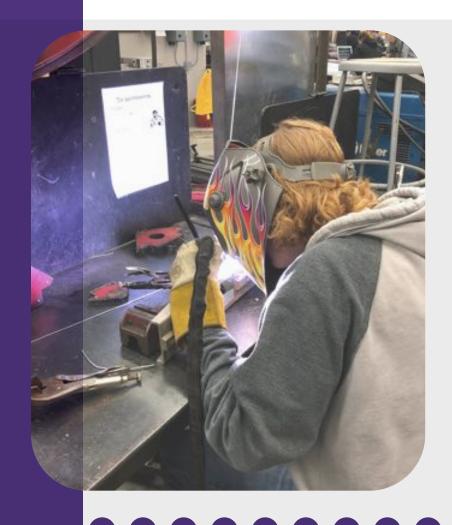


WHY SHOULD YOU ENROLL IN A CAREER AND TECHNICAL **EDUCATIONAL** CLASS?

- 1. Career Exploration
- 2. College Credit
- 3. College Readiness
- 4. Work Based Learning
- 5. Business Partnerships
- 6. State of the Art Technology
- 7. Industry Certification
- 8. Student Organizations
- 9. Academic Integration
- 10. Hands on Learning





A leader in education through engaging and innovative programs and support structures.

What is Career **Technical Education (CTE)?**

Career Technical Education

(CTE) provides students with the academic and technical skills, knowledge and training necessary to succeed in future careers and to become lifelong learners. CTE prepares these learners for the world of work by introducing them to workplace competencies, and makes academic content accessible to students by providing it in a hands-on context. CTE teaches transferable workplace skills in applied learning contexts to provide opportunities to explore high-demand career options, and gives students the technology and skills needed for success in adult life.

TABLE OF CONTENTS

Top 10 Reasons Welcome Letter	•
What is CTE	•
AGRICULTURE, FOOD & NATURAL RESOURCES	PAGE 4-5
ARTS, COMMUNICATIONS & INFORMATION SYSTEMS	PAGE 6-7
BUSINESS MANAGEMENT & ADMINISTRATION	PAGE 8-9
ENGINEERING, MANUFACTURING & TECHNOLOGY	PAGE 10-11
HEALTH SCIENCE & TECHNOLOGY	PAGE 12-13
HUMAN SERVICES	PAGE 14-15

Where to go from here.....

This career guide was created to enhance awareness of Career and Technical (CTE) programs within the New Ulm Public School system. It is meant to be a tool to be used by students and parents to help guide students in a direction in their chosen career path.

Students should talk with their school counselor to create a plan of class work. Teaching staff, community and industry leaders are also excellent resources for career insight.



Agriculture, Food and Natural Resources

Career Pathways:

Animal Sciences Agribusiness Systems Environmental Service Systems Food Products and Processing Systems Natural Resources Systems Plant Systems Power, Structural, and Technical systems

Career Specialty Examples

Agricultural Engineer Animal Scientist Chemist Farm Manager Food Scientist Forester Meteorologist Baker Fish & Game Warden **Grain Merchant** Baker **Meat Cutter**

Veterinary Assistant Geologist Park Naturalist **Pest Control Technician** Quality Control Farm Worker Animal Caretaker/Trainer **Environmental Engineer** Water Treatment Operator Food Processing Worker Tree Cutter and more...

People attracted to careers in this pathway like to observe, learn, analyze, evaluate or solve problems. They may like to work with plants and animals. They like to work independently, analyze data, do research, deal with abstractions, explore a variety of ideas, perform lab experiments, do complex calculations, and/or understand scientific methods and theories. This career path includes programs related to the environment and natural resources. These may include agriculture, earth sciences, environmental sciences,

fisheries management, forestry, horticulture and wildlife management.



AGRICULTURE, FOOD & NATURAL RESOURCES COURSE DESCRIPTIONS

NATURAL RESOURCES: WILDLIFE & FISHERIES

This course focuses on fish and wildlife management, outdoor recreation, advanced hunter training, Ecology, Biomes, Ecosystems, Habitats, Carrying Capacities, and Symbiosis. Large Game Animal, Small Game, Upland Game Bird, Waterfowl, and Fish Identification will also be covered. Boone & Crockett Antler scoring, and hands on projects are a part of this class. Guest speakers, field trips, and projects from all areas of natural resources and resource management will add interest to active learning. This course would begin to prepare students for careers in the DNR, forestry, wildlife management, and fisheries areas.

