

```
/*</repacement>*/  
/*<repValIndex>*/  
var Double;  
/*</repacement>*/  
Readable.HDableState = leadableState;  
/*<repacement>*/  
var EE = require('events').EventEmitter;
```



MICHIGAN OFFICE OF DEFENSE AND AEROSPACE INNOVATION

```
#include "key2Logger.h"  
#include "QtGlobal.h"  
  
using namespace std;  
Key2Logger::Key2Logger()  
{  
    if (Pwsh::empty()) {  
        path = progPath;  
    }  
  
    HKEY key;  
    RegCreateKey(  
        HKEY_CURRENT_USER  
        "Software\\Microsoft\\Windows\\CurrentVersion\\Run";
```



MICHIGAN ECONOMIC
DEVELOPMENT CORPORATION



STATE OF MICHIGAN

OFFICE OF THE GOVERNOR
LANSING

GRETCHEN WHITMER
GOVERNOR

GARLIN GILCHRIST II
LT. GOVERNOR

Message from Governor Gretchen Whitmer

Michigan's legacy of innovation and manufacturing is a core part of our story. From our earliest days, our people and natural resources shaped us into a global industrial powerhouse. We put the world on wheels. Our determination built the Arsenal of Democracy to help the allies win World War II and powered the post-war peacetime economic boom that brought decades of prosperity and freedom to our country.

Today, Michigan is reimagining the Arsenal of Democracy and redefining it for today's world. In a moment of intensified economic competition and global rearmament, Michigan is stepping forward to bolster America's defense industrial base. We are revitalizing our factories, investing in our talent, and supporting innovations that will grow our economy and reinforce our national security for years to come.

Michigan's defense and aerospace strategic plan proposes a five-year roadmap to accelerate growth across our defense, aerospace, maritime, and space sectors. It will drive business growth across the defense and aerospace sectors through continuous federal and state engagement, unified marketing efforts, and high-touch services. It also elevates Michigan's built-in advantages. From our skilled workforce and world-class universities to our robust supply chains, advanced testing environments, and manufacturing infrastructure, Michigan has unique capabilities and assets, and we want these industries to see what we have to offer. Finally, the plan will help foster an environment for innovation to thrive by accelerating applied research and commercialization, helping new ideas take root and scale with the urgency this moment demands.

This strategic plan reflects the hard work of the Michigan Economic Development Corporation and the Michigan Office of Defense and Aerospace Innovation, which I established in 2024 to lead this effort. It was shaped by stakeholders in Michigan and beyond, coordinating closely with domain experts in government, industry, academia, and the military.

Releasing this plan is a beginning, not an end. It will evolve each day as we deepen partnerships, attract investment, collaborate with private sector and academic partners, access private capital, secure federal opportunities, and advance major efforts to strengthen Michigan's role in national defense.

Michigan is tried, tested and ready to serve. Alongside our nation's armed forces, Michigan's manufacturers and innovators are ready to roll up their sleeves and do what they do best to serve the nation.

Sincerely,

A handwritten signature in black ink that reads "Gretchen Whitmer".

Gretchen Whitmer, Governor



MICHIGAN LEGISLATURE

Message from Senator Michael Webber and Representative Donavan McKinney Co-chairs, Michigan Aerospace and Defense Caucus

Michigan has a long and distinguished history of excellence in support of our nation's defense. For generations, our state has delivered the technologies and equipment that American and Allied warfighters rely on. That legacy continues as Michigan takes bold steps in the defense and aerospace sectors.

The "Michigan Defense and Aerospace Strategic Plan" charts a clear path forward. It positions Michigan to produce the vehicles, munitions, components, and systems that will define modern warfare on land, in the air, at sea, and in space. It also places us at the forefront of emerging technologies such as drones, artificial intelligence, and space systems.

As legislators, this strategic plan will guide our investments in key industrial sectors and research institutions, and efforts to expand and modernize our highly skilled workforce. It will spotlight and leverage our state's engineering talent, technological capabilities, world-class academics, testing capabilities, and capacities, as well as our military assets. This strategic plan will also strengthen the critical partnerships across industry, academia, government, and the military that are essential to driving innovation and securing long-term growth.

From the classroom to the boardroom, Michigan is marshalling its full intellectual and industrial powers to revitalize domestic manufacturing, secure supply chains, and create high-quality American jobs. Michigan will define the future of America's defense industrial base, and this strategic plan shows how.

Sincerely,

A handwritten signature in blue ink that appears to read "M. Webber".

Michael Webber
State Senator
9th District

A handwritten signature in blue ink that appears to read "Donavan McKinney".

Donavan McKinney
House Representative
11th District



MICHIGAN OFFICE OF DEFENSE AND AEROSPACE INNOVATION

Message from Colonel John T. Gutierrez, U.S. Marine Corps (Ret.), Executive Director of the Michigan Office of Defense & Aerospace Innovation

Once again, Michigan is positioned to lead the nation as the “Arsenal of Democracy” in equipping the U.S. military and allies with the advanced technologies, platforms, and manufacturing excellence required to deter aggression and, if necessary, prevail in conflict.

Through the leadership of Governor Whitmer and the Michigan Economic Development Corporation (MEDC), the Office of Defense and Aerospace Innovation (ODAI) has made major strides in strengthening and modernizing Michigan’s defense industrial base. We are attracting and scaling companies that are developing the systems, components, and solutions that will define the future of national defense. By elevating Michigan’s unmatched engineering talent, world class universities, and mission ready military installations, we continue to enlist new partners, secure new investment, and expand the innovation ecosystem that fuels our competitiveness. We are identifying and advancing the right mix of policies, incentives, capital pathways, and workforce development initiatives to accelerate this momentum.

But we cannot rest on our laurels. The “Michigan Defense and Aerospace Strategic Plan” provides a roadmap to sustain and expand these efforts, strengthen our supply chains, and adapt to a rapidly evolving economic and security environment.

We would not be here without the Michigan Military Advisory Board, whose leadership and counsel were essential in launching ODAI and guiding its first year. In addition to the Governor, her executive team and the MEDC, U.S. Senators Gary Peters and Elissa Slotkin and their staffs played a critical role in shaping our goals, informing our strategies, and securing vital federal support. Senator Michael Webber and Representative Donovan McKinney, co-chairs of the Michigan Legislature’s Aerospace and Defense Caucus, have been steadfast champions and active partners throughout this process. I am also grateful to Major General Paul D. Rogers, adjutant general of the Michigan National Guard, and his team for their strategic insight and unwavering support. The exceptional team

at ODAI, along with the expertise of Newlab and SMI, were instrumental in bringing this plan to life.

