—the capabilities you bring to the group?
Commitment	As a group, what do you want to create together that would make a difference? As a group, what can you create together that cannot be created by individuals? What promise are you willing to make to help bring an alternative future into existence?
Dissent	What are your doubts and reservations about the possibilities you heard? Others in the group should: <ul style="list-style-type: none"> <li>• Listen and try to understand</li> <li>• Not address the doubts or solve problems</li> <li>• Not give advice</li> </ul>

The small group discussions focused on answering the conversation questions (Table 21) that were provided to the participants following each session of the Summit.

**Table 21. Small Group Conversations**

Discussion Question	
a	As a group, what do you want to create together that would make a difference?
b	As a group, what can you create together that cannot be created by individuals?
c	What promise are you willing to make to help bring an alternative future into existence? (Tell others in group your promise. Each person writes down the commitment on a sticky note and signs it. It is ok to write “I am willing to make no promise at this moment.”)

## Commitments

Conversations at the 2015 MTWC Summit resulted in 104 individual commitments made by representatives from various agencies, companies, and organizations in the transportation industry. The unique backgrounds of the Summit attendees are reflected by the wide variety of responses, ranging from general to specific and covering topics such as workforce diversity, transportation education, and career development. Our goal in generating the commitments was to build a community of actors willing to address the challenges of the “current reality” of transportation workforce development by envisioning a better “alternative future reality.”

According to Block, the commitments are not as important as the act of making the commitment. Nevertheless, we analyzed the contents of the commitments based on what the participants wrote. We started by dividing the commitments into eight categories (Table 22). The categories reflect impacts of the Summit on the attitudes and actions of the participants. The categories include commitments to continue the conversations started at the Summit, spreading messages from the Summit to people or organizations that did not attend the Summit, taking action to create a partnership, changing attitude about an issue, or taking an action to learn more about an issue. Many of the commitments suggest the participant intends to take on new activity in a way that implements what they learned at the Summit. Some of the commitments suggest the participant gained a renewed interest in a current activity because they had gained a better understanding of the activity’s value.

For most of the eight categories, the distribution of the number of commitments is fairly even. The largest group is Category 6. Twenty-three commitments were made by participants who promised to take actions with tangible outcomes. One participant proposed the creation of “an online training program that educates professionals” about the power of social media as a tool “for hiring, recruiting, and the entire spectrum of options for workforce education and development.” Another participant said they were “willing to review the chamber of commerce recommendations” and then apply the recommendations to the “regional industry sector partnerships” they are a part of. Another participant committed to helping “students understand and learn the skills needed to enter the workforce and learn of the companies in need of their skills/degree.”

**Table 22 Commitment Categories and Distribution**

Category		Count	% of Total
1	Communicate / conversation non-specific; continue the summit conversations	18	17%
2	Follow up with specific person or organization with a message or information from the Summit	10	10%
3	Follow up to create a partnership, network, and relationship with specific or non-specific partners	19	18%
4	Personal action—that changes personal behavior; better understanding of issues; accepting responsibility for their role (personal, job, organization)	15	14%
5	Personal action to learn more about a subject area	10	10%
6	Action with tangible outcome (to do list)	23	22%
7	Continue recognized or worthy activity	6	6%
8	Other actions	3	3%

The second largest group is Category 3 with 18 percent of the commitments. These commitments are about creating or further developing a partnership, network or relationship with specific or non-specific partners after the Summit. Some of those partnerships are about promoting transportation education and career development to students. One participant specifically promised to “reach out to more organizations such as the Urban League to continue to funnel our students into job readiness and job

preparedness programs” while another participant said they would explore other networking opportunities with “the employment agencies and/or schools in attendance.” The latter participant expressed a commitment to also explore “ways to reach out to diverse groups and discuss pathways to employment.” Some commitments focused on enhancing business partnerships or networks, such as one participant committing to continuously “developing Sector Partnerships to address the needs of businesses within our region.” Another participant said they would “assist Workforce Centers to establish partnerships.”

The commitments in category 4 are about changing behavior. These commitments appear to be driven by new or better understanding of workforce issues or renewed acceptance of responsibility for action. One participant committed to “be a better communicator of the needs to help close the gap.” Another participant said they were attempting to “commit to lessening the stigma about outdoor jobs not needing knowledge and skills. There is nothing that is an un-skilled labor.”

Some participants made specific commitments pertaining to their own institution, others wrote general commitments that can apply to any transportation organization. Partnerships, conversation, network, strategic, and programs were among the most frequently used words in the commitments, highlighting the collaborative nature of the Summit. A few commitments stated the willingness of attendees to continue the conversation after the Summit ended by taking advantage of the Google+ Community MTWC page. Multiple individual commitments reflected the need to collaborate by starting with the phrases “I promise to network,” “(I commit to helping create) stronger partnerships,” or “(I commit to) communicating more effectively.”

Finally, commitments related to more sensitive topics, such as race, gender and economic class, resulted from an in-depth final discussion. Stereotypes still exist about transportation jobs being lower income and predominately male, but many potential employees do not know about the livable wages that many of these jobs pay. An important aspect of inclusiveness involves outreach to citizens returning from serving prison sentences.

The commitments produced by the 2015 MTWC summit, no matter how general or specific, all contribute to a promising “alternative future reality” as the transportation industry adapts to a rapidly changing society.

## **Community Building**

During the Summit, MTWC established a Community of Practice using Goggle+ Community. Communities of practice (CoPs) are forums generally guided by its members and organized and sustained by peers that share a concern or passion on a given topic. CoPs provide professional development in that members learn from practitioners from different organizations (Wenger & Snyder, 2000).

Joining the MTWC Community of Practice was part of the 2015 Summit agenda. The MTWC CoP has a structure for continued discussion and serves as a repository for shared practices. MTWC CoP is still being used and will be further developed in future activities.

The Summit wrap-up session gave the participants an opportunity to reflect on what they learned and the discussions they had with other attendees. The following are a few quotes from participants during the wrap-up session.

*“I’m from a college that’s starting up a program. I’ve met a lot of people at this conference that have offered help and assistance and advice, and I look forward to take advantage of that.”* Dan Kania with an example of how he will utilize programs that help returning citizens.

*“One of the great conversations I had was with someone who was already hiring returning citizens, or ex-offenders. We have tremendous opportunity for this target population. I’m going to go back and score that in MI.”* Mary Lorah-Hammond.

*“I’m going to try and commit to lessening the stigma about outdoor jobs not needing knowledge and skills. There is nothing that is an un-skilled labor.”* Tim Tarrant reminded the Summit attendees of how complex the transportation industry has become in recent years with technology.

*“Returning citizens. I want to talk about this term. Overall, the workforce community refers to these people as ex-offenders. We should really think about that concept for people that are trying to re-start their lives.”* Erwin Acox.



## Conclusions

The transportation sector is extremely broad, encompassing many activities that span the continuum of transportation planning, design, maintenance, and operations of the facilities and conveyances used to move people and goods. The occupations in transportation intersect nearly all defined career clusters giving transportation a narrow definition within the context of the career. Those who are unaware of the many career opportunities within the transportation section, usually think people who have jobs in transportation either drive or dispatch planes, trains, or automobiles.

Two major trends are driving the urgency for transportation workforce development. These are the aging current workforce and the rapid advancement in communication and automation technologies. Over half of the current transportation workers are aged 45 years or older which means that retirements will generate significant vacancies over the next ten years. By 2022, it is projected that 4.6 million workers will need to be hired to account for retirements, transfers and growth in the sector (U.S. Department of Education, Office of Career, Technical, and Adult Education, 2015).

With recent technology advances in data communications and autonomous vehicles, the transportation sector has a unique and timely opportunity to rebrand its image to appeal to the emerging workforce. Besides new technology jobs in transportation there are new infrastructure jobs, mobility jobs, environmental impact jobs, and social impact jobs.

An analysis of the transportation workforce is made difficult because of limited data and labor market projections. BLS projections methodology does not account for advances in technology. This will be crucial in the next few years due to the advancement of automation and artificial intelligence. Because of the delay in developing Standard Occupational Classification System codes for emerging occupations, researchers must rely on surveys to determine demand. Improved real-time data tools being developed by labor market intelligence vendors can provide insight into the career trajectory of employees in the transportation sector. We recommend that partnerships be developed with Labor Market Intelligence vendors to develop new tools that facilitate recruitment of transportation workers.

The following are recommendations for advancing workforce development at transportation agencies.

- We recommend that USDOT partner with USDOL to ensure that emerging occupations within the departments are reflected in the SOC system.
- The transportation workforce development community needs to develop expertise with apprenticeship data and work on data workgroups sponsored by Department of Labor and other workforce data stakeholders.
- Organizations should collaborate and share practices that have worked well for them when recruiting employees to ensure a stable applicant pool in the future.
- The transportation sector invests in numerous training program. However, these programs cannot fully advance personal or organizational workforce development goals because they are not credentialed or stackable.
- One strategy for developing and retaining the transportation workforce is to create career pathways. Pathways are usually geared for a specific population in a certain geographic area.

Transportation agencies that work with educational partners to identify career pathways into and within the organization will retain their workforce longer. Targeting appropriate audiences with messages that promote the industry will be crucial in removing the stigma and misconceptions about transportation jobs.

- Education, internship, and apprenticeship programs will be necessary to bring future transportation workers up to speed with new technological advances in their positions. Transportation agencies should develop strategies to better forecast and manage their workforce needs. One idea is to relate and update forecasts relative to the agency's short- and long-term infrastructure and construction plans and projects. Another strategy is to develop second careers in transportation for retirees.
- To determine the collective impact of K-12 activities in transportation, we recommend that the transportation industry partner with a convening organization to pilot a gathering of broad-based transportation stakeholders. A Collective Impact initiative brings stakeholders together that have a common mission. Stakeholders agree to measure their impact by adopting common performance measures. A pilot may be of more interest to employers of high demand occupations. This approach may be advanced at a transportation summit.
- Over the course of the Summit, many participants expressed concerns over how difficult it is to market transportation jobs to younger generations who might think the occupations involve a limited skill set. The industry will need to reach out to schools, minorities, women, and returning citizens to find and develop a pool of qualified potential applicants. Otherwise, the pool of applicants will continue to shrink over time.

This project used Collective Impact as the approach for engagement and community building at the Regional Workforce Summit held in Madison, Wisconsin in December 2015. For this approach, we used powerful questions to engage the participants as individual and in small groups. In answering the questions, we hoped the participants, by voicing answers to one another, would grow more connected as a community ready to define future possibilities for transportation workforce development.

We assessed the Summit attendees' commitment to community building. At the start, we asked attendees to rate themselves on their expectation and commitment to participation. During the meeting, participants had opportunities to identify and express specific actions, or commitments, for themselves. Of the 123 registered attendees at the Summit, approximately 58 made commitments, approximately one-half of the attendees. The number of commitments is consistent with how the attendees responded to the participation questions during the opening session. Attendees rated themselves at 5 or greater out of 7 on the participation questions (Table 23) indicating a strong willingness to make commitments and take actions after the meeting. The participants appear to have followed through with their plans to participate.

**Table 23. Percent of summit attendees who rated their intention to participate as 5 or more out of 7**

	Q1	Q2	Q3	Q4
Rating	Valuable Experience	Be Participative	Establish Partnerships	Invest in Regional Efforts
% >5	49%	44%	67%	59%
% 7	23%	18%	32%	36%

The participant commitments are an indication of the next steps that industry partners will need to take in order to remain competitive. The unique backgrounds of the Summit attendees are reflected by the wide variety of responses, ranging from general to specific and covering topics such as workforce diversity, transportation education, and career development.

Along with the region’s key occupations, the findings of this report provide for a coordinated, strategic, and structured approach to transportation workforce development at the regional, state and local levels. These results help focus the work of the region going forward and guide interactions among stakeholders. Through partnerships, transportation employers, education, workforce investment, and labor/union communities can address pressing workforce challenges related to these key occupations. This collaborative approach will be important to the success of transportation workforce development and to the efficiency and effectiveness of the region’s transportation system.

The field of transportation workforce development is complex, in part, because of its breadth. When other factors are considered, such as demographic changes, the role of technology, and other systems, such as labor and education, it is easy to understand why we operate in silos of modal workforce or concentrate on a single occupation. Yet, collectively, all modes face the same challenges of recruitment and retention. To support a vibrant economy, the transportation sector must continue to recruit, retain, reskill, train, and educate a transportation workforce that can build, design, and maintain infrastructure, operate the system, and maintain the conveyances that move people and goods across the transportation network.

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## Appendix A: Interview Protocol

Welcome and thank you for participating in this interview.

My name is [facilitator name] and I'll be conducting our interview today. I will also be taking notes to accurately convey your opinions and experiences to the Midwestern Transportation Workforce Center.

The goal of the center is to enhance transportation workforce development in the region, which encompasses nine states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Ohio and Wisconsin. The center is part of a network of five regional centers that cover the entire U.S. seeking to identify and streamline entry into priority occupations important to the region.

Our team's initial research in real-time transportation and logistics job postings resulted in a listing of the top 25 Midwestern transportation and logistics positions and the top skills identified in these occupations, both attached.

We also used government labor market data to identify those jobs projected to be in the highest demand by 2022, also attached.

We are now narrowing down the in-demand jobs list to identify the priority occupations in the region. These priority jobs will likely be the focus of the center's workforce development.

And the purpose of this interview is to gather your input regarding these jobs and related criteria, identify other in-demand jobs based on your experience and identify any other gaps in workforce participation.

### Background

1. Can you provide a brief overview of your organization and its mission in transportation?
2. Could you tell us about your role in the organization and your work, if any, in transportation workforce development?

### Assessment of transportation workforce supply and demand

3. In reviewing the jobs lists, which transportation occupations have you experienced the most difficulties in recruiting and hiring employees?
  - a. For these occupations, what challenges have you experienced? For example, is the difficulty that there are not enough applicants available, lack of awareness of the industry or that applicants simply do not have appropriate skills?
  - b. Are there jobs not on the list you have had challenges in recruiting and hiring staff?
4. Within your organization or area, which occupations have the highest turnover rates? Are there occupations on the list for which it is a challenge to retain employees, and these positions need to be frequently refilled?
  - a. For occupations with high turnover rates, why is turnover a problem (e.g., low wages, lack of understanding of work requirements before beginning employment)?

- b. Are there jobs not on the list you have had challenges in retaining staff?
- 5. Is there something unique about your city, state or the Midwest in general that makes workforce development for these jobs particularly challenging?

### **Assessment of occupation skill needs**

- 6. Thinking across all of the transportation occupations you are aware of or interact with, which have the most unique critical job functions? That is, which jobs on the list are unlike others in the region?
  - a. Which occupations have the most unique personnel requirements in knowledge, skills and abilities to effectively complete the job?
  - b. Are there jobs not on the list that should be noted?
- 7. Thinking about technology in transportation occupations, which occupations rely most on or more heavily use technology?
  - a. Of these occupations, which utilize new technology the most intensively and which do you believe will have evolving technology needs?
  - b. What types of technology are most prevalent? How do these impact the skills needed for the job?
  - c. Are there jobs not on this list that should be noted?
- 8. Are there any transportation occupations on the list you believe are unique to or more important in the Midwest than in other regions? What are these occupations?
  - a. Are there transportation occupations in the Midwest not needed in other regions?
  - b. Are there jobs not on this list that should be noted?

### **Assessment of the center's strategic focus**

Our final questions focus on identifying occupations that specifically align with the center's strategic focus.

- 9. What occupations best contribute to a better quality of life for Midwesterners?
- 10. What jobs do you think are the greenest and associated with climate change, alternative fuels and the like?
- 11. In which jobs would the Midwest be best able to support and engage disadvantaged youth?
- 12. How do you typically partner with community colleges, colleges and universities to find the applicants you need and which jobs are you trying to fill through these efforts?
- 13. For what occupations is portability of skills important so incumbents can quickly move up career ladders or into other related jobs? Are there specific occupations that have wide skill sets that could translate to other occupations?

### **Summary**

- 14. Do you have any final thoughts, comments, or questions?