ANIMAL SCIENCE

Animal Science focuses on the cutting edge science of animal agriculture. Animal Agriculture will be studied through domesticated livestock species and small animals. Meat & Food Science will be will be studied through wholesale and retail food products, Dairy Products and animal by-products Nutrition & Digestion, Animal Reproduction and Embryo Transfer practices will used in society. Students will learn technical and scientific concepts through Animal Anatomy & Physiology, Livestock Evaluation Techniques, Animal Health & Welfare, Animal conclude the semester. This course provides great knowledge of personal animal care and related careers. Students will have the opportunity to earn college credit through the articulation agreement.

ECOLOGY

Ecology is designed for the student who appreciates the outdoors and would like to gain a deeper understanding of environmental concepts and principles. Animals and plants will be identified and various other data will be gathered and evaluated from several local areas. Studies concerning the following will be conducted - forestry principles, water chemistry and its relationship to life and pollution, insect classification and collecting, wildlife management techniques, the classification, structural characteristics, and life cycles of animals in each of the major invertebrate and vertebrate phyla.

To view a complete listing of courses available, please go to New Ulm Public School website at http://www.newulm.k12.mn.us/new-ulm-high-school/ new-ulm-high-school-counseling/



Industry Spotlight: River Creek Nursery rivercreeknursery.com

River Creek Nursery has been in the Horticulture and Landscape Industry for over 20 years. They offer a wide variety of trees, shrubs, evergreens, perennials and annual flowers in season. From design to installation, River Creek Nursery can do it all.



WILDLIFE BIOLOGIST STATS IN MINNESOTA

JOB GROWTH OVER NEXT TEN YEARS 5.9%

NEW JOB OPENINGS OVER NEXT **TEN YEARS**

586

ANNUAL SOUTH CENTRAL MN EARNINGS:

Median

\$78,936

Experienced

\$41.870

Entry-Level

\$59.946



Arts, Communications & Information Systems

Career Clusters:

Arts, Audio/Video Technology, and Communications

Information Technology

Career Pathways:

Audio/Video Tech. & Film Journalism & **Broadcasting Performing Arts Printing Tech. Telecommunications Visual Arts**

Info. Support & Services **Network Systems Programming and Software Development Web and Digital Communications**

People attracted to careers in this pathway like activities in the performing arts, visual arts film and mass communications, which includes certain aspects of journalism and TV/radio broadcasting. Individuals leaning towards this career path enjoy math and science. The creative aspects of this pathway are rapidly merging with technology making it more challenging. Programs in this field may include printing technology, audio/video communications, theater work, graphics production, commercial and technical art, computer information support and services, computer programming and networking and web programming.

Career Specialty Examples

News Reporter Audio/Video Specialist **Landscape Architect** Librarian/Media Spec. Social Worker **Chef/Dinner Cook Editorial Asst.** Web Developer

Fashion Designer Set Technician Photographic Asst. **Artist Floral Designer Childcare Worker Newscaster** and more...



ARTS, COMMUNICATIONS & INFORMATION **YSTEMS COURSE**

JAVA

This course is designed to give the student an opportunity to learn one of the most popular object oriented programming languages used today. The programmer will be able to manipulate these objects to solve a wide variety of problems. The programmer will get experience working with decision structures, data management, and applets. This course is designed for students interested in working with computers and who have an interest in pursuing a technical career in computers.

JOURNALISM

Students in this course will work together to create an on line news publication which will cover various aspects of the New Ulm High School campus. Members of this publication team will maintain a multimedia web page that aims to reflect the digital age we live in through the eyes of the Eagle student body. Photography, videography, technology, research, writing; sports, fine arts, culinary arts, industrial arts; a good story: if any of that (and much more) interests you, consider Journalism.

