

# Advanced Automotive



## Industry Profile



## Make Macomb Your Home

Whether you operate a small business, direct a Fortune 500 company or are accountable for the success of an enterprise that lies somewhere in between, Macomb County is a great place to build a business. Located in greater Detroit, our industrial base is built on more than 100 years of experience of creating the evolution of the U.S. automotive industry.

Today, the automotive industry is stronger than ever. Our region is home to over 60 of the top 100 North American automotive suppliers. These companies appreciate our unparalleled supply chain, exceptional workforce and modern infrastructure. Incoming businesses are often pleasantly surprised at how cost-effective and easy it is to get started here. Add safe communities, excellent schools, outstanding health care and four glorious seasons to enjoy and you will discover that Macomb County offers an amazing quality of life that only Pure Michigan can provide.

Our economic development staff stands ready to assist in exploring your options. Please get in touch to learn more about how our unique automotive ecosystem meets your current business objectives.

Mark A. Hackel  
Macomb County Executive



## Growing Automotive Industry Demand in Macomb County

It is projected that global automotive sales between 2015 and 2040 will experience a 96 percent growth rate, with 21 percent coming from emerging markets. To accommodate this new volume, automotive design and production will see a shift to smaller and lighter vehicles. The next generation of vehicles will also focus on connected and automated vehicle technologies and environmentally-friendly materials.

Michigan and Macomb County companies are leading this automotive transformation by utilizing our diverse and highly-skilled workforce. Michigan's high-tech workforce is the fourth largest in the country with 65,000 engineers, 70,000 R&D professionals and 181,000 skilled tradespeople. Macomb County is uniquely positioned to help companies - large and small - to take advantage of this global expansion in the automotive industry.



## Locational Advantage

Proud to be a part of greater Detroit and the State of Michigan, Macomb County offers a distinct competitive advantage for automotive manufacturers and the companies that support them:

### Automotive Research and Manufacturing Ecosystem Unlike Any Other on Earth

- 1,600 businesses with ties to manufacturing
- 66,000 manufacturing jobs
- 285 tool and die shops
- Macomb's manufacturers produce an average of \$8.6 billion in goods annually
- Home to the first satellite office of USPTO
- More than 3,000 patents are filed annually throughout greater Detroit
- Michigan produces 23 percent of all U.S. vehicles
- 70 percent of all U.S. auto-related research dollars are invested in Michigan
- 375 statewide research and development centers
- Michigan produces more vehicle engines, transmissions and automotive parts than any other state in the U.S.
- Michigan has 12 automotive assembly plants along with 35 parts and component plants
- 14,000 manufacturing establishments statewide

### Exceptional workforce

- 400,000+ resident workers contribute to a regional workforce of more than two million
- Michigan ranks first nationally in concentration of industrial designers and engineers
- Michigan's automotive industry directly supports more than 500,000 jobs, which represents 22 percent of the U.S. automotive industry workforce
- Macomb Community College serves 48,000 students annually and partners with 12 colleges and universities to confer certifications, associate's, bachelor's, master's and doctoral degrees in more than 80 programs
- Macomb Community College is a national leader in offering customizable workforce training programs
- Michigan has 91 education and training institutions that offer 650 automotive-based degrees and programs
- Universities in the state grant master's degrees and Ph.D.s at a rate almost twice that of the national average

### Business friendly

- Appropriately zoned with solid infrastructure, there are many development-ready sites in Macomb County
- 1,250 foreign firms from 34 countries operate in the Detroit region
- At just six percent, Michigan's corporate income tax is one of the most competitive in the nation
- Michigan offers up to \$150 million for investment incentives and as much as \$100 million in loans for small and midsize companies

## Industry Support

### Macomb-Oakland University INCubator

Macomb-OU INC is a regional hub for accelerating economic growth in the targeted industries of advanced manufacturing, aerospace, defense/homeland security and transportation. Its purpose is to provide a supportive environment for start-up and emerging companies.