**Thank you for your time and participation in today's session!** We couldn't do it without you.



## **Appendix B: Educational Inventory**

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Illinois	Certificate	Automotive Repair	Black Hawk College	Moline	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Repair Technology	Black Hawk College	Moline	Automotive Service Technicians and Mechanics
Illinois	AAS	Engineering Technology	Black Hawk College	Moline	Civil Engineers
Illinois	Certificate	Engineering Technology Fundamentals	Black Hawk College	Moline	Civil Engineers
Illinois	AA	Supply Chain Management Transfer	Black Hawk College	Moline	Logistics Analysts
Illinois	BS	Civil Engineering	Bradley University	Peoria	Civil Engineers
Illinois	MS	Civil Engineering	Bradley University	Peoria	Civil Engineers
Illinois	BS	Construction	Bradley University	Peoria	Civil Engineers
Illinois	Advanced Certificate	Automotive Technology	Carl Sandburg College	Galesburg	Automotive Service Technicians and Mechanics
Illinois	Basic Certificate	Class C Driver Training	City Colleges of Chicago - Harold Washington College	Chicago	Delivery Driver, Para-transit Driver and/or Medi-car Driver
Illinois	Basic Certificate	Commercial Driver Training	City Colleges of Chicago - Harold Washington College	Chicago	Truck Driver, Heavy and Tractor-Trailer / Truck Driver, Light or Delivery Services
Illinois	Basic Certificate	Commercial Passenger Driver - Class B	City Colleges of Chicago - Harold Washington College	Chicago	Truck Drivers, Light or Delivery Services
Illinois	Advanced Certificate	Diesel Technology	City Colleges of Chicago - Harold Washington College	Chicago	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Basic Certificate	Diesel Technology	City Colleges of Chicago - Harold Washington College	Chicago	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Diesel Technology	City Colleges of Chicago - Harold Washington College	Chicago	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Automotive Technology	City Colleges of Chicago - Harry S Truman College	Chicago	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	City Colleges of Chicago - Kennedy-King College	Chicago	Automotive Service Technicians and Mechanics
Illinois	Basic Certificate	Class C Driver Training	City Colleges of Chicago - Olive-Harvey College	Chicago	Delivery Driver, Para-transit Driver and/or Medi-car Driver
Illinois	Basic Certificate	Commercial Driver Training	City Colleges of Chicago - Olive-Harvey College	Chicago	Truck Driver, Heavy and Tractor-Trailer / Truck Driver, Light or Delivery Services
Illinois	Basic Certificate	Commercial Passenger Driver - Class B	City Colleges of Chicago - Olive-Harvey College	Chicago	Bus Drivers / Truck Drivers, Light or Delivery Services
Illinois	AAS	Diesel Technology	City Colleges of Chicago - Olive-Harvey College	Chicago	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Advanced Certificate	Diesel Technology	City Colleges of Chicago - Olive-Harvey College	Chicago	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Basic Certificate	Diesel Technology	City Colleges of Chicago - Olive-Harvey College	Chicago	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Transportation, Distribution & Logistics	City Colleges of Chicago - Olive-Harvey College	Chicago	First-Line Supervisor of Helpers, Laborers, and Material Movers / First-Line Supervisor of Transportation and Material-Moving Machine Operators / Logistics Analysts / Storage, and Distribution Managers
Illinois	AAS	Automotive Technology	College of DuPage	Glen Ellyn	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology	College of DuPage	Glen Ellyn	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	College of Lake County	Grayslake	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology	College of Lake County	Grayslake	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	Danville Area Community College	Danville	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology	Danville Area Community College	Danville	Automotive Service Technicians and Mechanics
Illinois	MBA	Operations Management	DePaul University	Chicago	Logistics Analysts

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Illinois	MS	Supply Chain Management	DePaul University	Chicago	Logistics Analysts
Illinois	MA	Sustainable Urban Development	DePaul University	Chicago	Urban and Regional Planners
Illinois	MS	Geographic Information Sciences	Eastern Illinois University	Charleston	Urban and Regional Planners
Illinois	AAS	Automotive Service Technology	Elgin Community College	Elgin	Automotive Service Technicians and Mechanics
Illinois	Certificate	Truck Driving	Elgin Community College	Elgin	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	BS	Urban Studies	Elmhurst College	Elmhurst	Urban and Regional Planners
Illinois	Certificate	Auto Service Technology I (AUM)	Frontier Community College	Fairfield	Automotive Service Technicians and Mechanics
Illinois	Certificate	Auto Service Technology II (AUM)	Frontier Community College	Fairfield	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Service Specialist (AUM)	Frontier Community College	Fairfield	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Service Technology (AUM)	Frontier Community College	Fairfield	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology (AUM)	Frontier Community College	Fairfield	Automotive Service Technicians and Mechanics
Illinois	BA	Business Administration Operations and Supply Chain Management Concentration	Governors State University	University Park	Logistics Analysts
Illinois	MBA	Supply Chain Management	Governors State University	University Park	Logistics Analysts
Illinois	MBA	Supply Chain Management Specialization	Governors State University	University Park	Logistics Analysts
Illinois	AAS	Logistics & Supply Chain Management	Harper College	Palatine	Logistics Analysts
Illinois	Certificate	Supply Chain Management	Harper College	Palatine	Logistics Analysts
Illinois	Certificate	Supply Chain Management - Inventory Control/Production Control	Harper College	Palatine	Logistics Analysts
Illinois	Certificate	Supply Chain Management - Physical Distribution Management	Harper College	Palatine	Logistics Analysts
Illinois	Certificate	Supply Chain Management - Purchasing	Harper College	Palatine	Logistics Analysts
Illinois	AAS	Welding Technology with Specialization in Supply Chain Management	Harper College	Palatine	Logistics Analysts
Illinois	AES	Engineering	Heartland Community College	Normal	Civil Engineers
Illinois	AAS	Laborer Apprentice	Heartland Community College	Normal	Construction Laborers
Illinois	Certificate	Laborer Apprentice Certificate	Heartland Community College	Normal	Construction Laborers
Illinois	AAS	Automotive Mechanics	Highland Community College	Freeport	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Service Level I	Highland Community College	Freeport	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Service Level II	Highland Community College	Freeport	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	Illinois Central College	East Peoria	Automotive Service Technicians and Mechanics
Illinois	AAS	Diesel Powered Equipment Technology	Illinois Central College	East Peoria	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Certificate	Truck Driver Training Program	Illinois Central College	East Peoria	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	BS	Civil Engineering	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	MS	Civil Engineering	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	PhD	Civil Engineering	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	MS	Construction Engineering and Management	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	MS	Geoenvironmental Engineering	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	Graduate Certificate	Geoenvironmental Engineering	Illinois Institute of Technology	Chicago	Civil Engineers

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Illinois	MS	Geotechnical Engineering	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	MS	Structural Engineering	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	MS	Transportation Engineering	Illinois Institute of Technology	Chicago	Civil Engineers
Illinois	Certificate	Truck Driver Training	Illinois Valley Community College	Oglesby	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	Certificate	Logistics	John Wood Community College	Quincy	Logistics Analysts
Illinois	AAS	Logistics and Operations Management	John Wood Community College	Quincy	Logistics Analysts
Illinois	AS	Supply Chain Management	John Wood Community College	Quincy	Logistics Analysts
Illinois	AAS	Automotive Service Technology	Joliet Junior College	Joliet	Automotive Service Technicians and Mechanics
Illinois	Certificate	Diesel Maintenance Specialist	Joliet Junior College	Joliet	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Operations Engineering	Joliet Junior College	Joliet	Operating Engineers and Other Construction Equipment Operation
Illinois	AAS	Operations Technician	Joliet Junior College	Joliet	Operating Engineers and Other Construction Equipment Operation
Illinois	AAS	Automotive Technology	Kankakee Community College	Kankakee	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology	Kankakee Community College	Kankakee	Automotive Service Technicians and Mechanics
Illinois	AAS	Construction Craft Laborer	Kankakee Community College	Kankakee	Construction Laborers
Illinois	Advanced Certificate	Construction Craft Laborer	Kankakee Community College	Kankakee	Construction Laborers
Illinois	Certificate	Construction Craft Laborer Concrete Specialist	Kankakee Community College	Kankakee	Cement Masons and Concrete Finishers
Illinois	AAS	Automotive Technology	Kaskaskia College	Centralia	Automotive Service Technicians and Mechanics
Illinois	Advanced Certificate	Truck Driver Training	Kaskaskia College	Centralia	Truck Driver, Heavy and Tractor-Trailer / Truck Driver, Light or Delivery Services
Illinois	Advanced Certificate	Advanced Automotive Technology	Kishwaukee College	Malta	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	Kishwaukee College	Malta	Automotive Service Technicians and Mechanics
Illinois	Basic Certificate	Basic Automotive Technology	Kishwaukee College	Malta	Automotive Service Technicians and Mechanics
Illinois	AAS	Diesel Power Technology	Kishwaukee College	Malta	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Advanced Certificate	Diesel Power/Equipment Repair	Kishwaukee College	Malta	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AS	Engineering	Kishwaukee College	Malta	Civil Engineers
Illinois	AAS	Automotive Technology	Lake Land College	Mattoon	Automotive Service Technicians and Mechanics
Illinois	AAS	Civil Engineering Technology	Lake Land College	Mattoon	Civil Engineers
Illinois	AAS	Civil Engineering Technology Cooperative Study Option	Lake Land College	Mattoon	Civil Engineers
Illinois	AAS	Civil Engineering Technology/Advanced Technical Studies	Lake Land College	Mattoon	Civil Engineers
Illinois	Certificate	Commercial Driver Training	Lake Land College	Mattoon	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	AAS	Automotive Technology	Lewis and Clark Community College	Godfrey	Automotive Service Technicians and Mechanics
Illinois	AAS	Construction Laborer	Lewis and Clark Community College	Godfrey	Construction Laborer
Illinois	AAS	Automotive Technology	Lincoln Land Community College	Springfield	Automotive Service Technicians and Mechanics
Illinois	AAS	Construction Occupations	Lincoln Land Community College	Springfield	Construction Laborers
Illinois	Certificate	Automotive Mechanics	Lincoln Technical Institute - Melrose Park	Melrose Park	Automotive Service Technicians and Mechanics

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Illinois	AAS	Automotive Service Management	Lincoln Technical Institute - Melrose Park	Melrose Park	Automotive Service Technicians and Mechanics
Illinois	Diploma	Automotive Technology	Lincoln Technical Institute - Melrose Park	Melrose Park	Automotive Service Technicians and Mechanics
Illinois	Certificate	Construction Technician	Lincoln Trail College	Robinson	Construction Laborers
Illinois	AAS	Construction Technology	Lincoln Trail College	Robinson	Construction Laborers
Illinois	BBA	Operations Management	Loyola University Chicago	Chicago	Logistics Analysts
Illinois	MS	Urban Affairs and Public Policy	Loyola University Chicago	Chicago	Urban and Regional Planners
Illinois	Certificate	Urban Studies	Loyola University Chicago	Chicago	Urban and Regional Planners
Illinois	Certificate	Advanced Automotive Technician	McHenry County College	Crystal Lake	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Maintenance Technician	McHenry County College	Crystal Lake	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	McHenry County College	Crystal Lake	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology Management Option	McHenry County College	Crystal Lake	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Service Advisor	Moraine Valley Community College	Palos Hills	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Service Technician	Moraine Valley Community College	Palos Hills	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	Moraine Valley Community College	Palos Hills	Automotive Service Technicians and Mechanics
Illinois	Certificate	Supply Chain Management	Moraine Valley Community College	Palos Hills	Logistics Analysts
Illinois	AAS	Automotive Technology	Morton College	Cicero	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology	Morton College	Cicero	Automotive Service Technicians and Mechanics
Illinois	Certificate	Supply Chain Management	Morton College	Cicero	Logistics Analysts
Illinois	BS	Operations & Information Management	Northern Illinois University	DeKalb	Logistics Analysts
Illinois	BS	Civil Engineering	Northwestern University	Evanston	Civil Engineers
Illinois	PhD	Operations Management	Northwestern University	Evanston	Logistics Analysts
Illinois	MS	Structural Engineering	Northwestern University	Evanston	Civil Engineers
Illinois	MS	Transportation Systems Analysis & Planning	Northwestern University	Evanston	Civil Engineers
Illinois	PhD	Transportation Systems Analysis & Planning	Northwestern University	Evanston	Civil Engineers
Illinois	BS	Urban Studies	Northwestern University	Evanston	Urban and Regional Planners
Illinois	AAS	Automotive Technology	Oakton Community College	Des Plaines	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology (Apprenticeship)	Oakton Community College	Des Plaines	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology Powertrain	Oakton Community College	Des Plaines	Automotive Service Technicians and Mechanics
Illinois	Certificate	Auto Service Technology I (AUM)	Olney Central College	Olney	Automotive Service Technicians and Mechanics
Illinois	Certificate	Auto Service Technology II (AUM)	Olney Central College	Olney	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Service Technology (AUM)	Olney Central College	Olney	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technician	Parkland College	Champaign	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology Concentrations	Parkland College	Champaign	Automotive Service Technicians and Mechanics
Illinois	AAS	Diesel Power Equipment Technology	Parkland College	Champaign	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Certificate	Tractor Trailer Driver Training	Parkland College	Champaign	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	AAS	Automotive Technology	Prairie State College	Chicago Heights	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	Rend Lake College	Ina	Automotive Service Technicians and Mechanics
Illinois	AES	Engineering	Rend Lake College	Ina	Civil Engineers

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Illinois	AS	Engineering	Rend Lake College	Ina	Civil Engineers
Illinois	Certificate	Heavy Equipment Transportation	Rend Lake College	Ina	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	Certificate	Truck Driver Training	Rend Lake College	Ina	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	AAS	Diesel Technology	Rend Lake College	Ina	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Automotive Technology	Richland Community College	Decatur	Automotive Service Technicians and Mechanics
Illinois	Basic Certificate	Truck Driver Training (CDL)	Richland Community College	Decatur	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	AAS	Automotive Service Technology	Rock Valley College	Rockford	Automotive Service Technicians and Mechanics
Illinois	Certificate	Commercial Drivers License	Sauk Valley Community College	Dixon	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	Certificate	Automotive Technician Assistant	Shawnee Community College	Ullin	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Technology	Shawnee Community College	Ullin	Automotive Service Technicians and Mechanics
Illinois	Certificate	Truck Driving	Shawnee Community College	Ullin	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	Certificate	Diesel Technology	Southeastern Illinois College	Harrisburg	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Diesel Technology Heavy Equipment	Southeastern Illinois College	Harrisburg	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Diesel Technology Medium Heavy Duty Truck	Southeastern Illinois College	Harrisburg	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Certificate	Truck Driving	Southeastern Illinois College	Harrisburg	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	BS	Automotive Technology	Southern Illinois University - Carbondale	Carbondale	Automotive Service Technicians and Mechanics
Illinois	BS	Civil Engineering	Southern Illinois University - Carbondale	Carbondale	Civil Engineers
Illinois	MS	Civil Engineering	Southern Illinois University - Carbondale	Carbondale	Civil Engineers
Illinois	ME	Civil Engineering	Southern Illinois University - Carbondale	Carbondale	Civil Engineers
Illinois	BS	Civil Engineering with specialization in Environmental Engineering	Southern Illinois University - Carbondale	Carbondale	Civil Engineers
Illinois	BS	Civil Engineering	Southern Illinois University - Edwardsville	Edwardsville	Civil Engineers
Illinois	MS	Civil Engineering	Southern Illinois University - Edwardsville	Edwardsville	Civil Engineers
Illinois	AAS	Diesel and Power Systems Technology	Spoon River College	Canton	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Certificate	Basic Commercial Driver Training	Spoon River College	Canton	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	Certificate	Commercial Driver Training	Spoon River College	Canton	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	Certificate	Preventive Maintenance	Spoon River College	Canton	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Certificate	Rail Transportation & Power System Technology	Spoon River College	Canton	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Automotive Technology	Triton College	River Grove	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology	Triton College	River Grove	Automotive Service Technicians and Mechanics
Illinois	BS	Civil Engineering	University of Illinois at Chicago	Chicago	Civil Engineers
Illinois	MS	Civil Engineering	University of Illinois at Chicago	Chicago	Civil Engineers
Illinois	PhD	Civil Engineering	University of Illinois at Chicago	Chicago	Civil Engineers
Illinois	MUPP	Urban Planning and Policy	University of Illinois at Chicago	Chicago	Urban and Regional Planners
Illinois	PhD	Urban Planning and Policy	University of Illinois at Chicago	Chicago	Urban and Regional Planners