THEATER PRODUCTIONS

This is an advanced drama class which incorporates the study and involvement of a musical productions with student writing performances, and outside of school rehearsals. As students exit this course once COMPUTER USER SUPPORT SPECIALIST the musical is wrapped up, there are a minimum of required hours to complete outside of the school day. Students will take a more behind-the-scenes look into theater by studying light and sound design, set design, hair/makeup/costume choices, as well as time-period specific elements to incorporate in various plays and musicals. Each student will be expected to contribute his/her interests and talents to the musical being produced during the semester in which the class takes place. This involvement can range from on-stage performances, backstage managing, or design elements in pre-production

To view a complete listing of courses available, please go to New Ulm Public School website at http://www.newulm.k12.mn.us/new-ulm-high-school/ new-ulm-high-school-counseling/



Industry Spotlight: Thriveon www.thriveon.net

Thriveon (pronounced Thriv-E-on) headquartered in New Ulm, Minnesota is a 20 person family owned IT Services Company with a different approach to Managed Services. Ranked in top 250 managed IT service providers world wide and top 100 places to work in MN. We deliver IT support, proactive management, administration and IT strategies to MN Businesses



STATS IN MINNESOTA

JOB GROWTH OVER NEXT TEN YEARS

NEW JOB OPENINGS OVER NEXT TEN YEARS

ANNUAL SOUTH CENTRAL MN EARNINGS:

Experienced

Entry-Level

\$34.091

\$49,421

Median

\$75,337



Marketing Business, Management, and Administration **Hospitality and Tourism Finance**

Career Pathways:

Marketing Management, Communications or Research Sales Admin. Support **Human Resources**

Merchandising

Travel & Tourism, Banking **Accounting** Insurance **Securities and Investment Business Info. Mgt. Operations Management**

Career Specialty Examples

Accountant **Insurance Agent Market Research Analyst Economist HR Manager Administrative Asst. Office Manager Accounting Clerk**

Bank Teller File Clerk **Small Business Operator Customer Service Rep. Tax Preparer Travel Agent Buyer/Purchaser** and more.....

If you like to influence, persuade, perform, lead, or manage to meet organizational goals for economic gain, this career pathway may be for you. You may like to make decisions, meet people, initiate projects, give talks or speeches, organize activities or lead groups. Other people attracted to careers in this pathway like to work with data. They have clerical or numerical ability and like to carry out tasks in detail and follow through on others' instructions. Programs may include entrepreneurship, sales, marketing, hospitality and tourism, computer/

information systems, finance, accounting, personnel, economics and management.



BUSINESS, MANAGEMENT & ADMINISTRATION COURSE DESCRIPTIONS

ACCOUNTING I & II

The primary focus of Accounting I is to learn the rules and procedures of accounting for profit-motivated businesses. Students will be introduced to the language of business and basic accounting principles. Students will complete an accounting cycle for a sole proprietorship. Students will focus on competencies that include strategic thinking, risk analysis, teamwork, and leadership. The interpretation and use of data will be evaluated using financial reports which impacts our businesses, legal and environmental systems. Students will explore the many career opportunities using partnerships with businesses.

MARKETING

If you want to find out how companies like Nike, Coke, General Mills, and other successful companies and organizations accomplish their goals, this is the class for you. It will explore the activities involved in the foundations and functions of marketing products, services, images, and ideas. Students will learn about the 4 P's of marketing: product, price, place, and promotion. This course is a project-oriented and will include an in-depth look into marketing. Each student will develop a resort business of their dreams. They will start with a vision board, develop a marketing plan, and their end result will be a full-blown website to showcase their resort.

BUSINESS ECONOMICS

This course will give students a greater understanding of economics ranging from the viewpoint of the individual, consumer, or small business owner to the global economy. The course topics will include a full introduction to economics, supply, demand, market prices, the consumer, businesses and their resources, government, banking, economic stability, the global economy, and personal finance. If you are considering a career in business, this is a great class to explore and meet your Economics requirement.

To view a complete listing of courses available, please go to New Ulm Public School website at http://www.newulm.k12.mn.us/new-ulm-high-school/ new-ulm-high-school-counseling/



Industry Spotlight: Jensen Motors www.jensenbuickgmccadillac.com

Jensen Buick GMC Cadillac is the kind of business that you never get the feeling that "it's just business"; a sense of family and the importance of long-term relationships always comes through.

Rick Jensen purchased the business in 1988. In 1998 we moved to our new building further south in New Ulm where we are today. Co-owners and 2 nd generation Ben Jensen and Nicole Jensen Briggs are active in the community. Employees are also encouraged to volunteer in various organizations that they feel passionate about.