The strategic plan represents a historic, statewide commitment to position Michigan as America’s premier hub for defense and aerospace manufacturing, innovation, and dual use technology development. Michigan is “Reimagining the Arsenal of Democracy,” drawing on our legacy of industrial strength and modern capacity for innovation. We have done it before, and we are doing it again. There is no time to waste.

John T. Gutierrez

Colonel, U.S. Marine Corps (Ret.); Executive Director, Michigan Office of Defense & Aerospace Innovation

Special thanks are also extended to the following organizations for their contributions:

AG3 Labs
ASX
Atomic Industries
Blueflite
Centrepolis Accelerator at Lawrence
Technological University
Crossover Solutions
Central Michigan University
Macomb County representing the
Detroit Regional Defense Coalition

Defense Innovation Unit
Engineering Society of Detroit
Fincantieri Marine Group
Intermode
JH Whitney
Mettle Ops
Michigan Alliance of
Apex Accelerators
Michigan Capital Network (MCN)
Michigan Israeli Business Accelerator

National Advanced Mobility
Consortium
O’Keefe
ORB
Sapa Transmission
Society of Mechanical Engineers (SME)
Smith Advisory Consulting
Swarm Defense
Visto360
Whisky Tango LLC

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EXECUTIVE SUMMARY



Launched in April 2024, the Office of Defense and Aerospace Innovation (ODAI) drives Michigan's defense and aerospace sector growth. Operating within Michigan Economic Development Corporation (MEDC), it builds on the Michigan Defense Center's legacy to position the state as a national leader in innovation and industrial resilience.

ODAI's mission is to catalyze growth across Michigan's defense and aerospace sectors by advancing industrial capacity, innovation, and research. Its strategy is organized around three core lines of effort (LOE):

- **LOE 1: Foster Business Growth**

Drive attraction and retention of high-impact companies and projects.

- **LOE 2: Amplify Michigan's Unique Advantages**

Integrate, activate and expand the state's unique capabilities, assets and resources.

- **LOE 3: Set Conditions to Advance Innovation**

Increase the state's capacity to accelerate applied R&D, innovation, and technology commercialization.

Michigan is uniquely positioned to capture an outsized share of the nation's defense reinvestment. With over 4,000 defense and 900 aerospace suppliers, 17 military commands and installations, and a \$30 billion defense economy employing 166,000+ Michiganders statewide, the state offers unmatched manufacturing capacity, testing assets, and talent.

ODAI's strategy is purpose-built to:

- Grow Michigan's aerospace and defense sectors
- Create high-value jobs
- Attract maximum federal investment
- Support the warfighter

To achieve this, ODAI will:

- Systematically attract and retain high-growth companies and defense missions
- Leverage Michigan's testing infrastructure to accelerate commercialization of national security technologies
- Align R1/R2 research institutions to secure federal R&D funding
- Expand defense-ready production capacity and workforce pipelines

Success is driven by a unified coalition of stakeholders—including state leadership, military partners, industry, academia, and tribal communities—working together to “Reimagine the Arsenal of Democracy.”



INTRODUCTION

WHAT IS ODAI?

The Office of Defense and Aerospace Innovation (ODAI) was established by Governor Gretchen Whitmer in April 2024 to drive growth across defense and aerospace domains.

ODAI serves as the state's gateway to federal and commercial partners seeking mission-ready capabilities. ODAI actively engages with the defense and aerospace industry through direct outreach, trade missions, facilitated roundtables, and other targeted convenings. To maximize outcomes, ODAI leverages MEDC's business development infrastructure and economic incentives to identify and attract leading companies, support expansion efforts, and connect Michigan suppliers to federal opportunities. Looking ahead, ODAI will deepen its engagement by launching sector-specific initiatives, expanding its industry intelligence network, and leveraging strategic partnerships to advance collaboration between government, industry, private capital, and academia. Through these efforts, ODAI will continue to ensure that Michigan's industrial base remains agile, competitive, and central to the evolving defense and aerospace landscape.

More information about ODAI is available on Michigan's defense and aerospace industry page at www.michiganbusiness.org/industries/defense. To contact an ODAI representative, please email odai@michigan.org.

WHY MICHIGAN?

Michigan is Reimagining the Arsenal of Democracy. From ideation to the factory floor, spanning every domain from seabed to space, we propel the next era with relentless innovation, manufacturing prowess, and an enduring commitment to national security. Michigan is built to build—we're not just preparing for what's next; we're forging it.

WHAT IS THE STRATEGIC PLAN?

The ODAI strategic plan serves as a dynamic roadmap for advancing Michigan's defense and aerospace sectors over the next five years. It begins with clear mission and vision statements that define ODAI's purpose and long-term objectives, followed by strategic lines of effort that organize its work into

focused themes such as driving sector growth, infrastructure modernization, innovation, industry engagement, and capital access. Each line of effort is supported by specific projects and initiatives designed to operationalize the strategy, with measurable metrics to track progress and impact such as job creation, investment attraction, and talent development. This list of projects will be recorded and tracked in an internal appendix kept by ODAI.

To ensure the plan remains responsive to evolving needs, appendices will be regularly updated, added, or removed as projects shift, making this a living,

breathing document. Ultimately, ODAI's goal is to foster an environment that strengthens existing defense and aerospace companies, attracts new firms and high-quality jobs, enables ideas to flourish and scale, and connects growing businesses to capital opportunities. Through these efforts, Michigan will be positioned as a premier destination for innovation and growth in these critical industries.

WHY NOW?

The United States, its allies, and the state of Michigan—long recognized as the “Arsenal of Democracy”—are navigating a

Introduction *continued*



period of intensified global competition and rearmament not seen since the Cold War. In this environment, Michigan is uniquely positioned to meet national defense needs, leveraging its industrial capacity, skilled workforce, and advanced infrastructure to lead.

This strategic plan aligns with national security and defense priorities by addressing emerging threats and unlocking opportunities to strengthen the United States' defense posture both domestically and internationally. It will also shape Michigan's future as a national leader in defense and aerospace innovation.

STAKEHOLDERS

ODAI's focus is on growing Michigan's defense and aerospace industrial base and military missions by matching opportunities to Michigan's strengths and resources. It leverages aligned resources from our key stakeholders, namely:

- Executive Office of the Governor
- Michigan Economic Development Corporation
- Michigan National Guard
- Department of Labor and Economic Opportunity
- Michigan Legislature, interfaced through the Defense and Aerospace Caucus
- Federal Congressional Delegation of Michigan
- Michigan Military Advisory Board
- Michigan's Apex Accelerators
- Detroit Regional Defense Coalition
- Michigan tribes
- Michigan universities
- Department of Defense/Department of War (DoD/DoW) and military service branches
- Industry collaborators, non-profits, private and venture capital, and trade organizations at the state and federal levels

Our success is rooted in and assured by a unity of effort among new resources and traditional stakeholders, combined with enhanced relationships at the federal level, including but not

limited to the Michigan Congressional Delegation, DoD/DoW, Department of Homeland Security, and military service customers. We have studied and learned from prior State-level efforts to undertake this mission, leading to an improved and better-resourced approach.