**MAComb-OU  
INCubator**

A newly launched international landing zone is equipped to assist companies headquartered outside of the U.S. to gain a foothold in the North American market. Client companies have access to a wide range of business support services, rental space with flexible leases, assistance in the commercializing of new technologies and assistance in securing traditional and non-traditional forms of financing.



### Michigan Automated Systems Collaborative (MASC)

The MASC represents the robotic and automated systems technology in the State of Michigan. This includes anything from the sensors that are integrated in improvised explosive detection robots to the precision optics found in surgical equipment. It is the technology that drives the automation line, as well as the innovation that drives our expertise for smarter and safer vehicles.

The MASC joins industry, academia, research, professional associations and government to promote, attract and grow the robotic and automated system industries in the state. The collaborative was established through a grant awarded to Macomb County from the Michigan Economic Development Corporation (MEDC). Michigan is home to hundreds of major research, engineering and testing hubs and the MASC facilitates collaboration and partnership throughout the field of automated systems.



## Automation Alley

As Michigan's largest technology business association, Automation Alley is dedicated to growing the economy of Southeast Michigan and enhancing the region's reputation around the world. Automation Alley helps local companies of all sizes – from startups to large corporations – grow and prosper through talent and business development programs and services. Since its founding in 1999, Automation Alley has been a critical driver of economic development and technology innovation in Southeast Michigan.



Automation Alley has five locations, including a headquarters in Troy, a defense office in Sterling Heights, a satellite office at the Macomb County Department of Planning & Economic Development, a Product Lifecycle Management Center at Oakland University in Rochester and an office in downtown Detroit.



## Other Industry Support

- Center for Automotive Research (CAR)
- Center for Fuel Cell Systems & Powertrain Integration
- EPA's National Vehicle & Fuel Emissions Laboratory
- Michigan Manufacturers Association (MMA)
- Michigan's Technology Tri-Corridor
- Michigan Manufacturing Technology Center (MMTC)
- National Automotive Center (NAC)
- National Center for Manufacturing Sciences (NCMS)
- National Biofuel Energy Lab (NBEL)
- National Institute of Industrial Technology (NAIT)
- National Vehicle & Fuel Emission Laboratory
- Original Equipment Suppliers Association (DESA)
- Society of Automotive Engineers (SAE)
- Society of Manufacturing Engineers (SME)
- TARDEC's National Automotive Center (NAC)
- Toyota Research Institute of North America
- U.S. Tank Automotive Research Development and Engineering Center (TARDEC)



## Academic Support and Research

Michigan's 16 public colleges and universities spend more than \$2 billion annually on research and development activities. Collectively, they offer more than 10,000 degreed graduates annually.

### University of Michigan (UM)

The University of Michigan Transportation Research Institute (UMTRI) is dedicated to achieving safe and sustainable transportation for a global society. With a multimillion-dollar research program, broad faculty expertise and multiple collaborators, UMTRI is committed to interdisciplinary research that will ultimately increase driving safety and further transportation systems knowledge.



Since its inception in 1965, UMTRI has earned a significant national and international reputation for its motor-vehicle safety research related to injury biomechanics. UMTRI has since embraced a variety of disciplines and is now at the forefront of connected-vehicle research and testing, sustainable mobility systems, transportation data fusion and analysis, and the efficient movement of heavy freight, to name just a few.

UMTRI has carried out more than 1,000 short- and long-term research projects in broad areas involving accident data collection and traffic safety analysis, bioengineering, human factors, mechanical engineering, psychology, economics and public policy. UMTRI research scientists collaborate with many academic, government and industry partners to accomplish interdisciplinary research, generating new knowledge and providing student training. UMTRI's key initiatives embody its commitment to safe and sustainable transportation.