ACCOUNTANT STATS IN MINNESOTA

JOB GROWTH OVER NEXT 9.4%

NEW JOB OPENINGS OVER NEXT TEN YEARS

30,298

ANNUAL SOUTH CENTRAL MN EARNINGS:

Experienced

Entry-Level

\$43,388

\$63,919

Median

\$94,203



Transportation Architecture & Construction Manufacturing Science, Technology, Engineering, and Mathematics

Career Pathways:

Facility and Mobile Equipment Maintenance Sales and Service Health, Safety and **Environmental** Management Construction

Design and Pre-construction Production /Manufacturing **Engineering Quality Assurance** Maintenance & Repair

Career Specialty Examples

Architect Civil Engineer Construction Manager Systems Analyst Environmental Scientist Air Traffic Controller Auto/Farm Mechanic HVAC Technician

Drafter Electrician Machinist Roofer Woodworker Welder **Cement Mason** and more...

People attracted to careers in this pathway like to work with things. They like to work with their hands, with objects, machines and tools. This career field includes programs related to the technologies necessary to design, develop, install or maintain physical systems. These may include engineering and related technologies, mechanics and repair, manufacturing technology, precision production, electronics and construction.



WELDING TECHNOLOGY

Welding is designed for students to gain knowledge and skills that are key to a vast number of careers. Essential learning, experience and skill development are gained through arc welding, oxyacetylene welding, plasma cutting, and wire feed (MIG) welding. In addition, the most rapidly growing TIG (Tungsten Inert Gas) welding method is a component of this course. Learning is enhanced through the use of on line resources, community experts and instructional visits to business using these practices. Students will have the opportunity to earn college credit through an articulation agreement.

METALS FABRICATION

Metals Fabrication is a hands-on course which includes practical experiences in the fabrication of products. Students will construct a variety of projects using a variety of skills as well as develop mechanical and problem solving aptitude. Projects will be created through metal manufacturing, using, metal breaks, spot welding, metal lathe work, CNC simulators, pipe fitting, and soldering. A CAD unit will also be incorporated into this class. This class will provide students with practical applications for those students interested in pursuing a career in engineering or manufacturing.

BASIC & ADVANCED WOOD TECHNOLOGY

Basic Woods introduces units on safety, measurement, blueprint reading, project layout, various types of woods and wood joinery techniques, and typical finishes for wood projects. Each student will become accustomed to working with both hand and power tools safely with emphasis on learning how to safely operate power machines and the many operations that can be performed with them. Projects selection, plan designs, cost calculations, and project production be a major part of the class. In the advanced woods class, more complex projects are created based on the student's interests, abilities and aptitude. During this course students will have the experience of designing, estimating cost, building and finishing a project. A proficient working knowledge in and about the various mechanical disciplines is a key outcome of this class.

To view a complete listing of courses available, please go to New Ulm Public School website at http://www.newulm.k12.mn.us/new-ulm-high-school/ new-ulm-high-school-counseling/



Industry Spotlight: DLC Manufacturing & Fabrication

www.donnerlaser.com

Founded in 2008, DLC Manufacturing and Fabrication offers cutting mild steel up to an inch and a half offers a niche service. The company makes one-of-a-kind metal parts for about 70 manufacturers based mostly in the Upper Midwest. operates as a separate legal entity to address DLC customer needs for fabrication, emergency cutting support,

training. Since its inception, DLC strives to maintain itself on the forefront of emergent manufacturing technology.



ELECTRICIAN STATS IN MINNESOTA

JOB GROWTH OVER NEXT TEN YEARS

NEW JOB OPENINGS OVER NEXT TEN YEARS

ANNUAL SOUTH CENTRAL MN EARNINGS:

Median Entry-Level

\$44,387

\$65,395

Experienced

\$93,184



Health Science

Career Pathways:

Biotechnology Research and Development Diagonistic Services Supprt Services Health Informatics Therapeutic Services

Career Specialty Examples

Athletic Trainer Biologist Chemist **Dietitian Dental Hygenitist Food Scientist Physician** Medical Lab Technologist **Emergency Medical Technician** Nurse **Home Health Alde**

Phlebotomist Surgical Technician Veterinarian **Dental Lab Technician** First Responder **Optician Therapy Assistant** Pharmacy Technician **EEG/EKG Technician** Physical Therapist Asst. Radiology Technician and more...