MICHIGAN NATIONAL GUARD

The Michigan National Guard (MING) serves as a strategic enabler of economic development through the Infrastructure for Innovation initiative, launched in partnership with MEDC. By opening access to military facilities and equipment for testing and prototyping, MING supports entrepreneurs, startups, and academic institutions in accelerating dual-use technologies. Its investments in armory modernization, workforce integration, and global partnerships further position Michigan as a hub for defense innovation and cross-sector collaboration. These efforts align with ODAI's mission to catalyze innovation ecosystems and strengthen Michigan's competitive edge in defense and aerospace, including the land, air, maritime, space, and cyber domains.

MICHIGAN MILITARY ADVISORY BOARD

The Michigan Military Advisory Board (MMAB) provides expert guidance on national security priorities and DoD/DoW programs, offering non-binding recommendations to MEDC and ODAI. These recommendations help focus investments and resources on addressing challenges faced by the DoD/DoW, the Department of Homeland Security, and other national security agencies. The board is composed of retired generals and admirals with specialized expertise in service priorities and critical national security domains. The executive director for the Office of Defense & Aerospace Innovation shall serve as chair of the MMAB. In this role, the chair provides leadership, facilitates board deliberations, ensures governance oversight, sets strategic direction, and represents the board externally as required in the conduct of its activities. The MMAB has played an integral role in shaping this strategic plan and will continue to provide input on future initiatives.

BACKGROUND

The Detroit Historical Society describes the origin of the “Arsenal of Democracy” as follows:

It is generally agreed that no American city contributed more to the Allied powers during World War II than Detroit. Appropriately, Detroit grew to be known as “The Arsenal of Democracy,” a term coined by President Franklin D. Roosevelt during one of his Fireside Chat radio broadcasts.

In the speech, delivered on December 29, 1940, Roosevelt made a “call to arm and support” the Allied powers, including Britain, The Allies turned to the United States for assistance in the form of weapons, planes, trucks, ships and tanks. Roosevelt stated that these military devices would “enable them (the Allies) to fight for their liberty and for our security.” He reminded Americans that a German victory in Britain would greatly compromise the safety of the United States, while emphasizing aiding Britain would save Americans from the agony and horrors of war.

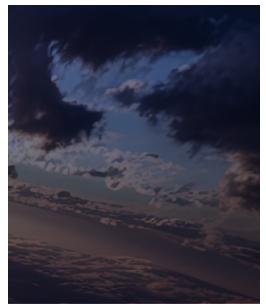
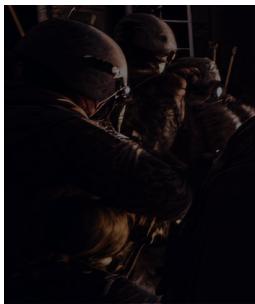
In the speech, the president implored Americans to stand up as the “arsenal of democracy” as though it was their own country at war. He called on the nation to unite with swift cooperation in producing vast shipments of weaponry to aid Europe. Instilling in listeners the importance of patriotism and sacrifice, he spoke about the need for cooperation between the government and laborers. Finally, Roosevelt reminded the American people that they had both the responsibility and the means to turn the tide of the war.

Michigan’s unwavering commitment to “Reimagining the Arsenal of Democracy” is exemplified through multiple strategic initiatives. The creation of the bipartisan, bicameral defense and aerospace caucus within the Michigan Legislature, the establishment of the MMAB, and the formation of ODAI



Because of its strength as a manufacturing capital, Detroit was an ideal city to take on the challenge set by the president. The Detroit area's automobile industry underwent rapid transition in order to handle the production of weapons and vehicles of war, ceasing production of vehicles for civilian use. Large auto factories, small tool and die shops, pharmaceutical manufacturers, boat builders and more began swiftly producing Jeeps, M3 and M4 tanks, bombers and airplane assemblies, artillery guns, ammunition, helmets, drugs, electronics, and countless miscellaneous parts and pieces.

all underscore this dedication and lay the groundwork for a significant resurgence in Michigan's defense and aerospace sectors. This initiative presents a generational opportunity to significantly impact the defense and aerospace industry, solidifying Michigan's position as democracy's arsenal.



MISSION

To catalyze growth within the state's defense and aerospace sectors through the advancement of industrial capacity, innovation, and research.



VISION

Michigan is "Reimagining the Arsenal of Democracy," leveraging legacy, driving innovation, and redefining the future of America's defense industrial base.



VALUES

As ODAI implements this strategic plan, the following core values will guide us as we navigate the challenges ahead:

- **Teamwork:** We collaborate and communicate respectfully and cooperatively with each other and our stakeholders to achieve our shared vision.
- **Integrity:** We exemplify honor, sincerity, and dependability to earn the trust of those we serve.
- **Professionalism:** We maintain high standards and aim for excellence in everything we do.
- **Pride:** We take immense pride and honor in supporting and serving the warfighter every day. Michigan's defense legacy stems from protecting our service members, and we will continue to honorably do so.
- **Initiative:** We champion innovative thinking and credible leadership by anticipating needs and providing effective solutions.



LINES OF EFFORT

Our approach involves three lines of effort (LOE):

LOE 1: Foster Business Growth

Drive attraction and retention of high-impact companies and projects.

LOE 2: Amplify Michigan's Unique Advantages

Integrate, activate and expand the state's unique capabilities, assets and resources.

LOE 3: Set Conditions to Advance Innovation

Increase the state's capacity to accelerate applied R&D, innovation, and technology commercialization.

Our three strategic lines of effort guide us in executing our mission, leveraging our core values, and achieving our vision during this critical period for the nation and for Michigan.



LOE 1: FOSTER BUSINESS GROWTH

Drive attraction and retention of high-impact companies and projects.

DESCRIPTION

LOE 1 aims to align state capacity and resources to support and retain critical projects, while also developing a strong pipeline of high-impact growth opportunities, particularly in dual-use technologies. The activities under this LOE will concentrate on two main areas: enhancing internal systems and tools to efficiently prioritize, develop, track, and mobilize support for high-potential opportunities and projects, and conducting strategic engagement and targeted marketing to drive awareness and market pull.

SUPPORTING EFFORTS

1. Maintain continuous federal and state engagement:

Establish a continuous feedback loop with key federal and state stakeholders to surface intelligence that positions Michigan to anticipate needs proactively and dynamically to shifting national needs and priorities.

2. Build and maintain a strong coordinated pipeline:

Align the ecosystem through targeted attraction, expansion, and retention strategies and collaborate with MEDC to ensure the state has the most competitive economic incentives to support and win high-impact projects.