### Macomb Community College (MCC)

The Center for Advanced Automotive Technology (CAAT) is one of just 40 Advanced Technological Education Centers in the United States and is strategically located on MCC's South Campus.

MACOMB COMMUNITY COLLEGE

Center for Advanced  
Automotive Technology  
C · A · A · T

Discover. Connect. Advance.™

MCC is recognized as a leader in developing educational programming around the evolving fuel and energy technologies utilized by the auto industry.

The CAAT is the result of collaboration between MCC and Wayne State University (WSU) to provide a spectrum of educational opportunities to meet the needs of the growing vehicle electrification field. MCC and WSU are working with a number of local and regional partners to encourage the economic transformation of Southeast Michigan and to build on the region's heritage as the hub of the global auto industry.



The creation of the CAAT is one step in a series that MCC began more than five years ago to support the auto industry's push into alternative fuels and energy. MCC's objective is to provide students with the new skills required to align them with the needs of a continuously evolving, technology-driven automotive industry. This initiative is a major step forward in positioning its students and the region for continued industry leadership.

"The potential in the renewable energy and green technology arena is just beginning to open up," said Dr. Jim Jacobs, president of MCC. "This community is uniquely positioned to be able to build upon its automotive heritage of engineering and manufacturing and to become a center of excellence in these new technologies."

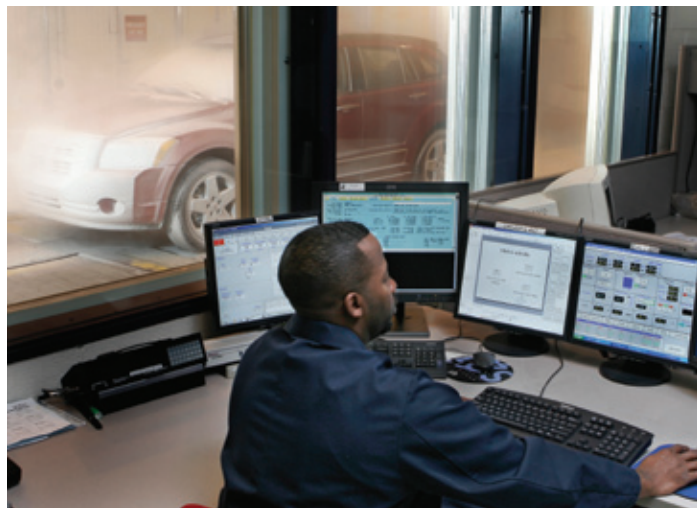


## Lawrence Technological University (LTU)

Finding new applications for advanced materials is the central mission at the Center for Innovative Materials Research (CIMR) at LTU. Completed in 2008, CIMR was initially funded by a five-year, \$11 million agreement with the U.S. Army. The 7,200-square-foot research facility with a 30-foot clearance height has a 25,000-pound crane to accommodate testing of structural components up to 100 feet long under various types of loads up to one million pounds. A full-scale environmental chamber – spacious enough for a large vehicle – can simulate harsh weather conditions such as blowing, freezing rain, sub-zero temperatures or dry heat up to 180°F.

CIMR also has the MTS Model 311 Four Post Frame which is a high-force test system that can be used for a variety of material property tests. It has an environmental chamber that can subject a vehicle to temperatures ranging from -200°F to 200°F.

The facility is best known for developing new applications for carbon fiber under the leadership of College of Engineering Dean Nabil Grace. Many other advanced materials have also been developed and/or tested for applications in the military as well as the automotive industry. “We continue to invest in new testing equipment that will enhance our automotive research capabilities in the future,” Grace said.



