

Macomb County and State of Michigan ...

No need for slick marketing brochures / expensive advertising campaigns; just basic undisputable facts / information / statistics speak volumes about why all of Michigan – and especially Macomb County – is so ideally suited for virtually any industry – and especially for defense / aerospace / auto industry.

Global technology is moving at fastest pace in history, which makes it difficult to predict / project future challenges and future requirements for any business / company / industry / or governmental agency, including U.S. Department of Defense ('DoD') and Department of Homeland Security ('DHS').

This makes it more important than ever to put less emphasis on specific technologies and specific things - and more emphasis on 'best practices / procedures / processes / systems' that enable a wide variety of different 'things' to first be '*envisioned*' ... and then designed, engineered, tested, tooled in one place best suited for those purposes, including easy 'coordination' of those purposes (Michigan) ... with those things then being assembled in any location best suited at time (which can certainly include Michigan!).

Below is summary of easy-to-document facts / info / statistics from many different sources ... all intended to assist anyone in decision-making process relating to current or future needs.

- **State of Michigan** (*population ~ 9.9 million*) was once known as '*Arsenal of Democracy*' ... and is now more widely known as '*Arsenal of Innovation.*'
- **Macomb County** (*population ~ 900,000*) is part of tri-county Metro Detroit Region (*population ~ 3.9 million*) ... and Macomb County is known as '*Defense Capital of Midwest.*'
- **Macomb County** is also home to Michigan's '*Defense Corridor*'... containing one of heaviest concentrations of defense contractors in Midwest.

Macomb County provides fast-easy access to many different businesses and business leaders, best practices-procedures-systems, research-development-engineering centers, and major technical centers developing-advancing some of latest-greatest technologies in the world.

Macomb County is home to ...

- Detroit Arsenal / TACOM / TARDEC (*Tank Automotive Research Development Engineering Center ... roughly equivalent to US Army 'Tech Center'*)
- Selfridge ANG Base, which incorporates multiple facilities for all branches of military services and Department of Homeland Security (*including secured research and testing facilities*)
- Tech Centers of BAE Systems, General Dynamics Land Systems, General Motors, Navistar Defense, Oshkosh Defense, and many other specialized engineering centers familiar with (and with security clearances needed for) working for US DoD. (Tech Centers of AM General, Chrysler, Ford also located nearby)

In addition ...

- World headquarters of GM, Ford, and Chrysler (*and many other very large global corporations*) are located within 30-minute drive time of Macomb County Defense Corridor.
- TARDEC (*'Tank Automotive Research Development Engineering Center'*) at Detroit Arsenal and SAE (*'Society of Automotive Engineers'*) have created a public-private partnership known as DATC (*'Defense Automotive Technology Consortium'*) intended to foster increased collaboration and synergies between Michigan's rapidly expanding auto / defense / aerospace industries.
- General Motors and TARDEC recently collaborated on development of a unique hydrogen fuel-cell powered vehicle platform capable of autonomous operation, and intended to serve as a highly versatile and cost-efficient 'operating platform' for a wide variety of different civilian / military vehicles. (*Should be noted that 'platform design' - sometimes known as 'open architecture' - and a unique 'tiered system' of supply chain management are hallmarks of 'best practices / procedures / systems' developed by Michigan industry over many years, and still in common usage today.*)
- Detroit Metro International Airport (*a global 'hub' airport with many direct / non-stop daily flights to virtually all major cities of USA and world*) is located within 35-minute drive time of Macomb County Defense Corridor.
- Entire Metro Detroit region is known for its advanced research relating to autonomous vehicles and systems, robotics, artificial intelligence, and the highly specialized cybersecurity capabilities that these systems require.
- "Michigan is uniquely positioned to lead the world in development and integration of automotive technologies that will define 21st century intelligent mobility. In 2014, Michigan led the United States in connected vehicle projects (45) ... a growth of 50% over the previous year and 30% more than next closest state." (Detroit Regional Chamber of Commerce website)
- "Michigan is leader in autonomous driving, and Michigan is one of four states that have passed laws allowing driverless vehicles on roads, and leads the country in connected vehicle projects." (Michigan Economic Development Corporation website)
- Michigan is home to American Center for Mobility ('ACM'), an internationally acclaimed research and testing facility for autonomous vehicles and the many different technologies that enable such vehicles to function ... located ~ 60-minute drive time of Macomb County Defense Corridor. (***Ironically, this huge research and testing facility is constructed on former site of largest aircraft factory in world ... designed and built from ground up by automotive engineers at Ford Motor Company as part of industry restructuring for Arsenal of Democracy. Applying same best practices used to produce autos and trucks, aircraft production at this facility achieved incredible production rate of one complete four-engine B-24 Bomber (with over 1.2 million individual components) every 55 minutes!***)
- Michigan is also home to ...
 - Automotive Research Center ('ARC') ... a U.S. Army Center of Excellence for Modeling and Simulation of Ground Vehicles, established in 1994 at the University of Michigan and now including collaborative relationships with Wayne State University, Oakland University, the University of Iowa, Clemson University, and Virginia Tech.