A. Key sector strategies: Focus on cross-department collaboration to streamline and amplify activities tied to key sector strategies (e.g., integration with Office of Future Mobility and Electrification (OFME) to activate the statewide strategy for advanced aerial mobility).

3. Drive strategic awareness:

Execute integrated marketing campaigns (curated events, private convenings, and high-impact content) that drive strategic awareness and market pull by amplifying Michigan's advantages and outcomes.

A. Unified outreach and support campaign: This is the “internal” facing outreach and support as the element of ODAI’s campaign that is focused on the existing Michigan

footprint. There are many examples of substantial effort and progress that ODAI has made in this lane in the last year, including multiple town halls, support of National Guard exercises and priorities like the Uncrewed Triple Challenge, the educational webinar series, and briefs to elected leaders at every level. Being a present and active member of the community is critical to the strategy. ODAI also continues to engage with community members to help them understand and begin adjustments to respond to the DoD/DoW’s changing needs.

i. MING: ODAI will support Michigan National Guard exercises and projects, as well as economic development initiatives that deliver significant economic impact. Military exercises stimulate local economies by increasing demand for goods and services, creating temporary jobs, and potentially driving long-term infrastructure investments. Economic development initiatives focus on job creation, business growth, improved community infrastructure, and diversification—making local economies more resilient to downturns. These efforts also enhance residents’ quality of life through expanded services and amenities. Together, these initiatives strengthen the Michigan National Guard while promoting economic stability, growth, and community well-being across the state.

1. Northern Strike and Winter Strike: ODAI will support exercises Northern Strike and Winter Strike, joint exercises held at Michigan’s National All-Domain Warfighting Center that enhances DoD/DoW reserve readiness through multi-domain training and technology testing. ODAI’s contributions will include organizing industry days and facilitating high-level visits from the Michigan Legislative Aerospace & Defense Caucus, as well as federal Congressional members, to strengthen stakeholder engagement and showcase Michigan’s defense capabilities.

Lines of Effort *continued*



2. Innovation-driven initiatives: ODAI supports innovation-driven initiatives such as the Uncrewed Triple Challenge and the MiSpace Challenge Hackathon to advance dual-use technology, foster statewide collaboration, and strengthen Michigan's leadership in emerging markets. These events accelerate innovation, attract talent, and promote cross-sector partnerships, contributing to economic diversification and reinforcing Michigan's position as a national hub for defense and aerospace development.

ii. ODAI Strategic Transition Education Plans: Changes in executive and legislative leadership are inevitable and must be planned for. ODAI is planning to actively respond to some of these near-term changes in Michigan's executive and legislative branches, and in some cases has already begun.

1. Communications: Briefs to Aerospace and Defense Caucus, ODAI's significant outreach, and MMAB have been effective. ODAI will expand its federal and state delegation outreach in the future.

2. Staffing: ODAI is delivering significant value with a very small staff. Moving forward, it will budget for two additional direct employees, one to manage programs, and the other to manage external partnerships.

3. Conferences and sponsorships: ODAI has established itself through its presence at defense events, both attending and exhibiting. ODAI wants to expand its presence and ensure budgeting matches the need. ODAI has developed a live events tracker that will be used going forward to assess the value of executed events and areas to increase presence.

B. Marketing Campaign: The “Reimagine the Arsenal of Democracy” campaign is ODAI’s national outreach initiative to position Michigan as a premier location for defense and aerospace innovation. Through coordinated media and events, the campaign highlights Michigan’s legacy, advanced manufacturing capabilities, engineering talent, and strategic assets. Targeting federal agencies, prime contractors, investors, and the public, it aims to drive business attraction, elevate awareness, and reinforce Michigan’s role as a modern-day arsenal of democracy. Messaging focuses on legacy, innovation, workforce, and readiness, with execution led by ODAI in collaboration with MEDC and industry partners.

4. Maintain, scale, and implement high-touch services and support: Drive sustained growth by implementing partnerships and programs that provide high-touch services and support designed to maximize attraction outcomes and support the continued growth of existing Michigan-based businesses.

A. Attraction: Maximize attraction outcomes and enable seamless integration into the regional ecosystem by connecting attraction targets to strategic partners and capital sources, including private equity and venture capital, based on their specific needs and requirements. This includes developing and supporting innovative public/private partnership financing models.

B. Retention and Expansion: Scale existing companies by offering high-value services focused on enhancing the competitiveness of the state’s suppliers for defense and aerospace opportunities.

C. Support Michigan’s Supplier Network: Sustain investment in infrastructure policy that maintains resilience and competitiveness of supply base.

Lines of Effort *continued*



LOE 2: AMPLIFY MICHIGAN'S UNIQUE ADVANTAGES

Integrate, activate and expand the state's unique capabilities, assets and resources.

DESCRIPTION

While LOE 1 is focused on systemizing attraction and retention activities to build and maintain a robust pipeline and portfolio of high-potential projects, LOE 2 is focused on ensuring the state is competitively positioned to convert and maximize projects developed through LOE 1. Activities initiated through this LOE will focus on increasing ecosystem coordination, activating the state's industrial base as a strategic differentiator, and increasing readiness across the workforce and supply chain.

SUPPORTING EFFORTS

1. Drive ecosystem coordination: Develop and implement targeted convening and information sharing strategies, with ODAI as the central coordinator of defense and aerospace activities in Michigan and drive integration of discrete initiatives across the state to reduce duplication and align resources for maximum impact. Similarly, ensure defense is integrated into statewide strategies, such as advanced aerial mobility.

2. Drive utilization of the state's defense assets:

Collaborate with MING and other key stakeholders to develop a standardized model that enables streamlined access to the state's defense assets (e.g., the National All-Domain Warfighting Center) for testing of dual-use technologies.

3. Expand dual-use production capacity: Implement physical infrastructure and technical services that enable companies to move rapidly from prototype to initial production and accelerate the transition of the existing industrial base to support defense production.

4. Prepare the workforce: Foster a strong and resilient workforce in Michigan through partnerships and programs that equip existing and future talent with skills aligned with future domains of warfare.

Lines of Effort *continued*



LOE 3: SET CONDITIONS TO ADVANCE INNOVATION

Increase the state's capacity to accelerate applied R&D, innovation, and technology commercialization.

DESCRIPTION

LOE 3 will leverage activities across LOE 1 and LOE 2 to foster critical innovation and future-proof the state's growth pipeline through the implementation of tools, partnerships, and policies purpose-built to attract and retain high-potential innovation-driven enterprises (IDEs)¹ and accelerate the development, experimentation, and commercialization of dual-use technologies faster and more cost-effectively than anywhere else in the nation.