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Illinois	BA	Urban Studies	University of Illinois at Chicago	Chicago	Urban and Regional Planners
Illinois	BS	Civil Engineering	University of Illinois at Urbana - Champaign	Urbana	Civil Engineers
Illinois	PhD	Civil Engineering	University of Illinois at Urbana - Champaign	Urbana	Civil Engineers
Illinois	BS	Supply Chain Management	University of Illinois at Urbana - Champaign	Champaign	Logistics Analysts
Illinois	MS	Supply Chain Management	University of Illinois at Urbana - Champaign	Champaign	Logistics Analysts
Illinois	BA	Urban and Regional Planning	University of Illinois at Urbana - Champaign	Champaign	Urban and Regional Planners
Illinois	MUP	Urban and Regional Planning	University of Illinois at Urbana - Champaign	Champaign	Urban and Regional Planners
Illinois	PhD	Urban and Regional Planning	University of Illinois at Urbana - Champaign	Champaign	Urban and Regional Planners
Illinois	BS	Operations Management	University of Phoenix - Chicago Campus	Schaumburg	Logistics Analysts
Illinois	BS	Supply Chain Management	University of Phoenix - Chicago Campus	Schaumburg	Logistics Analysts
Illinois	AAS	Diesel Equipment Technology	Wabash Valley College	Mt Carmel	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	Certificate	Truck Driving	Wabash Valley College	Mt Carmel	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Illinois	Certificate	Automotive Light Duty Diesel	Waubensee Community College	Sugar Grove	Bus and Truck Mechanics and Diesel Engine Specialists
Illinois	AAS	Automotive Technology	Waubensee Community College	Sugar Grove	Automotive Service Technicians and Mechanics
Illinois	Certificate	Automotive Technology	Waubensee Community College	Sugar Grove	Automotive Service Technicians and Mechanics
Illinois	AAS	Automotive Transportation Service Technology	Waubensee Community College	Sugar Grove	Automotive Service Technicians and Mechanics
Illinois	Certificate	Supply Chain Technician	Waubensee Community College	Sugar Grove	Automotive Service Technicians and Mechanics / Logistics Analysts
Illinois	BS	Urban Studies	Wheaton College	Wheaton	Urban and Regional Planners
Indiana	Certificate	Logistics	Ancilla College	Plymouth	Logistics Analysts
Indiana	AS	Logistics & Inventory Systems	Ancilla College	Plymouth	Logistics Analysts
Indiana	AS	Criminal Justice	Ancilla College	Plymouth	Transit and Railroad Police
Indiana	Certificate	Criminal Justice	Ancilla College	Plymouth	Transit and Railroad Police
Indiana	BS	Logistics & Supply Chain Management	Ball State University	Muncie	Logistics Analysts
Indiana	MS	Urban and Regional Planning	Ball State University	Muncie	Urban and Regional Planners
Indiana	BS	Urban Planning	Ball State University	Muncie	Urban and Regional Planners
Indiana	BS	Automotive Engineering Technology	Indiana State University	Terre Haute	Automotive Service Technicians and Mechanics
Indiana	BS	Civil Engineering Technology	Indiana State University	Terre Haute	Civil Engineers
Indiana	Post-baccalaureate Certificate	Community Development/Urban Studies	Indiana University - Northwest	Gary	Urban and Regional Planners
Indiana	BS	Civil Engineering Technology	Indiana University - Purdue University Fort Wayne	Fort Wayne	Civil Engineers
Indiana	MS	Civil Engineering Technology	Indiana University - Purdue University Fort Wayne	Fort Wayne	Civil Engineers
Indiana	BBA	Supply Chain Management	Indiana University - Purdue University Indianapolis	Indianapolis	Logistics Analysts
Indiana	MBA	Supply Chain Management	Indiana University - Purdue University Indianapolis	Indianapolis	Logistics Analysts
Indiana	Certificate	Advanced Diesel Electronics Controls	Ivy Tech Community College	Indianapolis	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	Certificate	Automotive Service	Ivy Tech Community College	Indianapolis	Automotive Service Technicians and Mechanics
Indiana	AAS	Diesel Heavy Truck	Ivy Tech Community College	Indianapolis	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	Certificate	Diesel Heavy Truck	Ivy Tech Community College	Indianapolis	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	Certificate	Truck Chassis Systems	Ivy Tech Community College	Indianapolis	Bus and Truck Mechanics and Diesel Engine Specialists

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Indiana	Certificate	Automotive Mechanics	Lincoln College of Technology - Indianapolis	Indianapolis	Automotive Service Technicians and Mechanics
Indiana	AAS	Automotive Service Management	Lincoln College of Technology - Indianapolis	Indianapolis	Automotive Service Technicians and Mechanics
Indiana	Diploma	Automotive Technology	Lincoln College of Technology - Indianapolis	Indianapolis	Automotive Service Technicians and Mechanics
Indiana	Certificate	Diesel and Truck Mechanics	Lincoln College of Technology - Indianapolis	Indianapolis	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	AAS	Diesel and Truck Service Management	Lincoln College of Technology - Indianapolis	Indianapolis	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	Diploma	Diesel and Truck Technology	Lincoln College of Technology - Indianapolis	Indianapolis	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	BS	Building Construction Management	Purdue University - Main Campus	West Lafayette	Civil Engineers
Indiana	MS	Building Construction Management	Purdue University - Main Campus	West Lafayette	Civil Engineers
Indiana	BS	Civil Engineering	Purdue University - Main Campus	West Lafayette	Civil Engineers
Indiana	MS	Civil Engineering	Purdue University - Main Campus	West Lafayette	Civil Engineers
Indiana	PhD	Civil Engineering	Purdue University - Main Campus	West Lafayette	Civil Engineers
Indiana	MS	Construction Management Online	Purdue University - Main Campus	West Lafayette	Civil Engineers
Indiana	MS	Global Supply Chain Management	Purdue University - Main Campus	West Lafayette	Logistics Analysts
Indiana	PhD	Operations Management	Purdue University - Main Campus	West Lafayette	Logistics Analysts
Indiana	BS	Supply Chain Management Technology	Purdue University - Main Campus	West Lafayette	Logistics Analysts
Indiana	BS	Supply Chain, Information and Analytics	Purdue University - Main Campus	West Lafayette	Logistics Analysts
Indiana	MS	Technology Leadership & Innovation	Purdue University - Main Campus	West Lafayette	Logistics Analysts
Indiana	BS	Civil Engineering	Purdue University - Northwest Campus	Hammond	Civil Engineers
Indiana	BS	Civil Engineering	Rose - Hulman Institute of Technology	Terre Haute	Civil Engineers
Indiana	MS	Civil Engineering	Rose - Hulman Institute of Technology	Terre Haute	Civil Engineers
Indiana	BS+MS	Civil Engineering	Trine University	Angola	Civil Engineers
Indiana	BS	Civil Engineering	University of Evansville	Evansville	Civil Engineers
Indiana	BS	Civil Engineering	University of Notre Dame	Notre Dame	Civil Engineers
Indiana	MS	Civil Engineering	University of Notre Dame	Notre Dame	Civil Engineers
Indiana	PhD	Civil Engineering	University of Notre Dame	Notre Dame	Civil Engineers
Indiana	BS	Civil Engineering	Valparaiso University	Valparaiso	Civil Engineers
Indiana	AS	Diesel Technology	Vincennes University	Vincennes	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	AS	Diesel Technology - John Deere Ag-Tech	Vincennes University	Vincennes	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	AS	Diesel Technology - John Deere Consumer & Commercial Equipment	Vincennes University	Vincennes	Bus and Truck Mechanics and Diesel Engine Specialists
Indiana	AS	Engineering Science	Vincennes University	Vincennes	Civil Engineers
Indiana	AS	Law Enforcement	Vincennes University	Vincennes	Transit and Railroad Police
Indiana	AS	Law Enforcement Studies	Vincennes University	Vincennes	Transit and Railroad Police
Indiana	AS	Supply Chain Logistics Management	Vincennes University	Vincennes	Logistics Analysts
Indiana	Certificate	Supply Chain Logistics Management	Vincennes University	Vincennes	Logistics Analysts
Indiana	Certificate	Tractor Trailer Driver Training	Vincennes University	Vincennes	Truck Drivers, Heavy and Tractor-Trailer
Indiana	AS	Diesel Technology - Precision Agriculture Technician Concentration	Vincennes University	Vincennes	Bus and Truck Mechanics and Diesel Engine Specialists
Michigan	AS	Pre-Engineering	Alpena Community College	Alpena	Civil Engineers



## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Michigan	AAS	Automotive Service & Repair	Alpena Community College	Alpena	Automotive Service Technicians and Mechanics
Michigan	Cerificate	Automotive Service & Repair	Alpena Community College	Alpena	Automotive Service Technicians and Mechanics
Michigan	Master Certificate	Automotive Service & Repair	Alpena Community College	Alpena	Automotive Service Technicians and Mechanics
Michigan	BBA	Supply Chain Management	Baker Colleg of Muskegon	Muskegon	Logistics Analysts
Michigan	BBA	Supply Chain Management	Baker College of Auburn Hills	Auburn Hills	Logistics Analysts
Michigan	AAS	Automotive Services Technology	Baker College of Cadillac	Cadillac	Automotive Service Technicians and Mechanics
Michigan	Cerificate	Automotive Services Technology	Baker College of Cadillac	Cadillac	Automotive Service Technicians and Mechanics
Michigan	BBA	Supply Chain Management	Baker College of Cadillac	Cadillac	Logistics Analysts
Michigan	Cerificate	Truck Driver	Baker College of Cadillac	Cadillac	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Michigan	BBA	Supply Chain Management	Baker College of Cass City	Cass City	Logistics Analysts
Michigan	AAS	Automotive Services Technology	Baker College of Clinton Township	Clinton Township	Automotive Service Technicians and Mechanics
Michigan	Cerificate	Automotive Services Technology	Baker College of Clinton Township	Clinton Township	Automotive Service Technicians and Mechanics
Michigan	BBA	Supply Chain Management	Baker College of Clinton Township	Clinton Township	Logistics Analysts
Michigan	BBA	Supply Chain Management	Baker College of Coldwater	Coldwater	Logistics Analysts
Michigan	AAS	Automotive Services Technology	Baker College of Flint	Flint	Automotive Service Technicians and Mechanics
Michigan	Cerificate	Automotive Services Technology	Baker College of Flint	Flint	Automotive Service Technicians and Mechanics
Michigan	BS	Civil Engineering	Baker College of Flint	Flint	Civil Engineers
Michigan	BSM	Service Management - Automotive/Diesel	Baker College of Flint	Flint	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Michigan	AB	Supply Chain Management	Baker College of Flint	Flint	Logistics Analysts
Michigan	BBA	Supply Chain Management	Baker College of Flint	Flint	Logistics Analysts
Michigan	Cerificate	Truck Driver	Baker College of Flint	Flint	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Michigan	BBA	Supply Chain Management	Baker College of Fremont	Fremont	Logistics Analysts
Michigan	BBA	Supply Chain Management	Baker College of Jackson	Jackson	Logistics Analysts
Michigan	AAS	Automotive Services Technology	Baker College of Owosso	Owosso	Automotive Service Technicians and Mechanics
Michigan	Cerificate	Automotive Services Technology	Baker College of Owosso	Owosso	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Services Technology - MOPAR CAP	Baker College of Owosso	Owosso	Automotive Service Technicians and Mechanics
Michigan	AAS	Diesel Service Technology	Baker College of Owosso	Owosso	Bus and Truck Mechanics and Diesel Engine Specialists
Michigan	Cerificate	Diesel Service Technology	Baker College of Owosso	Owosso	Bus and Truck Mechanics and Diesel Engine Specialists
Michigan	BSM	Service Management - Automotive/Diesel	Baker College of Owosso	Owosso	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Michigan	BBA	Supply Chain Management	Baker College of Owosso	Owosso	Logistics Analysts
Michigan	BBA	Supply Chain Management	Baker College of Port Huron	Port Huron	Logistics Analysts
Michigan	AAS	Automotive Technology	Bay de Noc Community College	Escanaba	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Service Educational Program (GM ASEP) - Associate in Applied Science	Delta College	University Center	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Service Technology	Delta College	University Center	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Service Technology	Delta College	University Center	Automotive Service Technicians and Mechanics

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Michigan	BA/BS	Urban and Regional Planning	Eastern Michigan University	Ypsilanti	Urban and Regional Planners
Michigan	MS	Urban and Regional Planning	Eastern Michigan University	Ypsilanti	Urban and Regional Planners
Michigan	BS	Automotive Management	Ferris State University	Big Rapids	Automotive Service Technicians and Mechanics
Michigan	Cerificate	Automotive Service	Glen Oaks Community College	Centreville	Automotive Service Technicians and Mechanics
Michigan	Cerificate	Automotive Technician	Glen Oaks Community College	Centreville	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology	Gogebic Community College	Ironwood	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Technology	Gogebic Community College	Ironwood	Automotive Service Technicians and Mechanics
Michigan	AS	Engineering	Gogebic Community College	Ironwood	Civil Engineers
Michigan	Certificate	Automotive	Grand Rapids Community College	Grand Rapids	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology	Grand Rapids Community College	Grand Rapids	Automotive Service Technicians and Mechanics
Michigan	Certificate	Job Training Automotive Program	Grand Rapids Community College	Grand Rapids	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Service	Henry Ford College	Dearborn	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Service Management	Henry Ford College	Dearborn	Automotive Service Technicians and Mechanics
Michigan	AB	Automotive Service Management	Henry Ford College	Dearborn	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology	Henry Ford College	Dearborn	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology	Henry Ford College	Dearborn	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology - Auto Air Conditioning, Brakes, Alignment	Henry Ford College	Dearborn	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology - Dynamometer Technician	Henry Ford College	Dearborn	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Service Technology	Jackson College	Jackson	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Service Technology	Jackson College	Jackson	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Automatic Trans/Axle	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Brake Systems	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Electrical/Electronic Systems	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Engine Performance	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Engine Repair	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Heat/Air Conditioning	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate	Auto Hybrid & Adv Tech Vehicle	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Light Duty Diesel	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Manual Drive Train/Axles	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Auto Suspension/Steering	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Drivability Systems	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Undercar Systems	Kalamazoo Valley Community College	Kalamazoo	Automotive Service Technicians and Mechanics

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Michigan	MS	Operations Management	Kettering University	Flint	Logistics Analysts
Michigan	Certificate of Completion	Automotive Diesel Service Specialist	Kirtland Community College	Roscommon	Bus and Truck Mechanics and Diesel Engine Specialists
Michigan	Certificate of Completion	Automotive Technology	Kirtland Community College	Roscommon	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology	Kirtland Community College	Roscommon	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology Management	Kirtland Community College	Roscommon	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology - Advanced Technology Vehicle Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology - Brakes and Suspension Systems Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology - Drivability and Electrical Diagnostic Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology - Drivability and Electrical Diagnostic Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology - Electrical and Air Conditioning Diagnostic Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology - Engine and Transmission Overhaul Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology - Hybrid and Alternative Fuels	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	Certificate of Completion	Automotive Technology - Maintenance/Light Repair Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology -Undercar Maintenance and Repair Specialist	Lansing Community College	Delta Township	Automotive Service Technicians and Mechanics
Michigan	AAS	Construction Management	Lansing Community College	Delta Township	Operating Engineers and Other Construction Equipment Operation
Michigan	Certificate of Achievement	Construction Management	Lansing Community College	Delta Township	Operating Engineers and Other Construction Equipment Operation
Michigan	AAS	Heavy Equipment Repair	Lansing Community College	Delta Township	Rail-Track Laying and Maintenance Equipment Operators
Michigan	Certificate of Achievement	Heavy Equipment Repair	Lansing Community College	Delta Township	Rail-Track Laying and Maintenance Equipment Operators
Michigan	BS	Civil Engineering	Lawrence Technological University	Southfield	Civil Engineers
Michigan	MS	Civil Engineering	Lawrence Technological University	Southfield	Civil Engineers
Michigan	PhD	Civil Engineering	Lawrence Technological University	Southfield	Civil Engineers
Michigan	MS	Construction Engineering Management	Lawrence Technological University	Southfield	Civil Engineers
Michigan	AS	Construction Engineering Technology	Lawrence Technological University	Southfield	Civil Engineers
Michigan	BS	Construction Engineering Technology + Management	Lawrence Technological University	Southfield	Civil Engineers
Michigan	MS	Engineering Management	Lawrence Technological University	Southfield	Logistics Analysts
Michigan	MS	Engineering Management	Lawrence Technological University	Southfield	Logistics Analysts
Michigan	Certificate	Urban Design	Lawrence Technological University	Southfield	Urban and Regional Planners
Michigan	MS	Urban Design	Lawrence Technological University	Southfield	Urban and Regional Planners
Michigan	Certificate	Alternative Fuels	Macomb Community College	Warren	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology	Macomb Community College	Warren	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Technology	Macomb Community College	Warren	Automotive Service Technicians and Mechanics

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Michigan	Certificate	Automotive Technology	Macomb Community College	Warren	Automotive Service Technicians and Mechanics
Michigan	Certificate	Brakes & Suspension	Macomb Community College	Warren	Automotive Service Technicians and Mechanics
Michigan	Certificate	Driveline	Macomb Community College	Warren	Automotive Service Technicians and Mechanics
Michigan	Certificate	Electrical & Air Conditioning	Macomb Community College	Warren	Automotive Service Technicians and Mechanics
Michigan	Certificate	Engines	Macomb Community College	Warren	Automotive Service Technicians and Mechanics
Michigan	Certificate	Global Logistics & Dispatch Specialists	MIAT College of Technology	Canton	Dispatchers, Except Police, Fire, and Ambulance
Michigan	Certificate of Completion	Automotive Technology	Michigan Career & Technical Institute	Plainwell	Automotive Service Technicians and Mechanics
Michigan	BS	Civil Engineering	Michigan State University	East Lansing	Civil Engineers
Michigan	MS	Civil Engineering	Michigan State University	East Lansing	Civil Engineers
Michigan	PhD	Civil Engineering	Michigan State University	East Lansing	Civil Engineers
Michigan	PhD	Logistics Management	Michigan State University	East Lansing	Logistics Analysts
Michigan	PhD	Operations & Sourcing Management	Michigan State University	East Lansing	Logistics Analysts
Michigan	BA	Supply Chain Management	Michigan State University	East Lansing	Logistics Analysts
Michigan	MS	Supply Chain Management	Michigan State University	East Lansing	Logistics Analysts
Michigan	BS	Urban and Regional Planning	Michigan State University	East Lansing	Urban and Regional Planners
Michigan	MURP	Urban and Regional Planning	Michigan State University	East Lansing	Urban and Regional Planners
Michigan	PhD	Urban and Regional Planning	Michigan State University	East Lansing	Urban and Regional Planners
Michigan	BS	Civil Engineering	Michigan Technological University	Houghton	Civil Engineers
Michigan	MS	Civil Engineering	Michigan Technological University	Houghton	Civil Engineers
Michigan	PhD	Civil Engineering	Michigan Technological University	Houghton	Civil Engineers
Michigan	BS	Management	Michigan Technological University	Houghton	Logistics Analysts
Michigan	Certificate of Achievement	Automotive Service Mechanic	Mid Michigan Community College	Harrison	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology	Mid Michigan Community College	Harrison	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Technology	Mid Michigan Community College	Harrison	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Engineering Technology	Monroe County Community College	Monroe	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Engineering Technology	Monroe County Community College	Monroe	Automotive Service Technicians and Mechanics
Michigan	AAS	Industrial Automation Maintenance	Montcalm Community College	Sidney	Automotive Service Technicians and Mechanics
Michigan	Certificate	Truck Driver Entrepreneur	Montcalm Community College	Sidney	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Michigan	AAS	Automotive Technology	Mott Community College	Flint	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Undercar Repair	Mott Community College	Flint	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Repair Entrepreneur	Muskegon Community College	Muskegon	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Technology	Muskegon Community College	Muskegon	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Technology	Muskegon Community College	Muskegon	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Service Certificate	Northern Michigan University	Marquette	Automotive Service Technicians and Mechanics
Michigan	AT	Automotive Service Technology	Northern Michigan University	Marquette	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive - Electrical & Drivability Specialist	Northwestern Michigan College	Traverse City	Automotive Service Technicians and Mechanics