- Camp Grayling ... owned / operated by Michigan National Guard, this sprawling training facility spans 3 entire counties in center of Michigan, and includes largest restricted air-space east of Mississippi, and only place east of Mississippi approved for live-fire military training exercises and training of unmanned aerial systems ('drone') pilots.
- Lightweight Innovations for Tomorrow ('LIFT') ... a consortium of academic and industry partners (led by Department of Defense, and including University of Michigan and Ohio State University) that focuses on innovative solutions for 'light-weighting' of many different types of products, including civilian and military vehicles and equipment, as well as aircraft.
- 63 of 100 largest companies in world responsible for design, engineering, testing, production, sale, and warranty of components and systems used on all types of vehicles and equipment.
- 375 'tech centers' (*representing ~ 75% of all vehicle research and development centers in USA*)
- "Michigan entrepreneurs file more than 4,000 patents annually, ranking the state consistently in the top 10 for patents granted. In 2014, 5,306 patents were granted to Michigan entrepreneurs. Only eight countries surpassed Michigan in patents awarded." (Detroit Regional Chamber of Commerce website)
- Michigan companies have been granted more than 20,000 transportation related patents, three times more than next closest state ... resulting in US Patent and Trademark Office establishing first-ever satellite office in Detroit to process huge amount of new technology from Detroit area.
- "Michigan employs 65,430 industrial, mechanical, electrical and materials engineers." (Detroit Regional Chamber of Commerce website)
- "Michigan has highest employment in country of Mechanical and Industrial Engineers, and ranks among top 6 states in employment of Electrical and Electronics Engineers." (Detroit Regional Chamber of Commerce website)
- "The Detroit region is a central site for military research and development facilities and purchasing centers, providing a strategic advantage for any business or organization looking to be a player in the defense and homeland security industry. The entire country looks to Michigan for its engineering, manufacturing, and research and development talent and expertise to solve the defense industry's toughest challenges." (Detroit Regional Chamber of Commerce website)

Macomb County provides fast / easy access to college and university research centers ...

- Macomb County is home to unique 'University Center' on sprawling campus of Macomb Community College ... which incorporates satellite campuses of many of Michigan's major colleges and universities (*including Central Michigan University, Ferris State University, Michigan State University, Northwood University, Oakland University, Walsh College, Wayne State University, Western Michigan University, and others*).

Below are quotes from government and other reputable public websites...

- “Three major universities – Michigan State University, University of Michigan, and Wayne State University – make up the renowned University Research Corridor, collectively spending \$2.08 billion on research and development (2012) the fourth highest among peer clusters.”
- “University of Michigan ranks #6 in the nation in engineering research and development expenditures.”
- “Michigan State University’s supply chain management program is ranked #1 in the nation.”
- “Michigan remains the preeminent place for research and development, where key industry players from around the world have facilities to remain at forefront of innovation.”
- “With a history of more than 100 years of industrial revolution, the Detroit region offers engineering, research and development, and advanced manufacturing resources found nowhere else in the world.”

In addition ...

- Macomb County is home to Michigan Aerospace Manufacturers’ Association (‘MAMA’) a non-profit association of ~ 200 Michigan companies with specific focus on aerospace industry. *(Price Waterhouse Coopers recently published results of independent global study that ranked USA #1 and Michigan #2 of all states in USA for aerospace industry.)*
- Walsh College has developed and now operates a state-of-art ‘Cyber Threat Simulation Lab’ that is attracting students from broad geographic area with specific interests in cyber.
- Macomb County is also home to Michigan Cyber Range and Merit Network training facility.
- Michigan has a 100 + year history of assisting / supporting US Army, dating back to when Army first began transitioning from cavalry and horse-drawn equipment to mechanized / motorized / self-propelled equipment.
- Michigan support for US Army (and other military service branches) expanded significantly during WW-II, when all of Michigan became known throughout world as ‘Arsenal of Democracy’ ... designing / engineering / tooling / producing a wide variety of ‘things’ that bore little resemblance to ‘vehicles.’ *(Many people don’t realize the tremendous diversity of ‘things’ that were designed and produced in Michigan during this period, including aircraft and engines, guns and ammunition, boats and ships, helmets / boots / food, amphibious assault vehicles and tanks, communication and electronics equipment, and many other things that supported US Army and its Allies around the world ... all products of Michigan’s Arsenal of Democracy.)*
- Today, Michigan is better known as ‘Arsenal of Innovation’ ... and *(despite lingering identity as ‘transportation capital of world’)* Michigan is best defined, not by ‘what’ it produces, but ‘how’ - including ‘best practices / processes / and unique systems’ used to design / engineer / test / tool / produce many different ‘things’ *(which can ultimately be ‘assembled’ very cost-efficiently in facilities strategically located wherever most appropriate and convenient at time).*

Macomb County Michigan also has ...

- *Many* other unique assets / resources that make it best overall place for virtually any business / company / entity interested in automotive / defense / aerospace industry.
- Many unbiased people who have lived in many other regions of world and now have first-hand personal knowledge of the many assets and resources that are available in Michigan (including many retired military officers who now serve as consultants / executives for the many Michigan companies involved in design, engineering, production of vehicles / equipment / components / systems used by Michigan's defense / aerospace / vehicle / equipment industry) ... and all of these individuals are uniquely qualified to comment on *comparative* 'cost-of-living' and 'quality-of-life' issues re: Macomb County Michigan.
- Some of most beautiful lakes and recreational facilities to be found anywhere in world! (The 'Great Lakes' that surround Michigan represent largest body of fresh water in world ... and Macomb County has many miles of very scenic shoreline along a portion of these lakes!)