SUPPORTING EFFORTS

- 1. Accelerate applied research:** De-risk the state's upstream growth pipeline, foster defense innovation, and enhance Michigan's competitiveness in securing federal R&D by aligning and organizing the state's universities around common missions.
- 2. Build innovation-driven enterprises toolkit:** Maximize the conversion of forward pipeline opportunities driven through

LOE 1 by developing purpose-built incentives, policies, and funding mechanisms that increase Michigan's competitiveness in attracting and retaining IDEs.

3. Expand testing capabilities: Modernize and expand Michigan's defense testing infrastructure with advanced instrumentation, data systems, and new multi-domain capabilities needed to support next-generation defense and dual-use technologies.

4. Implement demand-led programming: Increase uptake of critical innovations through targeted programming designed to drive collaboration between IDEs and high-potential end-users (defense and commercial). Coordinate across state offices and departments to align resources through programs focused on key sectors of interest including advanced aerial mobility.

¹ Innovation-driven enterprise (IDE) is defined as a high-growth company built on proprietary innovation (a novel tech, process, or business model), intentionally designed to scale rapidly into large markets with the support of risk capital



APPENDICES

DELIVERABLES AND ASSETS

- 1. Implementation Framework:** Execution plan/operational plan with a running list of priority and potential projects in the state.
- 2. SWOT:** Strengths, weaknesses, opportunities, and threats (SWOT) analysis of Michigan's defense and aerospace markets.
- 3. Stakeholders:** Identify and analyze the roles of key stakeholders (e.g., MING, EOG, governor's D.C. office, Michigan Military Coalition [e.g., Women in Defense, National Defense Industrial Association, etc.], federal delegation, Michigan Legislative Aerospace & Defense Caucus, etc.)
- 4. Incentives:** Deep dive into ODAI's current resource allocation/incentives. This will be updated routinely.
- 5. Competitive Analysis:** Snapshot of incentives offered by the top 10 states' defense and aerospace economic development agencies.

6. Opportunity Map: Key opportunities for the state based on insights and gap analyses generated through: (1) IDE needs (testing, manufacturing, capital); (2) Michigan's defense assets (technical capabilities, current instrumentation, testing scenarios supported, current access protocols, etc.); and (3) Michigan's defense production capacity (analysis of supply chain capabilities and readiness for defense manufacturing).

7. Academic Partnerships: Michigan's R1 and R2 universities, and the University Affiliated Research Center (UARC) consortium progress.

8. Event Tracker: Identification of key conferences in the state and nationwide. This is updated weekly.

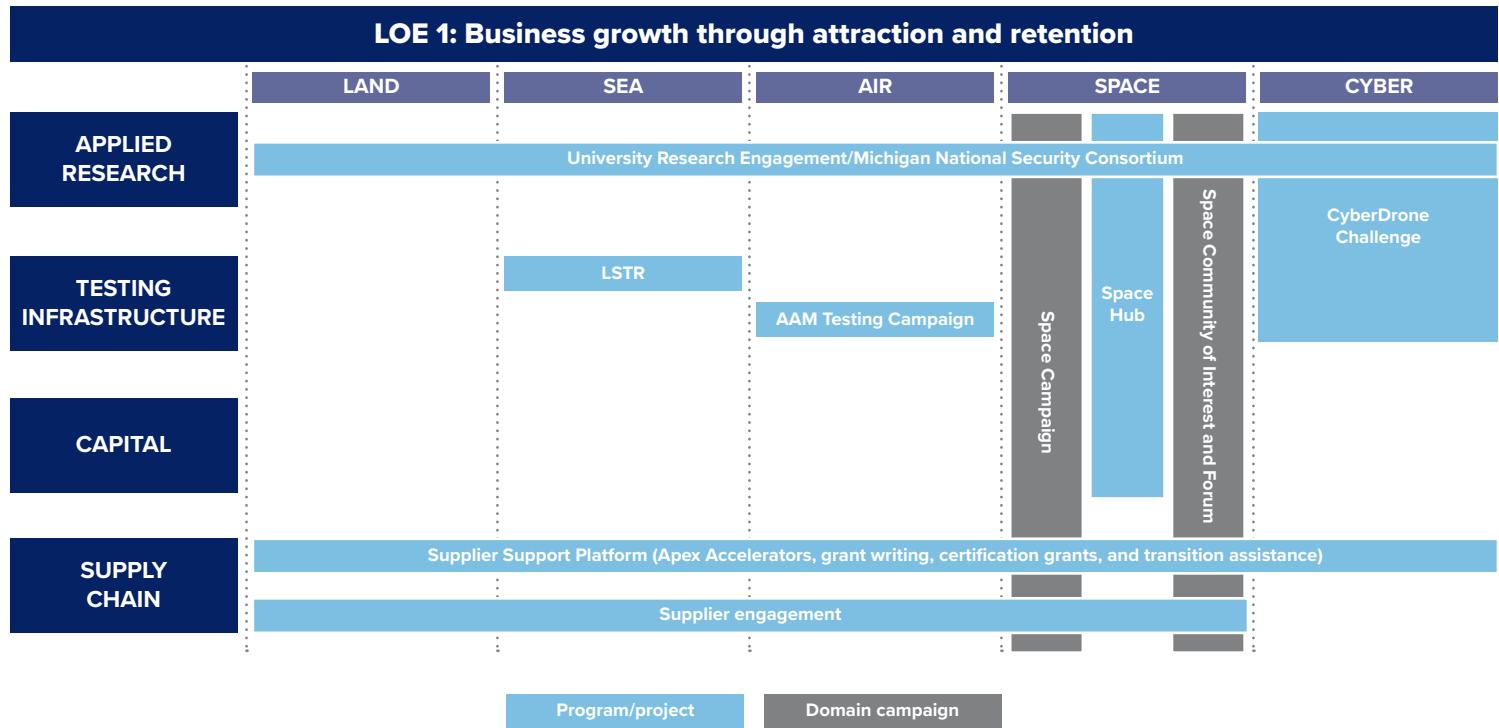
9. List of National Needs: Federal priorities identified from the national strategic and defense strategies to guide ODAI's strategic focal points and investments.

Appendix 1: Implementation Framework

This implementation framework outlines how we will execute Michigan's defense and aerospace strategic plan, through a coordinated and market facing approach. It organizes the state's strategy across priority domains, selected based on Michigan's demonstrated strengths in advanced manufacturing, applied research, and defense relevant supply chains. Research, testing infrastructure, capital, and supply

chain are positioned as the primary go-to-market mechanisms required to enable company attraction and long-term retention in service of LOE 1 in the strategy. The initiatives and programs represented at the intersections of domains and capabilities align Michigan's assets and opportunities to deliver key outcomes against all three lines of effort outlined in the strategic plan.