## Other Michigan Academic Programs and Research:

### Central Michigan University

- The Center for Applied Research and Technology

### Grand Valley State

- Michigan Alternative & Renewable Energy Program

### Kettering University

- Center for Fuel Cell Systems & Powertrain Integration

### Lansing Community College

- Alternative Energy Engineering Program

### Lawrence Technological University

- Center for Innovative Materials Research
- Robotics Engineering

### Macomb Community College

- Center for Alternative Fuels Engineering & Advanced Technology
- Michigan Technical Education Center

### Michigan State University

- Automotive Research Experiment Station
- Energy Devices & Systems Center

### Michigan Technological University

- Alternative Fuels Group Enterprise
- Power and Energy Research Center
- Sustainable Futures Institute

### Oakland University

- Engineering and Computer Science
- Product Development and Manufacturing Center

### University of Michigan

- Alternative Fuels & Vehicles
- Automotive Research Center
- Center for Transportation
- Connected Vehicle Proving Center
- DTE Power Electronics and Electric Drive Laboratory

### Wayne State University

- Center for Automotive Research
- Smart Sensors and Integrated Micro Systems





Macomb County and Southeast Michigan are Home to Chrysler, Ford and General Motors

Chrysler

Chrysler Group’s Technology Center and World Headquarters is located in Auburn Hills, Michigan. The 504-acre facility is the only automotive complex that brings together cutting-edge scientific research, industry-leading creative design, vehicle development, engineering, manufacturing, marketing and corporate leadership all under one roof.

The Auburn Hills facility is also the global engineering electrification center for all Chrysler and Fiat vehicles. The center houses vehicle product teams, eight design studios, pilot plant and scientific laboratories. The labs include an aero-acoustic wind tunnel; emissions lab; powertrain test center; noise, vibration and harshness lab; and electromagnetic compatibility facility, in addition to a 1.8-mile test track.



Ford Motor Company

Ford’s World Headquarters, Design, Engineering and Product Development centers are located in Dearborn, Michigan and manage a global workforce of 166,000. Ford’s product development system utilizes global platforms to deliver customer-focused programs rapidly and efficiently across global markets.

Through their “hub and satellite” approach, one lead product development engineering center—the hub—is assigned for each global vehicle line, thereby ensuring global scale and efficiency through common designs, parts, suppliers, and manufacturing processes. The hubs are supported by regional engineering centers - satellites - which also help deliver products tuned to local market customer preferences while maintaining global design DNA. By 2016, 99 percent of Ford’s world-wide vehicle volume will come off of nine global core platforms.



General Motors

The General Motors Technical Center is located Warren, Michigan. The 330 acres campus is home to 16,000 GM engineers, designers, and technicians and has been the center of the company’s engineering effort since its inauguration in 1956.

From electric and mini-cars to heavy-duty full-size trucks, monocabs and convertibles, General Motors’ dynamic brands offer a comprehensive range of vehicles in more than 120 countries around the world. GM’s World Headquarters is located in downtown Detroit and manages a global GM employee population of 212,000 at nearly 400 facilities on six continents.



Top 50 Macomb County Companies That Serve the Advanced Automotive Industry\*

U.S. Manufacturing Corporation	Utica Enterprises, Inc.
Chrysler Group LLC	US Farathane Corporation
Sodecia USA Automotive Corp.	MNP Corporation
Iroquois Industries, Inc.	Yanfeng USA Automotive Trim Systems, Inc.
United Machining, Inc.	Axalta Coating Systems
TransForm Automotive, LLC	Linc Logistics Company
J. G. Kern Enterprises, Inc.	Global Automotive Systems, LLC
Concord Tool and Manufacturing	Horizon Steel Co.
Motor City Stamping, Inc.	IMPCO Automotive
Wico Metal Products Company, Inc	TransNav Technologies, Inc.
Oakley Industries, Inc.	Federal Screw Works
D & N Bending Corporation	SAS Global
General Motors Company	Complete Prototype Services, Inc.
Ford Motor Company	Bridgewater Interiors
Grant Industries, Inc.	Sur-Flo Plastics and Engineering
AGS Automotive Systems	The Paslin Company
TRW Vehicle Safety Systems, Inc.	Century Plastics, Inc.
Fisher & Company, Inc.	Dayco Products LLC
PT Tech Stamping, Inc.	Romeo Rim, Inc.
Press-Way, Inc.	Global Enterprises LLC
Faurecia	Grupo Antolin Michigan, Inc.
Mold-Tech	Flex-N-Gate, LLC
Acument Global Technologies	Stant
TI Automotive	MFC Netform
JVIS USA, LLC	
Tower Automotive	

\* Ranking based on annual revenue in U.S. dollars.