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Michigan	AAS	Automotive Service Technology	Northwestern Michigan College	Traverse City	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive Under Car Specialist	Northwestern Michigan College	Traverse City	Automotive Service Technicians and Mechanics
Michigan	Certificate of Achievement	Automotive: Hybrid Technology Specialist Program Requirements	Northwestern Michigan College	Traverse City	Automotive Service Technicians and Mechanics
Michigan	BS	Deck Officer	Northwestern Michigan College	Traverse City	Captains, Mates, and Pilots of Water Vessels
Michigan	BS	Engineering Officer	Northwestern Michigan College	Traverse City	Captains, Mates, and Pilots of Water Vessels
Michigan	BS	Marine Technology	Northwestern Michigan College	Traverse City	Captains, Mates, and Pilots of Water Vessels
Michigan	AAS	Automobile Servicing	Oakland Community College	Auburn Hills	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automobile Servicing	Oakland Community College	Auburn Hills	Automotive Service Technicians and Mechanics
Michigan	AE	Engineering	Schoolcraft College	Livonia	Civil Engineers
Michigan	AE	Pre-Engineering	Schoolcraft College	Livonia	Civil Engineers
Michigan	AAS	Automotive Technology	Southwestern Michigan College	Dowagiac	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Technology	Southwestern Michigan College	Dowagiac	Automotive Service Technicians and Mechanics
Michigan	AE	Engineering (Transfer)	St Clair County Community College	Port Huron	Civil Engineers
Michigan	Certificate	Engineering Technology	St Clair County Community College	Port Huron	Civil Engineers
Michigan	MS	Civil and Environmental Engineering	University of Detroit Mercy	Detroit	Civil Engineers
Michigan	BS	Civil Engineering	University of Detroit Mercy	Detroit	Civil Engineers
Michigan	DE	Engineering	University of Detroit Mercy	Detroit	Civil Engineers
Michigan	BS	Civil Engineering	University of Michigan	Ann Arbor	Civil Engineers
Michigan	MS	Civil Engineering	University of Michigan	Ann Arbor	Civil Engineers
Michigan	PhD	Civil Engineering	University of Michigan	Ann Arbor	Civil Engineers
Michigan	MS	Construction Engineering and Management	University of Michigan	Ann Arbor	Civil Engineers
Michigan	BS	Engineering for the Marine Environment	University of Michigan	Ann Arbor	Marine Engineers
Michigan	MS	Engineering for the Marine Environment	University of Michigan	Ann Arbor	Marine Engineers
Michigan	PhD	Engineering for the Marine Environment	University of Michigan	Ann Arbor	Marine Engineers
Michigan	MUP	Urban Planning	University of Michigan	Ann Arbor	Urban and Regional Planners
Michigan	PhD	Urban Planning	University of Michigan	Ann Arbor	Urban and Regional Planners
Michigan	MS	Automotive Systems Engineering	University of Michigan - Dearborn	Dearborn	Automotive Service Technicians and Mechanics
Michigan	BS	Urban and Regional Studies	University of Michigan - Dearborn	Dearborn	Urban and Regional Planners
Michigan	AAS	Automotive Service Technology	Washtenaw Community College	Ann Arbor	Automotive Service Technicians and Mechanics
Michigan	Certificate	Automotive Services Technician	Washtenaw Community College	Ann Arbor	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Test Technician	Washtenaw Community College	Ann Arbor	Automotive Service Technicians and Mechanics
Michigan	AAS	Automotive Service Technology	Wayne County Community College District	Detroit	Automotive Service Technicians and Mechanics
Michigan	BS	Civil Engineering	Wayne State University	Detroit	Civil Engineers
Michigan	MS	Civil Engineering	Wayne State University	Detroit	Civil Engineers
Michigan	PhD	Civil Engineering	Wayne State University	Detroit	Civil Engineers
Michigan	MS	Urban Planning	Wayne State University	Detroit	Urban and Regional Planners
Michigan	BA	Urban Studies	Wayne State University	Detroit	Urban and Regional Planners

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Michigan	BS	Civil Engineering	Western Michigan University	Kalamazoo	Civil Engineers
Michigan	MS	Civil Engineering	Western Michigan University	Kalamazoo	Civil Engineers
Michigan	BS	Community and Regional Planning	Western Michigan University	Kalamazoo	Urban and Regional Planners
Michigan	BS	Construction Engineering	Western Michigan University	Kalamazoo	Civil Engineers
Michigan	PhD	Engineering and Applied Sciences	Western Michigan University	Kalamazoo	Civil Engineers
Minnesota	AAS	Diesel Mechanics	Alexandria Technical & Community College	Alexandria	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Diploma	Marine, Motorcycle, & Powersports Technician	Alexandria Technical & Community College	Alexandria	Marine Engineers
Minnesota	Certificate	Professional Truck Driver	Alexandria Technical & Community College	Alexandria	Truck Drivers, Light or Delivery Services
Minnesota	AAS	Automotive Technician	Anoka Technical College	Anoka	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Technician	Anoka Technical College	Anoka	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Technology	Central Lakes College - Brainerd	Brainerd	Automotive Service Technicians and Mechanics
Minnesota	AAS	Diesel and Heavy Equipment Technology	Central Lakes College - Brainerd	Brainerd	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Diploma	Diesel and Heavy Equipment Technology	Central Lakes College - Brainerd	Brainerd	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Diploma	Heavy Equipment Operations & Maintenance	Central Lakes College - Brainerd	Brainerd	Paving, Surfacing, and Tamping Equipment Operators
Minnesota	Diploma	Automotive Service Technology	Century College	White Bear Lake	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Basic Automotive Service	Century College	White Bear Lake	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Maintenance and Light Repair	Dakota County Technical College	Rosemount	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Technician	Dakota County Technical College	Rosemount	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Technician	Dakota County Technical College	Rosemount	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Breaks, Suspension & Driveline	Dakota County Technical College	Rosemount	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Electrical, Electronics & HVAC	Dakota County Technical College	Rosemount	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Heavy Construction Equipment Maintenance	Dakota County Technical College	Rosemount	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Diploma	Heavy Construction Equipment Mechanic	Dakota County Technical College	Rosemount	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	AAS	Heavy Construction Equipment Technology	Dakota County Technical College	Rosemount	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	AAS	Heavy Duty Truck Technology	Dakota County Technical College	Rosemount	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Diploma	Heavy Duty Truck Technology	Dakota County Technical College	Rosemount	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Certificate	Railroad Conductor Technology	Dakota County Technical College	Rosemount	Railroad Conductors and Yardmasters
Minnesota	Certificate	Truck Fleet Maintenance	Dakota County Technical College	Rosemount	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	AAS	Automotive Service Technology	Dunwoody College of Technology	Minneapolis	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Technician Apprenticeship	Dunwoody College of Technology	Minneapolis	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Technician Apprenticeship	Dunwoody College of Technology	Minneapolis	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Technician	Hennepin Technical College	Brooklyn Park	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Technician	Hennepin Technical College	Brooklyn Park	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Marine, Motorcycle and Outdoor Power Equipment Technician	Hennepin Technical College	Brooklyn Park	Marine Engineers
Minnesota	AAS	Marine, Motorcycle and Outdoor Power Equipment Technician	Hennepin Technical College	Brooklyn Park	Marine Engineers
Minnesota	Diploma	Medium/Heavy Truck Drivetrain Technician	Hennepin Technical College	Brooklyn Park	Truck Drivers, Light or Delivery Services
Minnesota	Diploma	Medium/Heavy Truck Maintenance Technician	Hennepin Technical College	Brooklyn Park	Truck Drivers, Light or Delivery Services

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Minnesota	AAS	Medium/Heavy Truck Technology	Hennepin Technical College	Brooklyn Park	Truck Drivers, Light or Delivery Services
Minnesota	Diploma	Automotive Technician	Hibbing Community College	Hibbing	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Diesel Mechanics/Heavy Equipment Maintenance	Hibbing Community College	Hibbing	Rail Car Repairers
Minnesota	AAS	Diesel Mechanics/Heavy Equipment Maintenance	Hibbing Community College	Hibbing	Rail Car Repairers
Minnesota	Certificate	Truck Driving	Hibbing Community College	Hibbing	Truck Drivers, Light or Delivery Services
Minnesota	AS	Construction Management	Inver Hills Community College	Inver Grove Heights	Construction Laborers
Minnesota	Certificate	Construction Management	Inver Hills Community College	Inver Grove Heights	Construction Laborers
Minnesota	AS	Engineering Fundamentals	Inver Hills Community College	Inver Grove Heights	Civil Engineers
Minnesota	AAS	Auto Service Technology	Lake Superior College	Duluth	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Auto Service Technology	Lake Superior College	Duluth	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Brake & Suspension Technician	Lake Superior College	Duluth	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Over the Road Truck Driving	Lake Superior College	Duluth	Automotive Service Technicians and Mechanics
Minnesota	AS	Construction Management	Mesabi Range College	Virginia	Construction Laborers
Minnesota	Certificate	Construction Management	Mesabi Range College	Virginia	Construction Laborers
Minnesota	Diploma	Construction Trades	Mesabi Range College	Virginia	Construction Laborers
Minnesota	AS	Engineering	Mesabi Range College	Virginia	Civil Engineers
Minnesota	Certificate	Masonry	Mesabi Range College	Virginia	Cement Masons and Concrete Finishers
Minnesota	Diploma	Architectural Technology	Minneapolis Community and Technical College	Minneapolis	Civil Engineers
Minnesota	Diploma	Automotive Technology	Minnesota State College - Southeast Technical	Winona	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Diesel Maintenance	Minnesota State College - Southeast Technical	Winona	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Diploma	Diesel Maintenance Technician	Minnesota State College - Southeast Technical	Winona	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Certificate	Truck Driving	Minnesota State College - Southeast Technical	Winona	Truck Drivers, Light or Delivery Services
Minnesota	Certificate	Undercar Specialist	Minnesota State College - Southeast Technical	Winona	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Service Technology	Minnesota State Community and Technical College	Fergus Falls	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Service Technology	Minnesota State Community and Technical College	Fergus Falls	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Diesel Equipment Technology	Minnesota State Community and Technical College	Fergus Falls	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	AAS	Diesel Equipment Technology	Minnesota State Community and Technical College	Fergus Falls	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	BS	Automotive Engineering Technology	Minnesota State University - Mankato	Mankato	Automotive Service Technicians and Mechanics
Minnesota	BS	Civil Engineering	Minnesota State University - Mankato	Mankato	Civil Engineers
Minnesota	Certificate	Automotive Advanced Engine Performance & Electrical	Minnesota West Community and Technical College	Jackson	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Drivetrain Systems	Minnesota West Community and Technical College	Jackson	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Engine Repair & Electrical	Minnesota West Community and Technical College	Jackson	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Technician	Minnesota West Community and Technical College	Jackson	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Technology	Minnesota West Community and Technical College	Jackson	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Diesel - Advanced Diesel	Minnesota West Community and Technical College	Canby	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Certificate	Diesel - Basic Diesel	Minnesota West Community and Technical College	Canby	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Diploma	Diesel Mechanics (Ag & Truck)	Minnesota West Community and Technical College	Canby	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Certificate	Diesel Powertrain and Hydraulics	Minnesota West Community and Technical College	Canby	Bus and Truck Mechanics and Diesel Engine Specialists

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Minnesota	Diploma	Diesel Technician (Ag & Truck)	Minnesota West Community and Technical College	Canby	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	AAS	Diesel Technology	Minnesota West Community and Technical College	Canby	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	AS	Engineering Broad Field	Normandale Community College	Bloomington	Civil Engineers
Minnesota	AS	Construction Management	North Hennepin Community College	Brooklyn Park	Construction Laborers
Minnesota	Certificate	Construction Management	North Hennepin Community College	Brooklyn Park	Construction Laborers
Minnesota	AS	Pre-Engineering	North Hennepin Community College	Brooklyn Park	Civil Engineers
Minnesota	Certificate	Automotive Electronics and Drivability	Northland Community and Technical College	Thief River Falls	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Engine Repair, Suspension, and Brakes	Northland Community and Technical College	Thief River Falls	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Service Technology	Northland Community and Technical College	Thief River Falls	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Service Technology	Northland Community and Technical College	Thief River Falls	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Commercial Vehicle Operation	Northland Community and Technical College	Thief River Falls	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Service	Northwest Technical College	Bemidji	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Service Technician	Northwest Technical College	Bemidji	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Service Technology	Northwest Technical College	Bemidji	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Cylinder Head Engine Machining	Northwest Technical College	Bemidji	Automotive Service Technicians and Mechanics
Minnesota	Diploma	High Performance Engine Machinist	Northwest Technical College	Bemidji	Automotive Service Technicians and Mechanics
Minnesota	AAS	High Performance Engine Machinist	Northwest Technical College	Bemidji	Automotive Service Technicians and Mechanics
Minnesota	Certificate	Automotive Technology	Pine Technical College	Pine City	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Technology	Pine Technical College	Pine City	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Technology	Pine Technical College	Pine City	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Service Technology	Ridgewater College	Willmar	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Service Technology	Ridgewater College	Willmar	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Service Technology	Riverland Community College	Austin	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Service Technology	Riverland Community College	Austin	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Diesel Technology	Riverland Community College	Austin	Bus and Truck Mechanics and Diesel Engine Specialists
Minnesota	Certificate	Truck Driving	Riverland Community College	Austin	Truck Drivers, Light or Delivery Services
Minnesota	Diploma	Automobile Mechanic	Rochester Community and Technical College	Rochester	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotive Service Technician	Saint Paul College	Saint Paul	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Service Technician	Saint Paul College	Saint Paul	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Truck Technician	Saint Paul College	Saint Paul	Truck Drivers, Light or Delivery Services
Minnesota	Diploma	Automotive Service	South Central College	North Mankato	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotive Service	South Central College	North Mankato	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Automotives Service Technician	St Cloud Technical and Community College	Saint Cloud	Automotive Service Technicians and Mechanics
Minnesota	AAS	Automotives Service Technician	St Cloud Technical and Community College	Saint Cloud	Automotive Service Technicians and Mechanics
Minnesota	Diploma	Medium/Heavy Truck Technician	St Cloud Technical and Community College	Saint Cloud	Truck Drivers, Light or Delivery Services
Minnesota	AAS	Medium/Heavy Truck Technician	St Cloud Technical and Community College	Saint Cloud	Truck Drivers, Light or Delivery Services
Minnesota	BS	Civil Engineering	University of Minnesota - Duluth	Duluth	Civil Engineers
Minnesota	MS	Civil Engineering	University of Minnesota - Duluth	Duluth	Civil Engineers



## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Minnesota	BS	Civil Engineering	University of Minnesota - Twin Cities	Minneapolis	Civil Engineers
Minnesota	PhD	Civil Engineering	University of Minnesota - Twin Cities	Minneapolis	Civil Engineers
Minnesota	MS	Transportation Engineering	University of Minnesota - Twin Cities	Minneapolis	Civil Engineers
Ohio	BS	Supply Chain Management	Ashland University	Ashland	Logistics Analysts
Ohio	AAS	Civil Engineering	Belmont College	St Clairsville	Civil Engineers
Ohio	AS+BS	Civil Engineering 2+2	Belmont College	St Clairsville	Civil Engineers
Ohio	AAS	Criminal Justice	Belmont College	St Clairsville	Transit and Railroad Police
Ohio	BS	Civil Engineering	Case Western Reserve University	Cleveland	Civil Engineers
Ohio	MS	Civil Engineering	Case Western Reserve University	Cleveland	Civil Engineers
Ohio	MS	Civil Engineering	Case Western Reserve University	Cleveland	Civil Engineers
Ohio	PhD	Civil Engineering	Case Western Reserve University	Cleveland	Civil Engineers
Ohio	AAB	Automotive Service Management	Cincinnati State Technical and Community College	Cincinnati	Automotive Service Technicians and Mechanics
Ohio	Certificate	Automotive Service Technician	Cincinnati State Technical and Community College	Cincinnati	Automotive Service Technicians and Mechanics
Ohio	AAS	Civil Engineering Technology Architectural Option	Cincinnati State Technical and Community College	Cincinnati	Civil Engineers
Ohio	AAS	Civil Engineering Technology Construction Management Option	Cincinnati State Technical and Community College	Cincinnati	Civil Engineers
Ohio	AAS	Civil Engineering Technology Surveying Option (CETS)	Cincinnati State Technical and Community College	Cincinnati	Civil Engineers
Ohio	AAB	Supply Chain Management	Cincinnati State Technical and Community College	Cincinnati	Logistics Analysts
Ohio	ATS	Diesel Technology	Clark State Community College	Springfield	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	Certificate	Diesel Technology Short - Term	Clark State Community College	Springfield	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	Certificate	Logistics and Supply Chain Management	Clark State Community College	Springfield	Logistics Analysts
Ohio	Post-Degree Certificate	Supply Chain Management Degree + Departmental Certificate	Clark State Community College	Springfield	Logistics Analysts
Ohio	BS	Civil Engineering	Cleveland State University	Cleveland	Civil Engineers
Ohio	MS	Civil Engineering, with Specializations	Cleveland State University	Cleveland	Civil Engineers
Ohio	BS	Urban Studies	Cleveland State University	Cleveland	Urban and Regional Planners
Ohio	MS	Urban Studies	Cleveland State University	Cleveland	Urban and Regional Planners
Ohio	PhD	Urban Studies and Public Affairs	Cleveland State University	Cleveland	Urban and Regional Planners
Ohio	AAS	Automotive Technology	Columbus State Community College	Columbus	Automotive Service Technicians and Mechanics
Ohio	Certificate	Automotive Technology	Columbus State Community College	Columbus	Automotive Service Technicians and Mechanics
Ohio	AAS	Civil Engineering Technology	Columbus State Community College	Columbus	Civil Engineers
Ohio	AAS	Supply Chain Management	Columbus State Community College	Columbus	Logistics Analysts
Ohio	Certificate	Supply Chain Management	Columbus State Community College	Columbus	Logistics Analysts
Ohio	AAS	Automotive Technology	Cuyahoga Community College District	Cleveland	Automotive Service Technicians and Mechanics
Ohio	Certificate	Automotive Technology	Cuyahoga Community College District	Cleveland	Automotive Service Technicians and Mechanics
Ohio	AAS	Construction Engineering Technology	Cuyahoga Community College District	Cleveland	Civil Engineers
Ohio	AAS	Equipment Maintenance Technology, Industrial Equipment Supervision Option	Edison State Community College	Piqua	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Industrial Management - Industrial Operations Option	Edison State Community College	Piqua	Logistics Analysts

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Ohio	AAS	Industrial Management - Operations Technology Option	Edison State Community College	Piqua	Logistics Analysts
Ohio	Certificate	Operations Technology	Edison State Community College	Piqua	Logistics Analysts
Ohio	Certificate	Supply Chain Management	Edison State Community College	Piqua	Logistics Analysts
Ohio	BS	Operations & Supply Chain Management	Franklin University	Columbus	Logistics Analysts
Ohio	Certificate	600 Master Truck Driver Training	Hamrick School	Medina	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Ohio	Certificate	Advanced Truck Driver Training	Hamrick School	Medina	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Ohio	AAS	Heavy Equipment Management	Hocking College	Nelsonville	Bus and Truck Mechanics and Diesel Engine Specialists / Crane and Tower Operators / Highway Maintenance Workers / Paving, Surfacing, and Tamping Equipment Operators / Truck Drivers, Heavy and Tractor-Trailer
Ohio	Certificate	Heavy Equipment Operator	Hocking College	Nelsonville	Bus and Truck Mechanics and Diesel Engine Specialists / Crane and Tower Operators / Highway Maintenance Workers / Paving, Surfacing, and Tamping Equipment Operators / Truck Drivers, Heavy and Tractor-Trailer
Ohio	Certificate	Urban Studies and Planning	Kent State University	Kent	Urban and Regional Planners
Ohio	AAS	Civil Engineering Technology	Lakeland Community College	Kirtland	Civil Engineers
Ohio	Certificate	Automation Engineering Technologies - Maintenance Technician	Lorain County Community College	Elyria	Automotive Service Technicians and Mechanics
Ohio	AAS	Automation Engineering Technologies - Systems Specialist Major	Lorain County Community College	Elyria	Automotive Service Technicians and Mechanics
Ohio	AAS	Automation Engineering Technology - Maintenance/Repair	Lorain County Community College	Elyria	Automotive Service Technicians and Mechanics
Ohio	BS	Supply Chain and Operations Management	Miami University - Oxford	Oxford	Logistics Analysts
Ohio	BS	Urban and Regional Planning	Miami University - Oxford	Oxford	Urban and Regional Planners
Ohio	AAS	Criminal Justice	North Central State College	Mansfield	Transit and Railroad Police
Ohio	AAB	Logistics & Supply Chain Management	Northwest State Community College	Archbold	Logistics Analysts
Ohio	Certificate	Logistics & Supply Chain Management	Northwest State Community College	Archbold	Logistics Analysts
Ohio	Certificate	Truck Driving	Northwest State Community College	Archbold	Bus Drivers, School or Special Clients / Bus Drivers, Transit and Intercity / Truck Drivers, Light or Delivery Services / Truck Drivers, Heavy and Tractor-Trailer
Ohio	BS	Civil Engineering	Ohio Northern University	Ada	Civil Engineers
Ohio	BS	City and Regional Planning	Ohio State University - Main Campus	Columbus	Urban and Regional Planners
Ohio	MS	City and Regional Planning	Ohio State University - Main Campus	Columbus	Urban and Regional Planners
Ohio	PhD	City and Regional Planning	Ohio State University - Main Campus	Columbus	Urban and Regional Planners
Ohio	BS	Civil Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	PhD	Civil Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	MS	Construction Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	MS	Environmental Engineering and Water Resources	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	PhD	Environmental Engineering and Water Resources	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	MS	Geoinformation and Geodetic Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	PhD	Geoinformation and Geodetic Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	MB	Logistics Engineering	Ohio State University - Main Campus	Columbus	Logistics Analysts
Ohio	BS	Logistics Management	Ohio State University - Main Campus	Columbus	Logistics Analysts

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Ohio	BS	Operations Management	Ohio State University - Main Campus	Columbus	Logistics Analysts
Ohio	PhD	Operations Management	Ohio State University - Main Campus	Columbus	Logistics Analysts
Ohio	MS	Structures Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	PhD	Structures Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	MS	Transportation Engineering	Ohio State University - Main Campus	Columbus	Civil Engineers
Ohio	AAS	Auto Diesel Technology	Ohio Technical College	Cleveland	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Automotive Mechanic Technician	Ohio Technical College	Cleveland	Automotive Service Technicians and Mechanics
Ohio	AAS	Diesel Equipment Technology	Ohio Technical College	Cleveland	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	BS	Civil Engineering	Ohio University - Main Campus	Athens	Civil Engineers
Ohio	MS	Civil Engineering	Ohio University - Main Campus	Athens	Civil Engineers
Ohio	MS	Civil Engineering	Ohio University - Main Campus	Athens	Civil Engineers
Ohio	PhD	Civil Engineering	Ohio University - Main Campus	Athens	Civil Engineers
Ohio	BS	Urban Planning and Sustainability	Ohio University - Main Campus	Athens	Urban and Regional Planners
Ohio	Certificate	Automotive Service	Ohio Wesleyan University	Delaware	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology	Ohio Wesleyan University	Delaware	Automotive Service Technicians and Mechanics
Ohio	Certificate	Diesel Service	Ohio Wesleyan University	Delaware	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Diesel Technology	Ohio Wesleyan University	Delaware	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAB	Logistics/Supply Chain Major	Ohio Wesleyan University	Delaware	Logistics Analysts
Ohio	BS	Urban Studies	Ohio Wesleyan University	Delaware	Urban and Regional Planners
Ohio	AAS	Architectual Engineering Technology	Owen Community College	Perrysburg	Civil Engineers
Ohio	Certificate	Automotive Service	Owen Community College	Perrysburg	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Service Management	Owen Community College	Perrysburg	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology	Owen Community College	Perrysburg	Automotive Service Technicians and Mechanics
Ohio	Certificate	Diesel Service	Owen Community College	Perrysburg	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Diesel Technology	Owen Community College	Perrysburg	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AS	Engineering Concentration	Owen Community College	Perrysburg	Civil Engineers
Ohio	AAS	General Motors Corporation Automotive Service Education Program	Owen Community College	Perrysburg	Automotive Service Technicians and Mechanics
Ohio	AAS	John Deere Tech	Owen Community College	Perrysburg	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Concrete Technology	Rhodes State College	Lima	Cement Masons and Concrete Finishers
Ohio	Certificate	Automotive Technology	Sinclair Community College	Dayton	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology	Sinclair Community College	Dayton	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology (Chrysler CAP)	Sinclair Community College	Dayton	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology (GM ASEP)	Sinclair Community College	Dayton	Automotive Service Technicians and Mechanics
Ohio	Certificate	Automotive Technology (Honda PACT)	Sinclair Community College	Dayton	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology (Honda PACT)	Sinclair Community College	Dayton	Automotive Service Technicians and Mechanics
Ohio	AAS	Business Management/Supply Chain Management	Sinclair Community College	Dayton	Logistics Analysts

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Ohio	Certificate	Supply Chain Management	Sinclair Community College	Dayton	Logistics Analysts
Ohio	AAB	Logistics Management	Southern State Community College	Hillsboro	Logistics Analysts
Ohio	Certificate	Automotive Maintenance and Light Repair	Stark State College	North Canton	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology	Stark State College	North Canton	Automotive Service Technicians and Mechanics
Ohio	Certificate	Automotive Transmission and Driveline	Stark State College	North Canton	Automotive Service Technicians and Mechanics
Ohio	AAS	Civil Engineering Technology	Stark State College	North Canton	Civil Engineers
Ohio	AAS	Power Technologies	Terra State Community College	Fremont	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	Certificate	Power Technology - Diesel	Terra State Community College	Fremont	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	Certificate	Power Technology - Diesel Engines	Terra State Community College	Fremont	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	BS	Urban Studies	The College of Wooster	Wooster	Urban and Regional Planners
Ohio	BS	Civil Engineering	University of Akron Main Campus	Akron	Civil Engineers
Ohio	MS	Civil Engineering	University of Akron Main Campus	Akron	Civil Engineers
Ohio	PhD	Civil Engineering	University of Akron Main Campus	Akron	Civil Engineers
Ohio	BS	Engineering Geology	University of Akron Main Campus	Akron	Civil Engineers
Ohio	AAS	Geographic and Land Information Systems	University of Akron Main Campus	Akron	Urban and Regional Planners
Ohio	MS	Geology - Engineering Geology	University of Akron Main Campus	Akron	Civil Engineers
Ohio	Graduate Certificate	Geotechnical Engineering	University of Akron Main Campus	Akron	Civil Engineers
Ohio	AAS	Land Surveying	University of Akron Main Campus	Akron	Urban and Regional Planners
Ohio	Graduate Certificate	Structural Engineering	University of Akron Main Campus	Akron	Civil Engineers
Ohio	MBA	Supply Chain Management	University of Akron Main Campus	Akron	Logistics Analysts
Ohio	MS	Supply Chain MSM	University of Akron Main Campus	Akron	Logistics Analysts
Ohio	BBA	Supply Chain/Operations Management	University of Akron Main Campus	Akron	Logistics Analysts
Ohio	Certificate	Supply Chain/Operations Management Minor	University of Akron Main Campus	Akron	Logistics Analysts
Ohio	BS	Surveying and Mapping	University of Akron Main Campus	Akron	Urban and Regional Planners
Ohio	Graduate Certificate	Transportation Engineering	University of Akron Main Campus	Akron	Civil Engineers
Ohio	BS	Civil Engineering	University of Cincinnati - Main Campus	Cincinnati	Civil Engineers
Ohio	MCP	Community Planning	University of Cincinnati - Main Campus	Cincinnati	Urban and Regional Planners
Ohio	MS	Construction Management	University of Cincinnati - Main Campus	Cincinnati	Civil Engineers
Ohio	MS	Geotechnical Engineering	University of Cincinnati - Main Campus	Cincinnati	Civil Engineers
Ohio	BBA	Operations Management	University of Cincinnati - Main Campus	Cincinnati	Logistics Analysts
Ohio	MS	Structures Engineering	University of Cincinnati - Main Campus	Cincinnati	Civil Engineers
Ohio	MS	Transportation Engineering	University of Cincinnati - Main Campus	Cincinnati	Civil Engineers
Ohio	PhD	Urban and Regional Planning	University of Cincinnati - Main Campus	Cincinnati	Urban and Regional Planners
Ohio	BUP	Urban Planning	University of Cincinnati - Main Campus	Cincinnati	Urban and Regional Planners
Ohio	BS	Urban Studies	University of Cincinnati - Main Campus	Cincinnati	Urban and Regional Planners
Ohio	BCE	Civil Engineering	University of Dayton	Dayton	Civil Engineers

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Ohio	MS	Civil Engineering	University of Dayton	Dayton	Civil Engineers
Ohio	BS	Operations and Supply Management	University of Dayton	Dayton	Logistics Analysts
Ohio	Diploma	Alternate Fuels Technician - Automotive	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics
Ohio	Diploma	Alternate Fuels Technician - Diesel	University of Northwestern Ohio	Lima	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	Diploma	Automotive - Diesel Technician	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Automotive - Diesel Technology	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	Diploma	Automotive - High Performance Technician	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics
Ohio	Diploma	Automotive - High Performance Technician	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive - High Performance Technology	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics
Ohio	Diploma	Automotive Technician	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics
Ohio	AAS	Automotive Technology	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics
Ohio	BS	Automotive Technology Supervision (2+2)	University of Northwestern Ohio	Lima	Automotive Service Technicians and Mechanics
Ohio	Diploma	Diesel Technician	University of Northwestern Ohio	Lima	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Diesel Technology	University of Northwestern Ohio	Lima	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	BS	Civil Engineering	University of Toledo	Toledo	Civil Engineers
Ohio	MS	Geotechnical Engineering	University of Toledo	Toledo	Civil Engineers
Ohio	PhD	Geotechnical Engineering	University of Toledo	Toledo	Civil Engineers
Ohio	PhD	Manufacturing and Technology Management	University of Toledo	Toledo	Logistics Analysts
Ohio	BBA	Operations Management	University of Toledo	Toledo	Logistics Analysts
Ohio	MS	Structural Engineering	University of Toledo	Toledo	Civil Engineers
Ohio	PhD	Structural Engineering	University of Toledo	Toledo	Civil Engineers
Ohio	BBA	Supply Chain Management	University of Toledo	Toledo	Logistics Analysts
Ohio	MS	Transportation Engineering	University of Toledo	Toledo	Civil Engineers
Ohio	PhD	Transportation Engineering	University of Toledo	Toledo	Civil Engineers
Ohio	BS	Urban Studies	University of Toledo	Toledo	Urban and Regional Planners
Ohio	AAS	Automotive Service	Washington State Community College	Marietta	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	Certificate	Automotive Service	Washington State Community College	Marietta	Automotive Service Technicians and Mechanics / Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	AAS	Diesel Truck Systems	Washington State Community College	Marietta	Bus and Truck Mechanics and Diesel Engine Specialists
Ohio	MS	Logistics & Supply Chain Management	Wright State University - Main Campus	Dayton	Logistics Analysts
Ohio	BS	Supply Chain Management	Wright State University - Main Campus	Dayton	Logistics Analysts
Ohio	BA/BS	Urban Affairs	Wright State University - Main Campus	Dayton	Urban and Regional Planners
Ohio	BS	Civil Engineering	Youngstown State University	Youngstown	Civil Engineers
Ohio	MS	Civil Engineering	Youngstown State University	Youngstown	Civil Engineers
Ohio	BS	Information and Supply Chain Management	Youngstown State University	Youngstown	Logistics Analysts
Wisconsin	Diploma	Automotive Technician	Blackhawk Technical College	Janesville	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Diesel & Heavy Equipment Technician	Blackhawk Technical College	Janesville	Bus and Truck Mechanics and Diesel Engine Specialists