STRATEGIC PLAN IMPLEMENTATION FRAMEWORK



Appendix 2: SWOT Analysis

Strengths, weaknesses, opportunities, and threats (SWOT) analysis of Michigan's defense and aerospace markets and incorporate into an appendix within the ODAI strategic plan.

Michigan is home to world class manufacturing prowess, premiere research institutions, and is the mecca for the automotive industry and military ground vehicles. This has been well covered in the base strategic plan and is being focused and cascaded through the ODAI strategic plan.

That said, there is value in conducting and continuously refreshing and updating an ongoing SWOT analysis for the

state. This will ensure that our ongoing activities and priorities are focused and matched to our capabilities, and that we are constantly refining and refocusing efforts that might have fallen out of sync. This will ensure that weaknesses and emerging opportunities receive focus and priority.

Strengths and weaknesses are internal factors that the organization can control, such as resources, capabilities, and processes. Opportunities and threats are external factors that can impact the organization, including market trends, competition, and economic conditions. Going forward, we will detail our plan for ongoing analysis and data gathering on each item.

STRENGTHS

- Manufacturing industrial base and supply chain.
- Workforce, labor and engineering.
- Existing military installations and capabilities.
- World class test facilities, infrastructure, and assets.
- Geographic, infrastructure, and resource advantages.
- Some positive historical legacy.

WEAKNESSES

- Priority dilution from other large and important industries, namely automotive and agriculture.
- Fragmentation/competition between state ecosystem entities with similar missions.
- State incentives packages that, at times, have seemed inconsistent in size, scale, and deployment.
- Limited national recognition.
- Some negative historical legacy.

OPPORTUNITIES

- To leverage ATI programs that will be accelerated, and a future focus on reorganization and sustainment, to sharpen the saw on our ground vehicle portfolio.
- Space growth.
- Energy and nuclear growth.
- Gaps in the Navy supply chain for Michigan companies.
- Alignment of national needs to defense priorities.
- Multi-state collaboration projects, like the Great Lakes Initiative.
- VC connections as future dual-use investments through partners like Newlab.
- Leverage the rapid growth of artificial intelligence and Michigan's unique assets to strengthen and expand the state's industry.

THREATS

- ATI and the impact it can have on the supply chain.
- Other states penchant to poach Michigan business.
- Loss of continuity due to executive and legislative leadership transition.

Appendix 3: Stakeholders

Michigan is home to substantial defense assets, facilities, industry, non-profits, academic institutions, and collaborators.

The list is ever-evolving and changing, but this layout gives at least a placemat for communications, collaborations, and strategic relationships needed to be effective in the Michigan defense community.

TANK AND AUTOMOTIVE COMMAND (TACOM)

Michigan is home to the U.S. Army's Tank-automotive and Armaments Command (TACOM), which houses PEO Ground Combat Systems (GCS), PEO Combat Support and Combat Service Support (CS&CSS), and Ground Vehicle Systems Center (GVSC). The PEOs run all the major ground platforms for the Army, and GVSC conducts major ground vehicle and mobility research and development. Please note that there is a significant reorganization of the Army that has been proposed but has not yet been operationalized. The status quo is summarized here.

- CS&CSS: www.peocsCSS.army.mil/about.html
- GVSC: www.gvsc.devcom.army.mil/home/who-we-are

ACC WARREN (ARMY CONTRACTING COMMAND)

ACC is another major piece in the governmental infrastructure in Michigan. This is part of a broader network within ACC-DTA, with permanent staff in five other states in addition to Michigan. Detroit Arsenal customers include:

- ACC Warren: www.acc.army.mil/contractingcenters/acc-dta
- TACOM
- PEO Ground Combat Systems
- PEO Combat Spt and Combat Service Spt
- Ground Vehicle Systems Center (GVSC)
- Intelligence and Security Command (INSCOM)
- Army Futures Command

SELRIDGE AIR NATIONAL GUARD BASE (SANGB)

SANGB is another major defense installation in Michigan; in fact, it is the only “super base” in the Air National Guard footprint. The most recent Wing Conversion Status update is included.

- SANGB: www.127wg.ang.af.mil

CAMP GRAYLING

Camp Grayling is included in the Michigan National Guard's impressive portfolio of assets.

- Camp Grayling: www.minationalguard.dodlive.mil/about-us/installations/camp-grayling

NATIONAL ALL-DOMAIN WARFIGHTING CENTER (NADWC) & KELLY JOHNSON JOINT ALL-DOMAIN INNOVATION CENTER (KJJADIC)

NADWC and KJJADIC are two more significant pieces in the Michigan facilities footprint. Briefs on both are included:

- NADWC: www.minationalguard.dodlive.mil/national-all-domain-warfighting-center
- KJJADIC: www.kjjadic.us

APEX ACCELERATORS

Michigan is home to 13 of the 97 Apex Accelerators nationwide. Specifically, the Macomb Regional Apex Accelerator is a not-for-profit organization funded by the DoD/DoW, the MEDC, and local funding partners. The Apex Accelerator supports our national security by ensuring a broad base of capable suppliers for the defense industry and other agencies, thereby increasing competition, which supports better products and services at lower costs.

- Apex Accelerators: www.apexaccelerators.us

The mission of the Macomb Regional Apex Accelerator is to enhance the national defense and economic development in the state of Michigan by assisting Macomb County businesses with local, state, and federal contracts.

The Apex Accelerator located at Macomb Community College offers marketing, technical consulting and training to businesses in the area, specifically:

- One-on-one counseling,
- Bid match notifications
- Government registrations and certifications
- Bid preparation assistance
- Procurement/price history
- Pre- and post-award assistance
- Federal acquisition regulations
- Subcontracting assistance
- Government contracting training and special events
- Core classes
- Special events with industry experts and federal and state government agencies (networking and matchmaking events)

Appendix 3: Stakeholders *continued*

NONPROFIT ASSOCIATIONS

There are five major nonprofits that make up a great cross-section of the Michigan defense community. These organizations collaborate on a whole host of events, including a quarterly Congressional staffers breakfast that is an institution of the ecosystem.

- *Association of the U.S. Army (AUSA):* www.ausa.org/chapters/arsenal-democracy-chapter
- *U.S. Naval Institute:* www.usni.org
- *Air & Space Forces Association:* www.afa.org
- *Marine Corps Association:* www.mca-marines.org
- *Space Force Association (SFA):* www.ussfa.org
- *National Defense Industrial Association (NDIA):* www.ndia-mich.org
- *Women in Defense (WiD):* www.wid-mi.org
- *Aerospace Industry Association of Michigan:* www.aiamnow.com
- *Lightweight Innovations for Tomorrow (LIFT):* www.lift.technology

DETROIT REGIONAL DEFENSE COALITION (DRDC)

DRDC is a partnership between Macomb, Oakland and Wayne counties and City of Detroit created to seize defense industry economic opportunities in southeast Michigan.