## More Than 250 Area Companies Specialize in Advanced Automotive Including:

### Fori Automation Inc.

Fori Automation Inc., founded in 1984 in Shelby Township, Michigan, has built a strong reputation of designing and building state of the art assembly, testing, and welding systems. By leading with technology, Fori Automation has successfully transferred their patented technologies across continents into the automotive, aerospace, agriculture, recreational vehicle, nuclear, and defense industries.

Fori's products have expanded over the years to include: Automated Guided Vehicles (AGV's), Chassis Marriage Systems, 3-D Wheel Aligners, Toe Automation, Headlamp Aimers, Roll & Brake Testing Systems, Tire & Wheel Systems, Tire Loading & Installation, Caster/Camber Set Systems, Suspension Module Assembly & Alignment, Headliner Assembly & installation Engine Dress, Cockpit Assembly & Installation, Sunroof Assembly & Installation, Seat Assembly & Installation, Urethane & Glass Systems, Material Handling & Conveyance, and Welding Systems.

Fori Automation's global companies include; Shelby Township, MI (Global Headquarters), Merzig, Germany, Beijing, China, Seoul, South Korea, Pune, India, Saltillo, Mexico and Sao Paulo, Brazil.

**"By leading with technology, our seven companies located on 4 continents have provided our automotive customers with the necessary regional sales, design, manufacturing and service support. As our customers continue to expand globally, our company's global presence allows them to leverage Fori Automation's standardized process, design, and assembly systems across common vehicle platforms in different plants around the world. This provides the customer with a lower cost, lower risk solution with a shorter delivery schedule."**

*Paul Meloche, Vice President  
Fori Automation*





## PASLIN

The Paslin Company, incorporated in 1937, is a full service process, design and build organization. The company has always been recognized as a leader in the construction and integration of manufacturing assembly and automation systems.