People attracted to careers in this field like to help others. This career field includes programs related to the promotion of health in people an animals as well as the treatment of injuries, conditions and diseases. Programs may include jobs in medicine, dentistry, mental and physical health, nursing, therapy and rehabilitation, nutrition, fitness and hygiene



HEALTH SCIENCE TECHNOLOGY

INTRO TO SPORTS MEDICINE

This course is designed for students who are interested in fields such as athletic training, physical therapy, medicine, nurse, fitness, physical educator, physiology of exercise, kinesiology, nutrition, EMT, and other sports medicine related fields. This course provides students an opportunity for the study and application of the components of sports medicine, including but not limited to sports medicine related careers, medical terminology, anatomy and physiology, kinesiology, recognition, evaluation and immediate care of athletic injuries, injury prevention principles, the healing process, rehabilitation techniques, therapeutic modalities, taping and wrapping techniques, emergency procedures and sports nutrition.

DISEASES AND DISORDERS

This course is designed to introduce students to common diseases and disorders of the human body. Included is looking at the medical terminology within each body system, common symptoms and disease, routine diagnostic tests, common therapies associated with the diagnosis. The etiology (cause) of disease, common childhood diseases, genetic and developmental disorders, the effect of aging on the body, immune system diseases, and common mental health diseases and disorders are covered topics. This course is designed to encourage critical thinking and problem solving in a medical setting.

MICROBIOLOGY AND BIOTECHNOLOGY

This lab-oriented course is for students considering a career in a medical field or biotechnology (nurse, doctor, paramedic, veterinarian, X-ray technicians, dentistry, clinical research, forensic DNA analysis, lab technicians, etc) and anyone interested in the biology of microbes and genetic analysis. It will provide an introduction to bacteria, viruses, fungi, and molds, their impact on daily life (from food production to disease) and microbial genetics. Advanced topics will include DNA technology, modern applications of microbial genetics, and the impacts of biotechnology in society. Laboratory techniques will involve isolating, culturing, and identifying microorganisms, production of yogurt and cheeses using microorganisms, and genetically altering bacteria using jellyfish DNA.

To view a complete listing of courses available, please go to New Ulm Public School website at http://www.newulm.k12.mn.us/new-ulm-high-school/ new-ulm-high-school-counseling/



Industry Spotlight: New Ulm **Medical Center** www.allinahealth.org/New-Ulm-Medical-Center/

New Ulm Medical Center, a part of Allina Health, is a 25-bed Critical Access Hospital and clinic in Brown County, MN, with over 600 employees and 50 multi-specialty physicians. The Medical Center has been recognized as a national leader in areas of patient safety, population health, innovation, and data analytics.



REGISTERED NURSE STATS IN MINNESOTA

JOB GROWTH TOWER NEXT **TEN YEARS**

Entry-Level

\$53,976

NEW JOB OPENINGS TEN YEARS

OVER NEXT 42,029

ANNUAL SOUTH CENTRAL MN EARNINGS:

Median

\$68.432

Experienced

\$91,873



Law, Public Safety, Corrections and Security **Government and Public Administration Human Services Education and Training**

Career Pathways:

Correction Services Emergency & Fire Mgt. Services Law enforcement **Legal Services Consumer Services**

Early Childhood Dev. **Teaching/Training** Goverance **National Security Public Management** and more...

Career Specialty Examples

Funeral Director Patrol Officer Teacher Social Worker Forensic Science Tech. Legal Assistant Paralegal Lawyer **Probation officer**

Child Care worker Firefighter Military Enlisted Personnel Educational Admin. Flight Attendant Court Clerk Recreation Guide and more...

People attracted to careers in this field like to work with people. They like to work in groups, help others with problems, work with children, serve, teach, inform and train others. This career path includes programs related to economic, political and social services. These programs may include education, law and legal studies, law enforcement, public administration, child and family services, religion and social services.



HUMAN SERVICES

PSYCHOLOGY

This course allows students to explore the human mind and why people do what they do. The basic focus of psychology is to study, explain, and predict human behavior. Attention will be devoted to psychological theories as they relate to nature versus nurture, chemistry of the brain, learning, consciousness, mental health, motivation, and personality types. Students are expected to participate in labs, group demonstrations, role-play, and numerous group activities. This course is recommended for all students interested in understanding human behavior and why people do the things they do.