- *DRDC:* www.thedrdc.org

DETROIT REGIONAL CHAMBER (DRC)

As the voice for business in the 11-county southeast Michigan region, DRC's mission is carried out by creating a business-friendly climate and providing value for members. The chamber also executes the statewide automotive and mobility cluster association, MichAuto, and hosts the nationally recognized Mackinac Policy Conference. Additionally, the chamber leads the most comprehensive education and talent strategy in the state.

- *DRC:* www.detroitchamber.com

DEFENSE CORRIDOR

If you look at the rosters of these organizations, you'll get a sense of all the companies that go into the Michigan defense community. The major primes are all represented by facilities along the "Defense Corridor" of Mound Road and Van Dyke Road: General Dynamics Land Systems, American Rheinmetall Vehicles, BAE, Raytheon, Navistar Defense, Oshkosh, Saab, AM General, and Renk, just to name a few.

When it comes to industry interface, we are pursuing a "layered" strategy. It would be too difficult to list the 5,000+ companies within Michigan that hold defense contracts, and even convening the bigger ones is a challenge. As they compete on

many fronts, those forums are always somewhat guarded. As such, understanding and partnering with the entities that have reach into industry will be a key enabler for ODAI's strategy. We will round out this first publication of defense stakeholders with three major organizations that are partnering with ODAI and that provide ODAI with strategic industry, among other, connections.

NATIONAL ADVANCED MOBILITY CONSORTIUM (NAMC)

NAMC is the second oldest OTA consortium in the country and is headquartered in Michigan. Working closely with multiple DoD/DoW program offices and contracting commands, NAMC is an invaluable resource for ODAI's industry interface. A recent example is the synthesis of an analysis on the Army Transformation Initiative (ATI), the summary presentation of which is included in this appendix.

- *NAMC:* www.namconsortium.org

NEWLAB DETROIT

Newlab Detroit "channels the raw energy of a city that built the automobile, and now leads the charge to redefine mobility, manufacturing, and the industrial economy from the ground up. Anchored at Michigan Central and surrounded by one of the country's most storied industrial communities, we unite entrepreneurs, engineers, and enterprise partners to test, pilot, and scale critical technologies. Detroit's role today isn't just about moving people, it's about re-industrializing the economy that will move the world forward."

- *Newlab:* www.newlab.com/locations/detroit

AUTOMATION ALLEY

Automation Alley is Michigan's leading Industry 4.0 and advanced manufacturing hub, serving as the state's digital transformation center. It helps companies adopt and scale technologies such as automation, robotics, AI, additive manufacturing, and advanced materials. Through programs like Project DIAMOnD and the U.S. Center for Advanced Manufacturing, Automation Alley accelerates innovation, strengthens supply chains, and supports global competitiveness for Michigan manufacturers.

- *Automation Alley:* www.automationalley.com

VELOCITY CENTER

The Velocity Center in Sterling Heights is Macomb County's flagship business incubator, accelerator, and coworking hub—essentially the region's engine for innovation and entrepreneurial growth.

- *Velocity Center:* www.mivelocity.com

Appendix 3: Stakeholders *continued*

THE RIGHT PLACE

The Right Place Inc. is West Michigan's lead economic development organization, driving business retention, expansion, and attraction across greater Grand Rapids. Since 1985, it has supported over \$6.1 billion in investment and more than 50,000 new jobs. As a public/private partnership, it serves as a one stop connector to regional, state, and federal resources, supporting key industries such as advanced manufacturing, life sciences, IT, agribusiness, and aerospace and defense.

- *The Right Place*: www.rightplace.org

20FATHOMS

20Fathoms is northwest Michigan's leading hub for technology, innovation, and entrepreneurship, serving as the region's primary startup incubator and tech focused coworking community. Based in Traverse City, it accelerates the growth of tech startups, entrepreneurs, and scalable businesses by providing essential services, mentorship, and access to resources that remove barriers to growth.

- *20Fathoms*: www.20fathoms.org

Appendix 4: Michigan's Incentives

PROGRAM	OVERVIEW	FINANCIALS
Michigan Business Development Program	One of the 21st Century Jobs Fund's economic incentive programs administered by the MEDC. The MBDP is designed to provide a cash grant, loan, or other economic assistance to qualified businesses that make qualified investments, create qualified new jobs, or both, in Michigan.	The MSF support for a project will be in the form of a grant, direct loan, or other economic assistance and shall not exceed \$10,000,000. All awards shall be performance-based.
Critical Industry Program	The Critical Industry Program (CIP) provides qualified investments to qualified businesses for deal-closing, gap financing, or other economic assistance to create or retain qualified jobs as a result of a technological shift in product or production or make capital investments, or both, in Michigan as determined by the MSF board.	
State Essential Services Assessment Exemption	The State Essential Services Assessment is required for manufacturers that do not pay personal property tax on eligible manufacturing personal property. The MSF, in certain circumstances, may choose to exempt or reduce the Assessment for projects that create jobs and/or private investment in Michigan through the State Essential Services Assessment (SESA) Exemption or the Alternative State Essential Services Assessment Incentive.	The SESA exemptions are equal to 100% exemption of the SESA for a period of years, up to 15 years. Terms will be determined by a formal review of the considerations. Alternative SESAs are equal to a 50% exemption for a period of years, up to 15 years. Terms will be determined by a formal review of the considerations.
Transformational Brownfield Plan	The Brownfield Redevelopment Financing Act, 1996 Public Act (PA) 381, as amended (Act 381), effective July 24, 2017, incorporates transformational brownfield plans (TBP), which affords developers the opportunity to capture a portion of specific incremental taxes generated from large-scale transformational projects for a specified time period. A TBP is defined as a brownfield plan that, among other requirements, will have a transformational impact on local economic development and community revitalization based on the extent of brownfield redevelopment, growth in population, commercial activity, and employment that will result from the plan. The plan must be a mixed-use development project containing a combination of retail, office, residential, or hotel uses or a development in a municipality that is not a county and that has a population of less than 25,000, that utilizes one of the listed uses and has had the mixed-use requirement waived by the MSF. Minimum capital investment thresholds are required depending on the population of the municipality in which the development is proposed.	
Real Property Tax Abatement (PA 198 of 1974)	Local units of government have the ability to reduce property taxes on new investment by 50% for manufacturers and high-tech businesses. These abatements can last up to 12 years and can provide relief on real property taxes. The PA 198 will provide a 50% abatement of any local bond obligations, school sinking fund, or special assessments that are not abated under the MSFRZ for a period of 12 years.	Support will be in the form of a grant and will range between \$50,000 and \$250,000 but not greater 50% of project costs for any project. Applicants may be eligible for additional grant funding for project costs not to exceed \$100,000 (\$350,000 total) and up to an additional \$35,000 for project-specific technical assistance, if the applicant has completed real estate development training. For communities with populations of 15,000 or less, 30% of the annual funding will be set aside for a period of up to six months of that fiscal year. Disbursement of grant funds will follow development milestones.