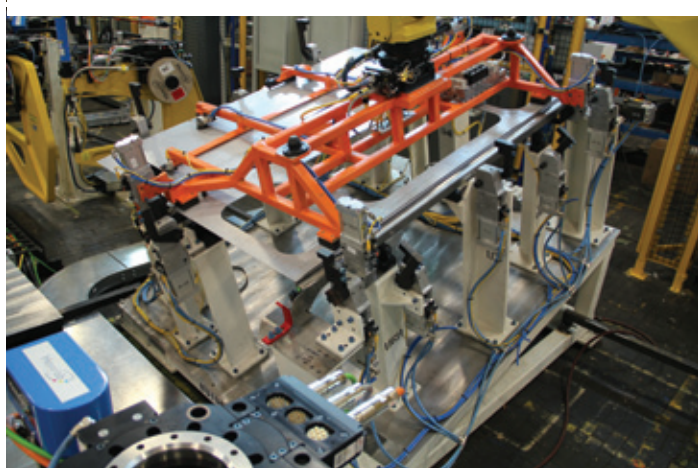
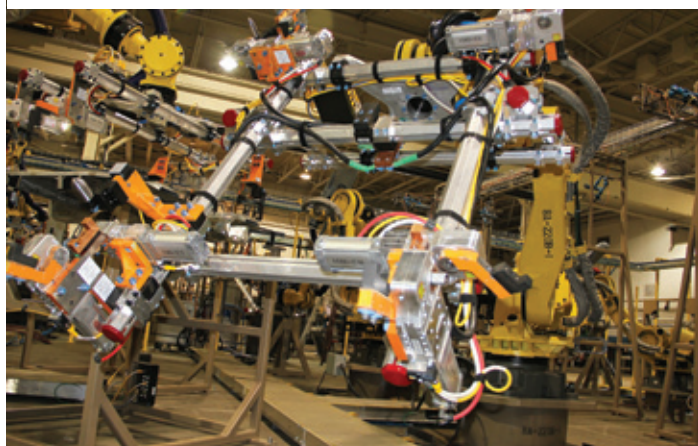
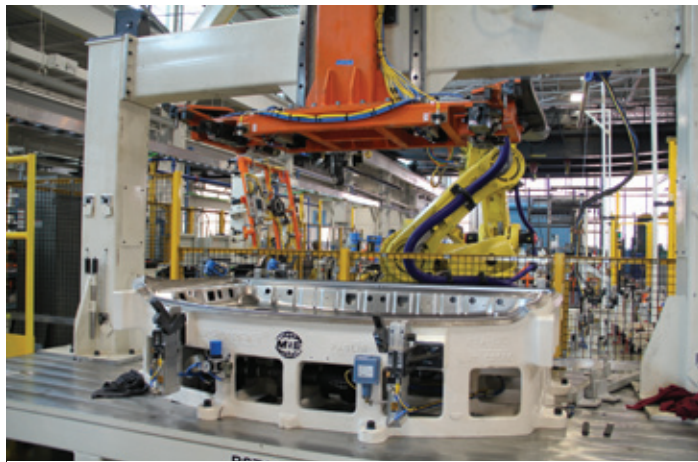
Paslin's engineering team utilizes their extensive knowledge to design systems exceeding their customers' manufacturing needs. The team's design knowledge spans across multiple software platforms including: Catia, Delmia, Unigraphics, Inventor and AutoCad. The company's engineers use creative applications of systematic principles to design and develop tooling advantageous to their customer's required manufacturing process. Their tooling designs adhere to the systems intended function, meet the proposed economics of operation, and address the quality and safety of all employees.

Paslin is ISO-9001 2008 certified and currently employs more than 700 people and has over 750,000 ft. of manufacturing space located at three different facilities located in Warren, Michigan.

Because of their growth in the industry, Paslin has also broken ground on a new 166,000 square-foot facility in Shelby Township, Michigan. The new facility will house 180 newly-hired design, engineering and assembly personnel.

**"We looked at many locations for our new facility, but Shelby Township offered us access to a highly skilled workforce, a great location ready to build and the Board of Trustees awarded the company an industrial facilities tax exemption certificate. It was an easy decision to expand our operations in Shelby Township."**

*Kerry Hammer, Chief Operating Officer  
Paslin Company*





## PTI ENGINEERED PLASTICS

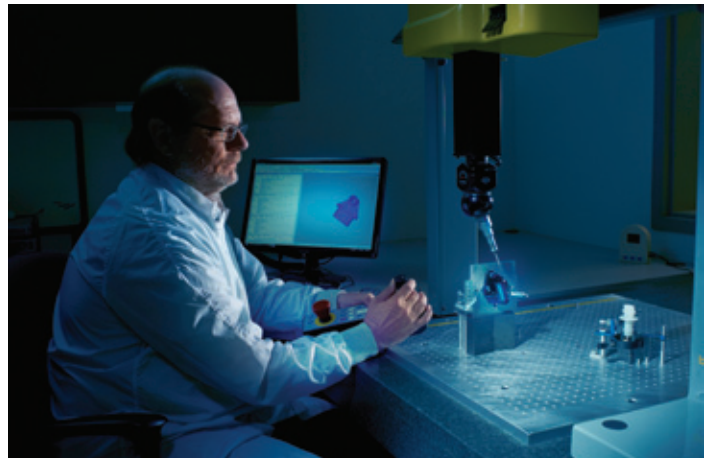
Founded in 1984, PTI Engineered Plastics in Macomb Township are specialists in product development, prototyping and high and medium-volume manufacturing services. PTI's industry-leading advanced product development team provides innovative solutions from designing for manufacturability, complex problem solving and helping to streamline their client's projects. Nearly 50 percent of the PTI's business is comprised of prototyping and short-run manufacturing.