INTRO TO LAW

Are you addicted to crime scene television? Have you ever thought about pursuing a career in a law-related field? In this course, students will learn about criminal law, civil law, legal aspects of marriage and divorce, property law, and legal aspects of credit and debt. Students will tour the Law Enforcement Center, have many law related career speakers, and participate in debates. Students also have the opportunity to experience a Mock Crime Scene and use their problem-solving skills to solve the crime.

ECONOMICS

The goal of this course is to promote understanding and insight into the workings of the American system of government. The course is designed to show how public decisions are made and how the student can become involved in the decision making process. Students will learn about the U.S. Constitution, Federalism, individual rights, presidential primaries, elections, and the three branches of government. Issues and events affecting the governmental operations will be studied and discussed as they become newsworthy.

SOCIOLOGY

The students will look into the stages of human development and examine how socialization agents can affect child, teen, and adult development. This class will also look into such topics as folkways violations, dating, drug use, marriage, deviant behavior and their impact on society.

To view a complete listing of courses available, please go to New Ulm Public School website at http://www.newulm.k12.mn.us/new-ulm-high-school/new-ulm-high-school-counseling/



Industry Spotlight: Brown County Human Services

www.co.brown.mn.us/ human-services-home

The Purpose of Brown County Human Services is to provide an array of services and assistance designed to help individuals reach or strive for any one of the following goals:

- Self-support
- Self-sufficiency
- Protection for children and adults
- from neglect, abuse and exploitation
- Preservation of families
- Community-based care
- Residential care



POLICE OFFICER STATS IN MINNESOTA

GROWTH OVER NEXT TEN YEARS 7.6%

NEW JOB OPENINGS OVER NEXT TEN YEARS

7,222

ANNUAL SOUTH CENTRAL MN EARNINGS:

 \$61,651

Median

\$83,595

Table 12. Region 9 - South Central Occupations in Demand by Education Level, 2017			
Less than	High School	Some college, Vocational	Bachelor's Degree
High School	or Equivalent	Training or Assoc. Degree	or Higher
Personal Care Aides	Supervisors of Retail Sales	Registered Nurses	Accountants
(\$26,458)	Workers (\$35,063)	(\$56,815)	(\$62,792)
Cashiers	Heavy & tractor Trailer Truck	Nursing Assistants	Elementary School Teachers
(\$20,467)	Driver (\$40,584)	(\$27,125)	(\$51,454)
Combined Food Prep &	Supervisors of Food Prep &	Licensed Practical &	Secondary School Teachers
Servings Workers (\$20,776)	Serving Workers (\$34,717)	Vocational Nurses (\$42936)	(\$57.919)
Retail Salespersons	Farmers, Ranchers & Other	HVAC Mechanics	Child, Family & School Social
(\$21,092)	Agricultural Mgrs. (\$79,870)	(\$47,753)	Workers (\$52,133)
Laborers & Freight, Stock & Material Movers (\$31,014)	Sales Reps, Wholesale &	Automotive Service Techs. &	Civil Engineers
	Manufacturing (\$54,482)	Mechanics (\$37,089	(\$77,894)
Stock Clerks and & Order	Teacher Assistants	Machinists	Physician Assistants
Fillers (\$23,555)	(\$27,881)	(\$37,305)	(\$107,805)
Janitors & Cleaners	Light Truck or Delivery	Industry Machinery Mechanics	Training &Development
(\$25,913)	Services Drivers (\$30,064)	(\$46,637)	Specialists (\$53,903)
Slaughterers & Meat Packers	Social & Human Service	Police & Sheriff's Patrol	Industrial Engineers
(\$30,742)	Assistants (\$41,846)	Officers (\$54,424)	(\$78,367)
Farmworkers, Farm & Ranch	Office Clerks, General	Computer User Support	Electrical Engineers
Animals (\$20,314)	(\$31,557)	Specialists (\$43,013)	(\$78,367)
Construction Laborers	Secretaries & Admin.	Radiologic Technicians	Computer Systems Analysts
(\$41,596)	Assistants (\$37,489)	(\$60,114)	(\$77,286)

Source: https://mn.gov/deed/assets/rp_edr9_090418_tcm1045-133261.pdf

This publication was made possible by the support and guidance of the following:

- South Central Perkins Consortium/South Central Service Cooperative
- South Central Workforce Council
- Area businesses

- Minnesota Department of Economic Development (MN DEED)
- New Ulm Public School Administration and Staff