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Wisconsin	Diploma	Automotive Maintenance Technician	Chippewa Valley Technical College	Eau Claire	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Automotive Technician	Chippewa Valley Technical College	Eau Claire	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Diesel/Heavy Equipment Technician (Truck Technician)	Chippewa Valley Technical College	Eau Claire	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Truck Driving	Chippewa Valley Technical College	Eau Claire	Truck Drivers, Heavy and Tractor-Trailer/Truck Drivers, Light or Delivery Services
Wisconsin	Diploma	Automotive Maintenance Technician	Fox Valley Technical College	Appleton	Automotive Service Technicians and Mechanics
Wisconsin	Certificate	CDL Straight Truck	Fox Valley Technical College	Appleton	Truck Drivers, Heavy and Tractor-Trailer/Truck Drivers, Light or Delivery Services
Wisconsin	Diploma	Diesel Construction Equipment Service Technician (FABTECH)	Fox Valley Technical College	Appleton	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Diesel Engine Service Technician (FABTECH)	Fox Valley Technical College	Appleton	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Diesel Equipment Mechanic	Fox Valley Technical College	Appleton	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	AAS	Diesel Equipment Technology	Fox Valley Technical College	Appleton	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Diesel Power Generation & Marine Service Tech (FABTECH)	Fox Valley Technical College	Appleton	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Truck Driving	Fox Valley Technical College	Appleton	Truck Drivers, Heavy and Tractor-Trailer/Truck Drivers, Light or Delivery Services
Wisconsin	Certificate	Truck Driving Refresher	Fox Valley Technical College	Appleton	Truck Drivers, Heavy and Tractor-Trailer/Truck Drivers, Light or Delivery Services
Wisconsin	AAS	Aeronautics-Pilot Training	Gateway Technical College	Kenosha	Aviation Pilot
Wisconsin	AAS	Technical Studies-Journeyworker	Gateway Technical College	Kenosha	Operating Engineers
Wisconsin	AAS	Architectural-Structural Engineering Technician	Gateway Technical College	Kenosha	Civil Engineering Technician
Wisconsin	AAS	Geospatial Surveying Technician	Gateway Technical College	Kenosha	Geospatial Surveying Technician
Wisconsin	AAS	Civil Engineering Technology - Fresh Water Resources	Gateway Technical College	Kenosha	Civil Engineering Technician
Wisconsin	AAS	Civil Engineering Technology - Highway Technology	Gateway Technical College	Kenosha	Civil Engineering Technician
Wisconsin	Diploma	Diesel Equipment Mechanic	Gateway Technical College	Kenosha	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	AAS	Diesel Equipment Technology	Gateway Technical College	Kenosha	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Automotive Maintenance Technician	Gateway Technical College	Kenosha	Automotive Service Technicians and Mechanics
Wisconsin	AAS	Automotive Technology	Gateway Technical College	Kenosha	Automotive Service Technicians and Mechanics
Wisconsin	Certificate	Logistics & Distribution	Lakeshore Technical College	Cleveland	Logistics Analysts
Wisconsin	Diploma	Supply Chain Assistant	Lakeshore Technical College	Cleveland	Logistics Analysts
Wisconsin	AAS	Supply Chain Management	Lakeshore Technical College	Cleveland	Logistics Analysts
Wisconsin	Diploma	Automotive Maintenance Technician	Lakeshore Technical College	Cleveland	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Diesel & Heavy Equipment Technician	Madison Area Technical College	Madison	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	AAS	Diesel Equipment Technology	Madison Area Technical College	Madison	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	BS	Operations and Supply Chain Management	Marian University	Fond Du Lac	Logistics Analysts
Wisconsin	BS	Civil, Construction and Environmental Engineering	Marquette University	Milwaukee	Civil Engineers
Wisconsin	BS/MS	Civil, Construction and Environmental Engineering	Marquette University	Milwaukee	Civil Engineers
Wisconsin	MS	Civil, Construction and Environmental Engineering	Marquette University	Milwaukee	Civil Engineers
Wisconsin	PhD	Civil, Construction and Environmental Engineering	Marquette University	Milwaukee	Civil Engineers
Wisconsin	BS	Supply Chain Management	Marquette University	Milwaukee	Logistics Analysts
Wisconsin	AAS	Civil Engineering Technology-Highway Technician	Mid-State Technical College	Wisconsin Rapids	Civil Engineers

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Wisconsin	Diploma	Diesel and Heavy Equipment Technicain	Mid-State Technical College	Wisconsin Rapids	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Diesel and Powertrain Servicing	Milwaukee Area Technical College	Milwaukee	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Truck Driving	Milwaukee Area Technical College	Milwaukee	Truck Drivers, Heavy and Tractor-Trailer/Truck Drivers, Light or Delivery Services
Wisconsin	BS	Civil Engineering	Milwaukee School of Engineering	Milwaukee	Civil Engineers
Wisconsin	MS	Civil Engineering	Milwaukee School of Engineering	Milwaukee	Civil Engineers
Wisconsin	Diploma	Automotive Technician	Moraine Park Technical College	Fond Du Lac	Automotive Service Technicians and Mechanics
Wisconsin	AAS	Automotive Technology	Moraine Park Technical College	Fond Du Lac	Automotive Service Technicians and Mechanics
Wisconsin	AAS	Civil Engineering Technician - Structural	Moraine Park Technical College	Fond Du Lac	Civil Engineers
Wisconsin	AAS	Automotive Technology	Nicolet Area Technical College	Rhineland	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Automotive Maintenance and Light Repair Technician	Northcentral Technical College	Wausau	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Automotive Technician	Northcentral Technical College	Wausau	Automotive Service Technicians and Mechanics
Wisconsin	AAS	Automotive Technology	Northcentral Technical College	Wausau	Automotive Service Technicians and Mechanics
Wisconsin	Certificate	Commercial Driver License	Northcentral Technical College	Wausau	Truck Drivers, Heavy and Tractor-Trailer/Truck Drivers, Light or Delivery Services
Wisconsin	Certificate	Construction Technologies	Northcentral Technical College	Wausau	Construction Laborers
Wisconsin	Diploma	Criminal Justice - Law Enforcement 720 Academy	Northcentral Technical College	Wausau	Transit and Railroad Police
Wisconsin	Diploma	Diesel Equipment Mechanic	Northcentral Technical College	Wausau	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	AAS	Diesel Technology	Northcentral Technical College	Wausau	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Certificate	Logistics	Northcentral Technical College	Wausau	Logistics Analysts
Wisconsin	Certificate	Operations Management	Northcentral Technical College	Wausau	Logistics Analysts
Wisconsin	Certificate	Supply Chain Management	Northcentral Technical College	Wausau	Logistics Analysts
Wisconsin	Diploma	Diesel and Heavy Equipment Technician	Northeast Wisconsin Technical College	Green Bay	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	AAS	Diesel Equipment Technology	Northeast Wisconsin Technical College	Green Bay	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	AAS	Supply Chain Management	Northeast Wisconsin Technical College	Green Bay	Logistics Analysts
Wisconsin	Diploma	Automotive Technician	Southwest Wisconsin Technical College	Fennimore	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Supply Chain Assistant	Southwest Wisconsin Technical College	Fennimore	Logistics Analysts
Wisconsin	AAS	Supply Chain Management	Southwest Wisconsin Technical College	Fennimore	Logistics Analysts
Wisconsin	BA	Urban & Regional Planning	University of Wisconsin - Green Bay	Green Bay	Urban and Regional Planners
Wisconsin	BS	Civil and Environmental Engineering	University of Wisconsin - Madison	Madison	Civil Engineers
Wisconsin	MS	Civil and Environmental Engineering	University of Wisconsin - Madison	Madison	Civil Engineers
Wisconsin	PhD	Civil and Environmental Engineering	University of Wisconsin - Madison	Madison	Civil Engineers
Wisconsin	BBA	Operations and Technology Management	University of Wisconsin - Madison	Madison	Logistics Analysts
Wisconsin	MBA	Operations and Technology Management	University of Wisconsin - Madison	Madison	Logistics Analysts
Wisconsin	Certificate	Transportation Management and Policy	University of Wisconsin - Madison	Madison	Urban and Regional Planners
Wisconsin	MS	Urban and Regional Planning	University of Wisconsin - Madison	Madison	Urban and Regional Planners
Wisconsin	PhD	Urban and Regional Planning	University of Wisconsin - Madison	Madison	Urban and Regional Planners
Wisconsin	BS	Civil Engineering	University of Wisconsin - Milwaukee	Milwaukee	Civil Engineers
Wisconsin	MS	Civil Engineering	University of Wisconsin - Milwaukee	Milwaukee	Civil Engineers
Wisconsin	PhD	Civil Engineering	University of Wisconsin - Milwaukee	Milwaukee	Civil Engineers

## Educational Resources in Region V by State

State	Award	Certification Name	Organization/Educational Institution	City	Occupation
Wisconsin	BBA	Supply Chain and Operations Management	University of Wisconsin - Milwaukee	Milwaukee	Logistics Analysts
Wisconsin	MS	Transportation Engineering and Urban Planning	University of Wisconsin - Milwaukee	Milwaukee	Urban and Regional Planners
Wisconsin	Certificate	Undergraduate Certificate in Urban Planning	University of Wisconsin - Milwaukee	Milwaukee	Urban and Regional Planners
Wisconsin	MUP	Urban Studies	University of Wisconsin - Milwaukee	Milwaukee	Urban and Regional Planners
Wisconsin	BS	Urban Studies	University of Wisconsin - Milwaukee	Milwaukee	Urban and Regional Planners
Wisconsin	MS	Urban Studies	University of Wisconsin - Milwaukee	Milwaukee	Urban and Regional Planners
Wisconsin	PhD	Urban Studies	University of Wisconsin - Milwaukee	Milwaukee	Urban and Regional Planners
Wisconsin	Certificate	Urban Studies	University of Wisconsin - Milwaukee	Milwaukee	Urban and Regional Planners
Wisconsin	BS	Supply Chain Management	University of Wisconsin - Oshkosh	Oshkosh	Logistics Analysts
Wisconsin	BA	Urban Planning	University of Wisconsin - Oshkosh	Oshkosh	Urban and Regional Planners
Wisconsin	BS	Civil Engineering	University of Wisconsin - Platteville	Platteville	Civil Engineers
Wisconsin	MS	Operations and Supply Chain Mangement	University of Wisconsin - Stout	Menomonie	Logistics Analysts
Wisconsin	BS	Supply Chain Management	University of Wisconsin - Stout	Menomonie	Logistics Analysts
Wisconsin	BS	Transportation and Logistics Management	University of Wisconsin - Superior	Superior	Logistics Analysts
Wisconsin	BBA	Supply Chain and Operations Management	University of Wisconsin - Whitewater	Whitewater	Logistics Analysts
Wisconsin	Diploma	Truck Driving	Waukesha County Technical College	Pewaukee	Truck Drivers, Heavy and Tractor-Trailer/Truck Drivers, Light or Delivery Services
Wisconsin	Apprenticeship	Concrete Finisher (ABC)	Waukesha County Technical College	Pewaukee	Cement Masons and Concrete Finishers
Wisconsin	Diploma	Automotive Maintenance & Light Repair Technician- Level 1	Western Technical College	La Crosse	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Automotive Service Technician-Level 2	Western Technical College	La Crosse	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Automotive Technician	Western Technical College	La Crosse	Automotive Service Technicians and Mechanics
Wisconsin	Diploma	Diesel and Heavy Equipment Technician	Western Technical College	La Crosse	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Diesel and Heavy Equipment Technician Assistant Embedded	Western Technical College	La Crosse	Bus and Truck Mechanics and Diesel Engine Specialists
Wisconsin	Diploma	Automotive Maintenance Technician	Wisconsin Indianhead Technical College	Shell Lake	Automotive Service Technicians and Mechanics



## **Appendix C: K-12 Resources**

## K-12 and Major Stakeholder Resources in Region V by State

State Organization is Located	Resource Type	Resource Name	Resource Website	Organization	Grade and Gender Focus	Occupation	Open to Residents of These States
Illinois	Competition	Future City (Illinois - Chicago)	<a href="http://futurecity.org/illinois-chicago">http://futurecity.org/illinois-chicago</a>	Future City	Grades 6-8	All Occupations	Illinois
Illinois	Competition	Civil Engineering Essay Contest	<a href="http://www.diversity.dot.illinois.gov/civil_engineering_essay_contest.aspx">http://www.diversity.dot.illinois.gov/civil_engineering_essay_contest.aspx</a>	Illinois Department of Transportation	Grades 5-7	Civil Engineer	Illinois
Illinois	Competition	Bridge Building Contest - Chicago Regional Bridge Competition	<a href="http://bridgecontest.phys.iit.edu/public/regions/showregion.php?area=9&amp;zone=903">http://bridgecontest.phys.iit.edu/public/regions/showregion.php?area=9&amp;zone=903</a>	Illinois Institute of Technology	Grades 9-12	Structural Engineer	Illinois
Illinois	Competition	Real World Design Challenge (Illinois)	<a href="http://www.realworlddesignchallenge.org/index.php">http://www.realworlddesignchallenge.org/index.php</a>	Real World Design Challenge	Grades 9-12	All Engineering Occupations	Illinois
Illinois	Competition	Academic Challenge	<a href="https://wyse.engineering.illinois.edu/academic-challenge/">https://wyse.engineering.illinois.edu/academic-challenge/</a>	University of Illinois - Urbana-Champaign	Grades 9-12	All STEM Occupations	Missouri, Illinois
Illinois	Event	PREP/STEM Saturday Academy	<a href="http://www.csu.edu/cas/chemistryphysicsengineering/engineeringstudies/prep.htm">http://www.csu.edu/cas/chemistryphysicsengineering/engineeringstudies/prep.htm</a>	Chicago State University	Grades 6-12	All Engineering Occupations	Illinois
Illinois	Event	Illinois DOT Career Day ((Chicago)	<a href="http://www.idot.illinois.gov/about-idot/stay-connected/events/career-day">http://www.idot.illinois.gov/about-idot/stay-connected/events/career-day</a>	Illinois Department of Transportation	Grades 5-12	Civil Engineer, Engineering Technology Technician, Safety Engineer, Surveyor, Construction Laborer	Illinois
Illinois	Event	Illinois DOT Career Day (Granite City)	<a href="http://www.idot.illinois.gov/about-idot/stay-connected/events/career-day">http://www.idot.illinois.gov/about-idot/stay-connected/events/career-day</a>	Illinois Department of Transportation	Grades 5-12	Civil Engineer, Engineering Technology Technician, Safety Engineer, Surveyor, Construction Laborer	Illinois
Illinois	Event	Illinois DOT Career Day (Springfield)	<a href="http://www.idot.illinois.gov/about-idot/stay-connected/events/career-day">http://www.idot.illinois.gov/about-idot/stay-connected/events/career-day</a>	Illinois Department of Transportation	Grades 5-12	Civil Engineer, Engineering Technology Technician, Safety Engineer, Surveyor, Construction Laborer	Illinois

## K-12 and Major Stakeholder Resources in Region V by State

State Organization is Located	Resource Type	Resource Name	Resource Website	Organization	Grade and Gender Focus	Occupation	Open to Residents of These States
Illinois	Event	Engineering Day	<a href="http://engineering.siu.edu/about/outreach/engineering-day.html">http://engineering.siu.edu/about/outreach/engineering-day.html</a>	Southern Illinois University	Grades 9-12, Community College Students	All Engineering Occupations	Illinois
Illinois	Event	SIU United Airlines Aviation Career Days	<a href="http://aviation.siu.edu/management/community/career-days.php">http://aviation.siu.edu/management/community/career-days.php</a>	Southern Illinois University	Ages 14-20	All Aviation Occupations	Illinois
Illinois	Job Shadow	Aviation Job Shadowing	<a href="http://aviation.siu.edu/management/community/job-shadowing.php">http://aviation.siu.edu/management/community/job-shadowing.php</a>	Southern Illinois University	College Freshmen	All Aviation Occupations	Illinois
Illinois	Mentoring	Engineering Explorer Post Program	<a href="https://idot.illinois.gov/about-idot/employment-opportunities/student-opportunities/index">https://idot.illinois.gov/about-idot/employment-opportunities/student-opportunities/index</a>	Illinois Department of Transportation	Grade 12	Civil Engineer	Illinois
Illinois	Pre-College Program	Engineering Learning Skills	<a href="http://engineering.siu.edu/about/outreach/summer-bridge-program.html">http://engineering.siu.edu/about/outreach/summer-bridge-program.html</a>	Southern Illinois University	Grades 6-12	All Engineering Occupations	Illinois
Illinois	Summer Program	4G STEM Camp	<a href="http://web.extension.illinois.edu/fmpt/4gstemicamp/">http://web.extension.illinois.edu/fmpt/4gstemicamp/</a>	University of Illinois - Extension	Grades 7-9 (Rising)	All Engineering Occupations	All states
Illinois	Summer Program	Prematriculation Summer Institute (PSI)	<a href="http://www.csu.edu/cas/chemistryphysicsengineering/engineeringstudies/psi.htm">http://www.csu.edu/cas/chemistryphysicsengineering/engineeringstudies/psi.htm</a>	Chicago State University	Grades 10-12 (Rising)	All Engineering Occupations	All states
Illinois	Summer Program	Summer Pre-Freshman Program in Engineering and Science	<a href="http://www.csu.edu/cas/chemistryphysicsengineering/engineeringstudies/prep.htm">http://www.csu.edu/cas/chemistryphysicsengineering/engineeringstudies/prep.htm</a>	Chicago State University	Grades 7-12	All Engineering Occupations	Illinois
Illinois	Summer Program	Exploring STEM through Engineering	<a href="http://www.niu.edu/stem/programs/camps/exploring-stem.shtml">http://www.niu.edu/stem/programs/camps/exploring-stem.shtml</a>	Northern Illinois University	Grades 7-12	All Engineering Occupations	All states
Illinois	Summer Program	STEM Career Explorations: Engineering	<a href="http://www.niu.edu/stem/programs/camps/career-explorations.shtml">http://www.niu.edu/stem/programs/camps/career-explorations.shtml</a>	Northern Illinois University	Grades 7-12	All Engineering Occupations	All states
Illinois	Summer Program	Aviation Career Education (ACE) Academy-Chicago	<a href="https://obap.memberclicks.net/project-aerospace">https://obap.memberclicks.net/project-aerospace</a>	Organization of Black Aerospace Professionals	Grades 6-8 (Rising)	All Aviation Occupations	Illinois