PTI works with customers to understand their product vision and the need to get their product to market quickly, but without compromise to design or material. To meet this product development challenge, the company utilizes their PTI Production Prototype (P3™) — a proprietary process that provides customers with a single tool that meets both their quality and timeline requirements, manufactured from the same tool.

PTI is also a leader in employee training with their on-site technical academy. The company has been recognized by Macomb County for their workforce development programs and the Detroit Free Press has nominated the company five straight years for being one of the Top Workplaces in Michigan.

**“Over the last four years we have added over a 150 employees and the reason we have done that is we focus on the employee. People wanted to come here because they have the opportunity to learn and grow and that’s what we want to provide. It’s really a Win-Win combination for our 250 employees, our clients and the company.”**

***Kurt Nerva, President  
PTI Engineered Plastics***





## Waltonen

Established in 1957, Waltonen is a full service design and engineering company, located in Warren, Michigan. Clients include OEM and major tier 1 manufacturers and suppliers in the automotive, transportation, aerospace, defense, medical, consumer product, and heavy industries. The cornerstone of its success consists of long-standing relationships with both their clients and their employees, by supporting the complete product development lifecycle and offering a variety of innovative custom services. Their expertise with an emphasis on design, manufacturing systems and high quality engineering is what makes Waltonen an engineering leader and ideal partner.

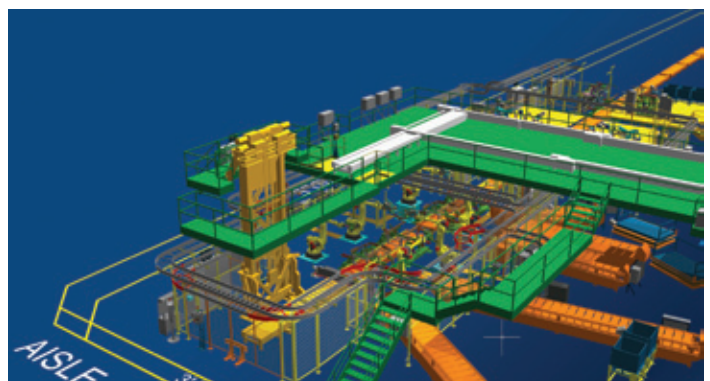
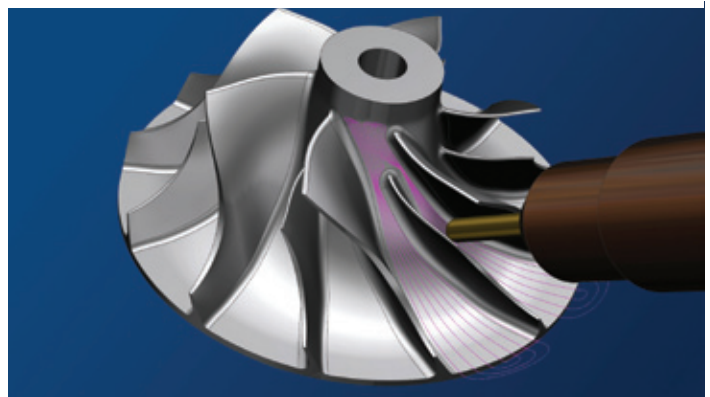
**DESIGN & ENGINEERING:** Waltonen is ISO-9001 certified and specializes in concept engineering, product development and life cycle management, modeling and simulation, digital manufacturing, systems integration, mechanical design, and program management.

**MANUFACTURING SYSTEMS:** Waltonen leads the way with facilities planning, and equipment, assembly and transfer systems engineering, specializing in large complex engineering and design programs.