## K-12 and Major Stakeholder Resources in Region V by State

State Organization is Located	Resource Type	Resource Name	Resource Website	Organization	Grade and Gender Focus	Occupation	Open to Residents of These States
Illinois	Summer Program	Aviation Career Education (ACE) Academy-Cleveland	<a href="https://obap.memberclicks.net/ace-academy">https://obap.memberclicks.net/ace-academy</a>	Organization of Black Aerospace Professionals	Grades 9-11	All Aviation Occupations	Ohio
Illinois	Summer Program	Aviation Career Education (ACE) Academy-Columbus	<a href="https://obap.memberclicks.net/ace-academy">https://obap.memberclicks.net/ace-academy</a>	Organization of Black Aerospace Professionals	Grades 9-12	All Aviation Occupations	Ohio
Illinois	Summer Program	Aviation Career Education (ACE) Academy-Detroit	<a href="https://obap.memberclicks.net/ace-academy">https://obap.memberclicks.net/ace-academy</a>	Organization of Black Aerospace Professionals	Grades 9-12	All Aviation Occupations	Michigan
Illinois	Summer Program	Aviation Career Education (ACE) Academy-Twin Cities	<a href="https://obap.memberclicks.net/ace-academy">https://obap.memberclicks.net/ace-academy</a>	Organization of Black Aerospace Professionals	Grades 9-10 (Rising)	All Aviation Occupations	Minnesota
Illinois	Summer Program	Girls' Adventures in Mathematics, Engineering, and Science (GAMES)	<a href="http://wie.engineering.illinois.edu/k-12-programs-resources/gameswyse-camp/">http://wie.engineering.illinois.edu/k-12-programs-resources/gameswyse-camp/</a>	University of Illinois - Urbana-Champaign	Grades 11-12 (Rising)	All Engineering Occupations	All states
Illinois	Summer Program	Girls in Engineering & Science Day Camp	<a href="http://engineering.siu.edu/about/outreach/summer-camps.html">http://engineering.siu.edu/about/outreach/summer-camps.html</a>	Southern Illinois University	Grades 9-12	All Engineering Occupations	Illinois
Illinois	Summer Program	Nasa Wings	<a href="http://aviation.siu.edu/management/community/nasa-wings.php">http://aviation.siu.edu/management/community/nasa-wings.php</a>	Southern Illinois University	Grades 7-12, Parents, Educators, Employers	All Aviation Occupations	Illinois
Illinois	Summer Program	Summer Wings	<a href="http://aviation.siu.edu/management/community/summer-wings.php">http://aviation.siu.edu/management/community/summer-wings.php</a>	Southern Illinois University	Grades 11-12	All Aviation Occupations	Illinois
Illinois	Summer Program	Summer Youth S.T.E.M Camp	<a href="http://chance.uic.edu/early-outreach-initiatives.html">http://chance.uic.edu/early-outreach-initiatives.html</a>	University of Illinois - Chicago	Grades 9-12	All Engineering Occupations	Illinois
Illinois	Summer Program	Discover Engineering	<a href="https://wyse.engineering.illinois.edu/summer-camps/">https://wyse.engineering.illinois.edu/summer-camps/</a>	University of Illinois - Urbana-Champaign	Grades 2-3	All Engineering Occupations	All states
Illinois	Summer Program	Exploring Your Options	<a href="https://wyse.engineering.illinois.edu/summer-camps/">https://wyse.engineering.illinois.edu/summer-camps/</a>	University of Illinois - Urbana-Champaign	Grades 9-12	All Engineering Occupations	All states
Illinois	Summer Program	National Summer Transportation Institute	<a href="http://www.chance.uic.edu">www.chance.uic.edu</a>	University of Illinois at Chicago	Grades 9-12	Civil Engineer	Illinois
Illinois	Website	Make Yourself	<a href="http://www.makeyourselfgo.org/">http://www.makeyourselfgo.org/</a>	Greater Peoria Economic Development Council for Central Illinois	Grades K-16	All Occupations	Illinois

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Illinois	Experiential Activity	Illinois DOT Engineering Academy	<a href="http://www.diversity.dot.illinois.gov/student_outreach_opportunities_engineering_academies.aspx">http://www.diversity.dot.illinois.gov/student_outreach_opportunities_engineering_academies.aspx</a>	Illinois Department of Transportation	Grades 11-12 (Preferred)	Civil Engineer	Illinois
Illinois	Experiential Activity	Let's Wing It!	<a href="http://aviation.siu.edu/management/community/lets-wing-it.php">http://aviation.siu.edu/management/community/lets-wing-it.php</a>	Southern Illinois University	Grades 9-12 and Parents	All Aviation Occupations	Illinois
Indiana	Apprenticeship	Construction Prep Academy	<a href="http://www.abcindianakentucky.org/education/abc-construction-prep-academy/">http://www.abcindianakentucky.org/education/abc-construction-prep-academy/</a>	Associated Builders and Contractors, Inc.	Grades 9-12	Construction Laborer, Operating Engineer	Indiana
Indiana	Competition	Future City (Indiana)	<a href="http://www.etc.ipfw.edu/fcc/">http://www.etc.ipfw.edu/fcc/</a>	Future City	Grade 12 (Rising)	All Occupations	Indiana
Indiana	Competition	Bridge Building Contest - Indiana Blazer Bridge Building 5	<a href="http://bridgecontest.phys.iit.edu/public/regions/showregion.php?area=9&amp;zone=903">http://bridgecontest.phys.iit.edu/public/regions/showregion.php?area=9&amp;zone=903</a>	Illinois Institute of Technology	Grades 10-11 (Rising)	Structural Engineer	Indiana
Indiana	Event	Engineering FYI: For Your Imagination	<a href="https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Engineering-FYI-For-Your-Imagination.html">https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Engineering-FYI-For-Your-Imagination.html</a>	Purdue University	Grade 12 (Rising)	All Engineering Occupations	Indiana
Indiana	Event	Konstruktion Kraze	<a href="https://www.facebook.com/WiegandConstruction/">https://www.facebook.com/WiegandConstruction/</a>	Boys & Girls Club Of Fort Wayne	Grades 7-9 (Rising)	Construction Laborer, Operating Engineer, Construction Engineer	Indiana
Indiana	Event	Imagination, Innovation, Discovery, and Design (I2D2)	<a href="https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/I2D2.html">https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/I2D2.html</a>	Purdue University	Grades 8-9	All Engineering Occupations	Indiana
Indiana	Event	Innovation to Reality (I2R)	<a href="https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/I2R.html">https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/I2R.html</a>	Purdue University	Grades 6-8	All Engineering Occupations	Indiana
Indiana	Event	Introduce a Girl to Engineering Day	<a href="https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Introduce-A-Girl-To-Engineering-Day.html">https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Introduce-A-Girl-To-Engineering-Day.html</a>	Purdue University	Grades 9-12	All Engineering Occupations	Indiana

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State Organization is Located	Resource Type	Resource Name	Resource Website	Organization	Grade and Gender Focus	Occupation	Open to Residents of These States
Indiana	Event	High School Construction Careers Symposium	<a href="http://indianaconstructionfoundation.org/event/high-school-construction-careers-symposium/?event_date=2016-12-13">http://indianaconstructionfoundation.org/event/high-school-construction-careers-symposium/?event_date=2016-12-13</a>	Indiana Construction Roundtable Foundation	Grades 9-12	Construction Laborer, Operating Engineer, Construction Engineer	Indiana
Indiana	Event	Mother and Daughter Engineering Event	<a href="https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Mother-and-Daughter-Engineering-Event.html">https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Mother-and-Daughter-Engineering-Event.html</a>	Purdue University	Grade 12 (Rising)	All Engineering Occupations	Indiana
Indiana	Initiative	Dream It. Do It. Indiana	<a href="http://www.conexusindiana.com/dream-it-do-it-indiana">http://www.conexusindiana.com/dream-it-do-it-indiana</a>	Conexus Indiana	Grade 12 (Rising)	Logistician	Indiana
Indiana	Initiative	Access Engineering	<a href="https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Access-Engineering.html">https://www.purdue.edu/wiep/FutureStudents/OutreachK-10/Access-Engineering.html</a>	Purdue University	Grades 9-12	All Engineering Occupations	Indiana
Indiana	Internship	Conexus Interns	<a href="http://www.conexusindiana.com/conexus-interns-program">http://www.conexusindiana.com/conexus-interns-program</a>	Conexus Indiana	Grades 9-12 and College Students	Logistician	Indiana
Indiana	Summer Program	MITE Academic Boot Camp	<a href="http://www.purdue.edu/mep/MEP%20Programs/Pre-College%20Outreach/MITE%20Academic%20Boot%20Camp.html">http://www.purdue.edu/mep/MEP%20Programs/Pre-College%20Outreach/MITE%20Academic%20Boot%20Camp.html</a>	Purdue University	Grades 6-8	All Engineering Occupations	All states
Indiana	Summer Program	PREFACE	<a href="http://www.purdue.edu/mep/MEP%20Programs/Pre-College%20Outreach/PREFACE.html">http://www.purdue.edu/mep/MEP%20Programs/Pre-College%20Outreach/PREFACE.html</a>	Purdue University	Grades 9-12	All Engineering Occupations	All states
Indiana	Summer Program	Seminar for Top Engineering Prospects (STEP)	<a href="https://engineering.purdue.edu/Engr/InfoFor/Honors/STEP">https://engineering.purdue.edu/Engr/InfoFor/Honors/STEP</a>	Purdue University	High school teachers	All Engineering Occupations	All states
Indiana	Summer Program	Summer Engineering Workshops	<a href="http://www.purdue.edu/mep/MEP%20Programs/Pre-College%20Outreach/Summer%20Engineering%20Workshops.html">http://www.purdue.edu/mep/MEP%20Programs/Pre-College%20Outreach/Summer%20Engineering%20Workshops.html</a>	Purdue University	Grades K-5 Teachers	All Engineering Occupations	All states

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Indiana	Summer Program	Turned On To Technology And Leadership (TOTAL)	<a href="https://polytechnic.purdue.edu/camps/total">https://polytechnic.purdue.edu/camps/total</a>	Purdue University	High school teachers	Construction Engineer, Engineering Technician, Aviation Technician	Indiana
Indiana	Summer Program	Engineering Summer Program	<a href="http://academics.pnw.edu/mechanical-civil-engineering/engineering-summer-program/">http://academics.pnw.edu/mechanical-civil-engineering/engineering-summer-program/</a>	Purdue University Northwest	Grades 9-12	All Engineering Occupations	Indiana
Indiana	Summer Program	OPTIONS for High School Girls	<a href="https://www.evansville.edu/options/hsGirls.cfm">https://www.evansville.edu/options/hsGirls.cfm</a>	University of Evansville	Grades 9-10	All Engineering Occupations	All states
Indiana	Summer Program	OPTIONS for Middle School Boys	<a href="https://www.evansville.edu/options/msBoys.cfm">https://www.evansville.edu/options/msBoys.cfm</a>	University of Evansville	Grades 7-8	All Engineering Occupations	All states
Indiana	Summer Program	OPTIONS for Middle School Girls	<a href="https://www.evansville.edu/options/msGirls.cfm">https://www.evansville.edu/options/msGirls.cfm</a>	University of Evansville	Grades K-12	All Engineering Occupations	All states
Indiana	Summer Program	Engineering Summer Program	<a href="http://academics.pnw.edu/mechanical-civil-engineering/engineering-summer-program/">http://academics.pnw.edu/mechanical-civil-engineering/engineering-summer-program/</a>	Purdue University Northwest	Grades 9-10	All Engineering Occupations	Indiana
Indiana	Summer Program	Engineering Technology and Construction Science Summer High School Workshop	<a href="http://academics.pnw.edu/engineering-technology/high-school-summer-workshop/">http://academics.pnw.edu/engineering-technology/high-school-summer-workshop/</a>	Purdue University Northwest	Grades 9-12 (Under-Represented Populations)	Construction Engineer	Indiana
Indiana	Summer Program	Operation Catapult	<a href="http://www.rose-hulman.edu/admissions-financial-aid/early-planning/operation-catapult.aspx">http://www.rose-hulman.edu/admissions-financial-aid/early-planning/operation-catapult.aspx</a>	Rose-Hulman Institute of Technology	Grades 9-11 (Rising)	All Engineering Occupations	All states
Indiana	Summer Program	Technology Expanding All Minds (TEAM)	<a href="https://polytechnic.purdue.edu/camps/team">https://polytechnic.purdue.edu/camps/team</a>	Purdue University	Grades 9-10	Construction Engineer, Engineering Technician, Aviation Technician	All states
Indiana	Summer Program	Introduction to Engineering	<a href="https://www3.nd.edu/~iep/">https://www3.nd.edu/~iep/</a>	University of Notre Dame	Grade 11	All Engineering Occupations	All states
Indiana	Website	DreamItDoltIndiana.com	<a href="http://dreamitdoltindiana.com">http://dreamitdoltindiana.com</a>	Conexus Indiana	Grades 7-8	Logistician	Indiana

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Indiana	Website	Indiana INTERN.net	<a href="https://indianaintern.net">https://indianaintern.net</a>	Indiana Chamber of Commerce	Grades 9-12	All Transportation Occupations	Indiana
Michigan	Competition	Real World Design Challenge (Michigan)	<a href="http://www.realworlddesignchallenge.org/MI.php">http://www.realworlddesignchallenge.org/MI.php</a>	Real World Design Challenge	Grades 7-9 (Rising)	All Engineering Occupations	Michigan
Michigan	Event	Michigan Construction Career Days	<a href="http://www.michiganccd.com">http://www.michiganccd.com</a>	Michigan Construction Career Days		Construction Laborer, Operating Engineer, Construction Engineer	Michigan
Michigan	Event	Build It Bigger, Better, Stronger	<a href="https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/">https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/</a>	University of Michigan	Grades 6-12	Civil Engineer	Michigan
Michigan	Event	Exploring Engineering	<a href="https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/">https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/</a>	University of Michigan	Grades 9-12	All Engineering Occupations	Michigan
Michigan	Event	K-12 School Visits	<a href="http://www.swe.engin.umich.edu/visits">http://www.swe.engin.umich.edu/visits</a>	University of Michigan	Grades 9-12	All Engineering Occupations	Michigan
Michigan	Event	Pirates of Michigan	<a href="https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/">https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/</a>	University of Michigan	Grades 10-12	Marine Engineer	Michigan
Michigan	Event	Water: Treat it Right!	<a href="https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/">https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/</a>	University of Michigan	Grade 12 (Rising)	Civil Engineer	Michigan
Michigan	Event	Wonders of Flight	<a href="https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/">https://cedo.engin.umich.edu/diversity/programs/k12/dapcep/</a>	University of Michigan	Incoming Engineering Freshman	All Aviation Occupations	Michigan
Michigan	Mentoring	Michigan DOT Youth Development and Mentoring Program	<a href="http://www.michigan.gov/mdot/0,4616,7-151-9623_38029_66959---,00.html">http://www.michigan.gov/mdot/0,4616,7-151-9623_38029_66959---,00.html</a>	Michigan Department of Transportation (MDOT)	Grades 9-11	Civil Engineer, Transportation Planner, Skilled Trades	Michigan
Michigan	Summer Program	National Summer Transportation Institute	<a href="http://www.ferris.edu/HTMLS/colleges/technolo/built-env/icet/aggregate-classes/nsti.htm">http://www.ferris.edu/HTMLS/colleges/technolo/built-env/icet/aggregate-classes/nsti.htm</a>	Ferris State University	Grades 6-8	Civil Engineer	Michigan
Michigan	Experiential Activity	Michigan TRAC program	<a href="http://www.michigan.gov/mdot/0,1607,7-151-9623_38029_38059_41397---,00.html">http://www.michigan.gov/mdot/0,1607,7-151-9623_38029_38059_41397---,00.html</a>	Michigan Department of Transportation (MDOT)	Grades K-12	Civil Engineer	Michigan



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Michigan	Summer Program	National Summer Transportation Institute	<a href="http://www.syp.mtu.edu/courses-scholarship.php#National_Summer_Transportation_Institute">http://www.syp.mtu.edu/courses-scholarship.php#National_Summer_Transportation_Institute</a>	Michigan Technological University	Grades 1-3	Civil Engineer	Michigan
Michigan	Summer Program	Michigan Introduction to Technology & Engineering	<a href="http://cedo.engin.umich.edu/diversity/programs/k12/sea/">http://cedo.engin.umich.edu/diversity/programs/k12/sea/</a>	University of Michigan	Grade 4-8	All Engineering Occupations	All states
Michigan	Summer Program	Summer College Engineering Exposure Program	<a href="http://cedo.engin.umich.edu/diversity/programs/k12/sea/">http://cedo.engin.umich.edu/diversity/programs/k12/sea/</a>	University of Michigan	Grades 5-12	All Engineering Occupations	All states
Michigan	Summer Program	Summer Enrichment Program	<a href="http://cedo.engin.umich.edu/diversity/programs/k12/sea/">http://cedo.engin.umich.edu/diversity/programs/k12/sea/</a>	University of Michigan	Grades K-12, Teachers, Parents	All Engineering Occupations	All states
Minnesota	Competition	Real World Design Challenge (Minnesota)	<a href="http://www.realworlddesignchallenge.org/MN.php">http://www.realworlddesignchallenge.org/MN.php</a>	Real World Design Challenge	Grades 7-9 (Rising)	All Engineering Occupations	Minnesota
Minnesota	Event	Engineering Week Presentations	<a href="http://www.acecmn.org/pages/school-presentations">http://www.acecmn.org/pages/school-presentations</a>	American Council of Engineering Companies (ACEC)	Grades 6-8	Civil Engineer	Minnesota
Minnesota	Event	Construct Tomorrow	<a href="http://www.doli.state.mn.us/APPR/construct_tomorrow.asp">http://www.doli.state.mn.us/APPR/construct_tomorrow.asp</a>	Minnesota Department of Labor & Industry	Grades 9-11	Construction Laborer, Operating Engineer, Construction Engineer	Minnesota
Minnesota	Game	Distraction Dodger	<a href="http://www.its.umn.edu/Education/k12outreach/">http://www.its.umn.edu/Education/k12outreach/</a>	University of Minnesota	Grades 9-11	All Occupations	All states
Minnesota	Game	Gridlock Buster	<a href="http://www.its.umn.edu/GridlockBuster/">http://www.its.umn.edu/GridlockBuster/</a>	University of Minnesota	Grade 7 (Rising)	Traffic Engineer	All states
Minnesota	Internship	Phoenix Internship Program	<a href="https://www.dot.state.mn.us/jobs/phoenix.html">https://www.dot.state.mn.us/jobs/phoenix.html</a>	Minnesota Department of Transportation (MnDOT)	Grades 10-12	Civil Engineer	Minnesota
Minnesota	Mentoring	Engineering Explorer Post Program - MN	<a href="http://www.acecmn.org/pages/EngineeringExplorerPost">http://www.acecmn.org/pages/EngineeringExplorerPost</a>	American Council of Engineering Companies (ACEC)	Grades 11-12 (Rising)	Civil Engineer, Surveyor	Minnesota

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Minnesota	Summer Program	National Summer Transportation Institute	<a href="http://www.cts.umn.edu/education/prospective/summercamp">http://www.cts.umn.edu/education/prospective/summercamp</a>	Center for Transportation Studies, University of Minnesota	Grades K-12	Civil Engineer	Minnesota
Minnesota	Video	Intelligent Transportation Systems: Your Road to the Future	<a href="http://www.its.umn.edu/Education/careers/video/">http://www.its.umn.edu/Education/careers/video/</a>	University of Minnesota	Grades 5-7	All Transportation Occupations	All states
Ohio	STEM Awareness	Camp GEMS	<a href="https://www.onu.edu/engineering/k12_outreach/camp_gems">https://www.onu.edu/engineering/k12_outreach/camp_gems</a>	Ohio Northern University	Grades 9-12	All Engineering Occupations	All states
Ohio	Experiential Activity	Engineering in the Classroom	<a href="https://www.udayton.edu/engineering/k-12-programs/eif_grant/index.php">https://www.udayton.edu/engineering/k-12-programs/eif_grant/index.php</a>	University of Dayton	Grades 6-8	All Engineering Occupations	All states
Ohio	STEM Awareness	Inspiration Day	<a href="http://www.uakron.edu/inspiration/">http://www.uakron.edu/inspiration/</a>	University of Akron	Grades 9-12	All Engineering Occupations	Ohio
Ohio	Academic + Summer Program	Pre-Engineering Program	<a href="http://www.uakron.edu/aap/preengineering/">http://www.uakron.edu/aap/preengineering/</a>	University of Akron	Grades 8-10	Civil Engineer	Ohio
Ohio	Competition	Bridge Building Contest - Ohio	<a href="http://bridgecontest.phys.iit.edu/public/regions/showregion.php?area=9&amp;zone=903">http://bridgecontest.phys.iit.edu/public/regions/showregion.php?area=9&amp;zone=903</a>	Illinois Institute of Technology	Grades 5-7	Structural Engineer	Ohio
Ohio	Competition	Real World Design Challenge (Ohio)	<a href="http://www.realworlddesignchallenge.org/OH.php">http://www.realworlddesignchallenge.org/OH.php</a>	Real World Design Challenge		All Engineering Occupations	Ohio
Ohio	Event	Change the World: WiE are the Future	<a href="https://wie.osu.edu/k-12-programs/high-school-programs">https://wie.osu.edu/k-12-programs/high-school-programs</a>	Ohio State University	Grades 11-12, Girls	All Engineering Occupations	All States
Ohio	Event	Cleveland Engineering Reception	<a href="https://www.udayton.edu/engineering/k-12-programs/cleveland-engineering-reception/index.php">https://www.udayton.edu/engineering/k-12-programs/cleveland-engineering-reception/index.php</a>	University of Dayton		All Engineering Occupations	Ohio
Ohio	Event	Explore Engineering	<a href="https://www.udayton.edu/engineering/k-12-programs/explore_engineering/index.php">https://www.udayton.edu/engineering/k-12-programs/explore_engineering/index.php</a>	University of Dayton		All Engineering Occupations	All states

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Ohio	Event	Inquire! Innovate! Invent! Day	<a href="http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot">http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot</a>	University of Akron	Grades 6-12, Cadette, Senior and Ambassador Girl Scouts, Girls	All Engineering Occupations	Ohio
Ohio	Event	WiE Explore	<a href="https://wie.osu.edu/k-12-programs/wie-explore">https://wie.osu.edu/k-12-programs/wie-explore</a>	Ohio State University	Grade 9-10, Girls	All Engineering Occupations	Ohio
Ohio	Event	Introduce a Girl to Engineering Day - IGED	<a href="https://wie.osu.edu/introduce-girl-engineering-day">https://wie.osu.edu/introduce-girl-engineering-day</a>	Ohio State University	Grades 3-6, Girls	All Engineering Occupations	Ohio
Ohio	Event	Kids' Career Day	<a href="http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot">http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot</a>	University of Akron	Grades 1-6, Girl Scouts, Girls	All Engineering Occupations	Ohio
Ohio	Event	WiE DREAM	<a href="https://wie.osu.edu/wie-dream">https://wie.osu.edu/wie-dream</a>	Ohio State University	Grades 7-8, Girls	All Engineering Occupations	Ohio
Ohio	Event	Women Engineering Program and Minority Engineering Program Overnight Event	<a href="https://www.udayton.edu/engineering/k-12-programs/overnight-experience-minorities-and-females/index.php">https://www.udayton.edu/engineering/k-12-programs/overnight-experience-minorities-and-females/index.php</a>	University of Dayton	Grades 11-12 (Minority), Girls	All Engineering Occupations	All states
Ohio	Event	Women Engineering Program Overnight Event	<a href="https://www.udayton.edu/engineering/k-12-programs/overnight-experience-female/index.php">https://www.udayton.edu/engineering/k-12-programs/overnight-experience-female/index.php</a>	University of Dayton	Grades 11-12, Girls	All Engineering Occupations	Ohio
Ohio	Event	Women in Engineering Visit Day and Donovan Breakfast	<a href="http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot">http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot</a>	University of Akron	Grades 9-12, Seniors or Ambassadors Girl Scouts , Girls	All Engineering Occupations	Ohio
Ohio	Summer Program	Summer Experience in Engineering (See UA!) Summer Camp	<a href="https://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot">https://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot</a>	University of Akron	Grades 9-12 (Rising), Girls	Civil Engineer	All states

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State Organization is Located	Resource Type	Resource Name	Resource Website	Organization	Grade and Gender Focus	Occupation	Open to Residents of These States
Ohio	Summer Program	Engineering Summer Academy	<a href="https://eed.osu.edu/pre-college-engineering-summer-academy-course">https://eed.osu.edu/pre-college-engineering-summer-academy-course</a>	Ohio State University		All Engineering Occupations	Ohio
Ohio	Summer Program	Engineering Summer Experience	<a href="https://ese.osu.edu/">https://ese.osu.edu/</a>	Ohio State University	Grades 9-11, Girls	All Engineering Occupations	All States
Ohio	Summer Program	Men in Engineering and Applied Science Summer Camp	<a href="http://ceas.uc.edu/future_students/Activities/Summer_Camps/men_in_engineeringandappliedsciencesummercamp.html">http://ceas.uc.edu/future_students/Activities/Summer_Camps/men_in_engineeringandappliedsciencesummercamp.html</a>	University of Cincinnati	Grades 10-12 (Rising), Boys	All Engineering Occupations	All states
Ohio	Summer Program	Minority Engineering and Technology Enrichment Camp for Young Men (METEC)	<a href="https://www.udayton.edu/engineering/k-12-programs/metec/index.php">https://www.udayton.edu/engineering/k-12-programs/metec/index.php</a>	University of Dayton	Grade 12 (Minority, Rising), Boys	All Engineering Occupations	All states
Ohio	Summer Program	Multiplying Your Options Summer Day Camp	<a href="http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot">http://www.uakron.edu/engineering/beyond-the-classroom/women-in-engineering/outreach-camps.dot</a>	University of Akron	Grades 7-8 (Rising), Girls	All Engineering Occupations	Ohio
Ohio	Summer Program	Pre-Engineering Program	<a href="https://www.ohio.edu/engineering/academics/outreach/multicultural/pre-engineering.cfm">https://www.ohio.edu/engineering/academics/outreach/multicultural/pre-engineering.cfm</a>	Ohio University		All Engineering Occupations	Illinois
Ohio	Summer Program	Summer Honors Engineering Camp	<a href="https://www.udayton.edu/engineering/k-12-programs/summer_honors_engineering_camp/index.php">https://www.udayton.edu/engineering/k-12-programs/summer_honors_engineering_camp/index.php</a>	University of Dayton		All Engineering Occupations	All states
Ohio	Summer Program	WiE RISE – Respected, Involved, Skilled, Empowered	<a href="https://wie.osu.edu/wie-rise">https://wie.osu.edu/wie-rise</a>	Ohio State University	Grades 11-12, Girls	All Engineering Occupations	All states
Ohio	Summer Program	Women in Engineering and Applied Science Summer Camp	<a href="http://ceas.uc.edu/future_students/Activities/Summer_Camps/women_in_engineeringandappliedsciencesummercamp.html">http://ceas.uc.edu/future_students/Activities/Summer_Camps/women_in_engineeringandappliedsciencesummercamp.html</a>	University of Cincinnati	Grades 9-12 (Rising), Girls	All Engineering Occupations	All states

## K-12 and Major Stakeholder Resources in Region V by State

State Organization is Located	Resource Type	Resource Name	Resource Website	Organization	Grade and Gender Focus	Occupation	Open to Residents of These States
Ohio	Summer Program	Women in Engineering Summer Camp	<a href="https://www.udayton.edu/engineering/k-12-programs/women_in_engineering_summer_camp/index.php">https://www.udayton.edu/engineering/k-12-programs/women_in_engineering_summer_camp/index.php</a>	University of Dayton	Grades 9-11, Girls	All Engineering Occupations	All states
Ohio	Summer Program	Young Women's Summer Institute	<a href="https://www.osc.edu/education/ywsi">https://www.osc.edu/education/ywsi</a>	Ohio SuperComputer Center	Grades 6-7, Girls	All Engineering Occupations	Ohio
Wisconsin	Competition	Future City (Wisconsin - Milwaukee)	<a href="http://futurecity.org/wisconsin">http://futurecity.org/wisconsin</a>	Future City		All Occupations	Wisconsin
Wisconsin	Competition	Wisconsin DOT Aviation Art Contest	<a href="http://wisconsin-dot.gov/Pages/doing-bus/aeronautics/education/default.aspx">http://wisconsin-dot.gov/Pages/doing-bus/aeronautics/education/default.aspx</a>	Wisconsin Department of Transportation (WisDOT)		All Aviation Occupations	Wisconsin
Wisconsin	Event	Family Engineering	<a href="http://www.marquette.edu/engineering/k12-outreach/academies.php">http://www.marquette.edu/engineering/k12-outreach/academies.php</a>	Marquette University		All Engineering Occupations	Wisconsin
Wisconsin	Event	Engineering Expo	<a href="http://engineeringexpo.wisc.edu/">http://engineeringexpo.wisc.edu/</a>	University of Wisconsin - Madison		All Engineering Occupations	Wisconsin
Wisconsin	Event	Heels: GIRLS ONLY! w/Molly	<a href="http://www.marquette.edu/engineering/k12-outreach/academies.php">http://www.marquette.edu/engineering/k12-outreach/academies.php</a>	Marquette University	Grades 6-8, Girls	All Engineering Occupations	Wisconsin
Wisconsin	Event	The Engineering, Mathematics and Science Expo	<a href="http://www.uwplatt.edu/expo">http://www.uwplatt.edu/expo</a>	University of Wisconsin-Platteville		All STEM Occupations	Wisconsin, Iowa, Minnesota
Wisconsin	Event	Women in Engineering Career Day	<a href="http://www.uwplatt.edu/ems-success/career-day">http://www.uwplatt.edu/ems-success/career-day</a>	University of Wisconsin-Platteville	Grades 9-12, Girls	All Engineering Occupations	Wisconsin
Wisconsin	Newspaper	Transportation Today WI	<a href="http://www.transportationtodaywi.com/">http://www.transportationtodaywi.com/</a>	Transportation Today WI		All Transportation Occupations	Wisconsin
Wisconsin	Summer Program	National Summer Transportation Institute	<a href="http://www.menominee.edu/Com_Ser.aspx?id=540">http://www.menominee.edu/Com_Ser.aspx?id=540</a>	College of Menominee Nation		Civil Engineer	Wisconsin
Wisconsin	Summer Program	National Summer Transportation Institute	<a href="http://www.lco.edu/about/extensionfarm/extension">http://www.lco.edu/about/extensionfarm/extension</a>	Lac Courte Oreilles Ojibwa Community College		Civil Engineer	Wisconsin
Wisconsin	Summer Program	Build and Design	<a href="http://www.msOE.edu/admissions/undergraduate/discover-camps/">http://www.msOE.edu/admissions/undergraduate/discover-camps/</a>	Milwaukee School of Engineering		Construction Engineer, Civil Engineer	All states

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State Organization is Located	Resource Type	Resource Name	Resource Website	Organization	Grade and Gender Focus	Occupation	Open to Residents of These States
Wisconsin	Summer Program	Engineering Tomorrow's Careers Camp (ETC)	<a href="https://uwetccamp.wordpress.com/">https://uwetccamp.wordpress.com/</a>	University of Wisconsin-Madison	Grades 10-11, Girls	All Engineering Occupations	All states
Wisconsin	Summer Program	Focus on Architectural Engineering and Construction Management	<a href="http://www.msos.edu/admissions/undergraduate/focus-camps/">http://www.msos.edu/admissions/undergraduate/focus-camps/</a>	Milwaukee School of Engineering		Construction Engineer, Civil Engineer	All states
Wisconsin	Summer Program	Camp Badger	<a href="https://eyo.engr.wisc.edu/">https://eyo.engr.wisc.edu/</a>	University of Wisconsin - Madison		All Engineering Occupations	Wisconsin, Minnesota
Wisconsin	Summer Program	Explore Engineering Summer Program	<a href="http://www.uwplatt.edu/continuing/explore-engineering-summer-program">http://www.uwplatt.edu/continuing/explore-engineering-summer-program</a>	University of Wisconsin - Platteville		All Engineering Occupations	All states
Wisconsin	Summer Program	Engineering Summer Program (ESP)	<a href="https://www.engr.wisc.edu/academics/student-services/diversity-programs/engineering-summer-program/">https://www.engr.wisc.edu/academics/student-services/diversity-programs/engineering-summer-program/</a>	University of Wisconsin-Madison		All Engineering Occupations	All states
Wisconsin	Summer Program	STEPS for Girls (Science, Technology, and Engineering Preview at Stout) summer camp	<a href="http://www.uwstout.edu/steps/index.cfm">http://www.uwstout.edu/steps/index.cfm</a>	University of Wisconsin – Stout	Grades 6-7, Girls	All Occupations	All states
Wisconsin	Website	Wisconsin DOT Aviation Resources	<a href="http://wisconsindot.gov/Pages/doing-bus/aeronautics/education/default.aspx">http://wisconsindot.gov/Pages/doing-bus/aeronautics/education/default.aspx</a>	Wisconsin Department of Transportation (WisDOT)		All Aviation Occupations	All states
Wisconsin	Workshop	Environmental Engineering	<a href="http://www.marquette.edu/engineering/k12-outreach/academies.php">http://www.marquette.edu/engineering/k12-outreach/academies.php</a>	Marquette University		All Engineering Occupations	Wisconsin
Wisconsin	Workshop	Build-A-Bridge Workshop	<a href="http://www.marquette.edu/engineering/k12-outreach/academies.php">http://www.marquette.edu/engineering/k12-outreach/academies.php</a>	Marquette University		Structural Engineer, Civil Engineer	All states
Wisconsin	Workshop	Bridges & Structures	<a href="http://www.marquette.edu/engineering/k12-outreach/academies.php">http://www.marquette.edu/engineering/k12-outreach/academies.php</a>	Marquette University		Structural Engineer, Civil Engineer	All states
Wisconsin	Workshop	Sky's the Limit	<a href="http://www.uwplatt.edu/ems-success/skys-limit">http://www.uwplatt.edu/ems-success/skys-limit</a>	University of Wisconsin-Platteville	Grades 9-12, Girls	All STEM Occupations	Wisconsin