**QUALITY ENGINEERING:** Waltonen can evaluate and analyze dimensional engineering, human ergonomics, CMM inspection, scanning, GD&T, tolerance analysis, reverse engineering, checking fixture design and build. Experience, strength of commitment and depth of knowledge ensures the highest level of quality and value for its customers.

*“Waltonen Engineering has fifty plus years of manufacturing expertise, combined with product development and quality validation which makes us a technical leader in the development and execution of complete, cutting-edge digital manufacturing solutions.”*

*Lloyd Brown, President  
Waltonen Engineering*





## Make Macomb Your Home

Offering safe neighborhoods, strong schools, top-notch health care facilities and a wide assortment of leisure-time options, Macomb County is a great place to call home or build a business. Macomb is one of Michigan's fastest growing counties and its third most populated. Proud to be a part of greater Detroit, our region also offers world-class cultural institutions and a loyal fan base for our professional sports teams.

Featuring the most affordable housing in the region, housing options include starter bungalows in mature neighborhoods, opulent estates on park-like parcels and everything in between.

Residents in Macomb County expect and demand quality education. Shaping students to be global leaders in the 21st century is a key goal in the curriculums of the county's public schools and colleges. Two tuition-free high schools in Macomb confer the coveted International Baccalaureate® diploma.

Macomb Community College was the first in the nation to establish a "University Center" where access to degrees from 12 Michigan colleges and universities can be found on one campus.

Macomb enjoys all of Pure Michigan's four glorious seasons. From neighborhood playgrounds to expansive parkland, there are more than 17,000 acres of recreational land. Resting on 32 miles of Lake St. Clair freshwater coast, boating is a favored pastime. There are more than 52,000 registered boats, 50 marinas and 10,000 slips for fast access to the Midwest's most popular fishing destination.

More than 1,000 restaurants offer a delicious array of gourmet delights that complement a rich ethnic diversity. There are more than 2,500 places to shop in Macomb, including four regional malls, six old-fashioned downtowns, a variety of farmers markets and antique shops. Health care options are also abundant with over 50 regional hospitals and medical centers.

Just minutes from Canada, there are several border crossings in the area. Nearby Detroit Metropolitan Airport offers non-stop flights to more than 160 global destinations.

Learn more about living in Macomb County at [www.MakeMacombYourHome.com](http://www.MakeMacombYourHome.com)



Photo courtesy Macomb Community College



Photo courtesy Beaumont Health System



## We Are Here To Help: Macomb Business Advantage

The Macomb County Department of Planning and Economic Development serves as the county's agency for advancing business growth. A professional and seasoned staff of business development specialists stand ready to meet the ever-changing needs of industry.

Directed to keep abreast in a multitude of programs and incentives to foster business investment, staff can offer tailored programs to meet your company's expansion goals.

### We achieve this by:

- Providing direct, personalized services to our existing companies – both small and large – for the purpose of increasing their competitiveness and profitability
- Assistance in finding suitable properties for purchase or lease based on client specifications
- Consultation regarding a variety of development and tax incentives that make Macomb the most cost effective choice
- Connections to relevant (and often cost-free) workforce screening and training programs
- Guidance for moving quickly through state and local permitting and approval processes
- Fostering partnerships that lead to cutting-edge programs for addressing the changing needs of the industry
- Attracting new and diverse businesses that offer mutual benefit to a vast "cradle to grave" supplier network
- Market intelligence and research, including workforce capacity and infrastructure support
- Up to date information about financing and incentive programs including venture capital, low-interest redevelopment loans as well as state and local investment incentives

#### Department of Planning and Economic Development

Phone Number: 586-469-5285

E-mail: [planning@macombgov.org](mailto:planning@macombgov.org)

Visit: [www.MacombBusiness.com](http://www.MacombBusiness.com)



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