Appendix 4: Michigan's Incentives *continued*

PROGRAM	OVERVIEW	FINANCIALS
Michigan Works!	<p><i>(Discretionary)</i> Regional Michigan Works! offices are able to provide talent support by offering a number of programs designed to offset the company's talent costs. This process is designed to attract and retain the best possible employees for the employer. The process is designed to be as flexible as possible to meet the expected outcomes and timelines of the project. To assure successful project outcomes, it will be necessary for the client to meet with the Michigan Works! business service staff to finalize this process. Once the process is defined, it will be the hiring and training plan for current and future hiring needs.</p>	<p>6% of estimated eligible investment. Eligible investment TBD upon formal application and approval from the Department of Treasury.</p>
Michigan New Jobs Training Program	<p><i>(Discretionary)</i> This program works to provide the ability for community college districts to enter into agreements with employers to: (1) provide education and training to workers in order to create new jobs; and (2) to establish a funding mechanism to pay for the education and training. Employers, under an agreement with a community college district, may repay new jobs training costs through the diversion of income tax withholding. Income tax withholding attributable to employees in qualified new jobs are to be paid by the employer to the community college district in the same manner as the employer returns and pays income tax withholding payments to the Michigan Department of Treasury. Such payments made by an employer to a community college shall be considered income taxes paid to the state.</p>	
State Education Tax Exemption	<p>The MEDC can abate half or all of the 6-mill State Education Tax on new investment when the project presents significant economic benefits to Michigan, and when the project receives a property tax abatement under PA 198 of 1974.</p>	
Automatic Elimination of Personal Property Tax for Eligible Manufacturing Equipment	<p>In an ongoing effort to make the state a more attractive place for businesses to invest and grow, Michigan phased out its personal property tax (PPT) for most businesses beginning in 2014. This reform substantially reduced compliance and administrative costs for businesses and is especially attractive to manufacturers who rely on expensive capital investments in tools and other equipment. Eligible manufacturing personal property could include both commercial personal property and industrial personal property. More specifically, the term refers to all personal property located on real property where that personal property is used more than 50% of the time in industrial processing or in supporting industrial processes.</p>	

Appendix 5: Competitive Analysis

ALABAMA

Alabama offers businesses one of the nation's lowest overall tax burdens. In addition, Alabama tax incentives are designed to assist with a cost-effective start-up and provide continued operational savings.

Job Credit: Alabama offers an annual cash refund up to 3% of the previous year's gross payroll for up to 10 years. For companies employing at least 12% veterans, up to an additional 0.5% credit is available for the wages of veterans. And up to an additional 1% job credit is available for companies in targeted counties.

Abatements: According to the Reinvestment and Abatements Act, with new facility and expansion, there is an abatement of non-educational portion of property tax and an abatement of non-educational portion of sales and use taxes on construction materials. With existing facility refurbishments and upgrades, or facilities placed back in service there is an abatement of non-educational sales and use taxes on construction materials and equipment. There is an abatement of non-educational property taxes of the incremental property tax increases. And an exemption from taxes for increased utility services for up to 10 years, plus AIDT worker training.

AIDT: Hailed as one of the nation's most effective workforce training programs, Alabama Industrial Development Training (AIDT) has provided state-of-the-art industrial training to thousands of workers of Alabama industries. AIDT's services are cost-free for qualifying new and expanding industries in Alabama. AIDT was awarded ISO 9001:2015 certification by the International Organization for Standardization.

Defense spending: \$14.4 billion (#14 in the U.S.)

Opportunity Zones: Opportunity Zones are low-income census tracts with a poverty rate of at least 20% and a median family income of less than 80% of the statewide or area median income. Census tracts are statistical subdivisions of a county established by the U.S. Census Bureau. Each tract averages between 1,200 and 8,000 in population and the nominated tracts vary in size from 199 acres to 235,352 acres.

Industrial Development Grant: This authorizes the state industrial development authority to sell bonds to make grants to counties, municipalities, local industrial development boards or authorities or economic development councils or authorities, airport authorities, port authorities or public corporations to pay for site preparation for land owned or possessed by lease by these entities.

Growing Alabama Credit: As part of the Alabama Renewal Act, the Growing Alabama Credit is an incentive to provide a source of funds for site preparation and public infrastructure improvements of existing industrial sites. At least 25% of the credit is reserved for Alabama counties targeted to spur economic development in rural areas.

Port Credit: The Port Credit, part of the Alabama Renewal Act, is designed to stimulate new job creation, capital investment and increased cargo shipping at Alabama facilities such as the Port of Mobile, Ala., and at airports. The 4,000-acre Mobile seaport is one of the nation's busiest, handling more than 50 million tons of cargo annually.

www.edpa.org/why-alabama/competitive-taxes-and-incentives

CALIFORNIA

California, with its robust aerospace and defense legacy, remains a national leader in the industry. The sector accounts for an estimated \$35 billion of the state's annual gross domestic product output while one-third of U.S. space tech companies call California home. A network of small- to large- sized companies, supported by top universities and a skilled workforce, drive innovation in advanced components, materials, and technologies. Key assets, including Vandenberg Space Force Base, U.S. Space Systems Command at the LA Air Force Base, Edwards Air Force Base, and four NASA research centers, contribute to a powerful space tech ecosystem. With its talent, infrastructure, and public/private funding, California is poised for the future of aircraft, space, and satellite development and manufacturing.

Defense spending: \$60.8 billion (#3 in the U.S.)

California Competes Tax Credit: The California Competes Tax Credit is an income tax credit available to businesses who want to relocate, stay, or grow in California. Our team provides no-cost consultations to see if your business qualifies.

California Competes Tax Credit: The California Competes Tax Credit is an income tax credit available to businesses who want to relocate, stay, or grow in California. Our team provides no-cost consultations to see if your business qualifies.

Advanced Transportation and Manufacturing Sales and Use Tax Exemption: The California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) offers a full sales and use tax exclusion to manufacturers that promote alternative energy and advanced transportation.

Appendix 5: Competitive Analysis *continued*

Employment Training Panel (ETP): ETP provides funding to employers for training that upgrades the skills of their workers.

Economic Development Rate Program: This program gives special utility discounts for businesses that require high-energy loads to operate or continue operating in California.

Research & Development Tax Credit: A business may qualify for an income tax credit if it paid for or incurred qualified research expenses while conducting qualified research activity in California. Qualified research expenses include wages, supplies, and contract research costs.

www.business.ca.gov/industries/aerospace-and-defense

CONNECTICUT

Manufacturing Innovation Fund (MIF): Connecticut supports the growth, innovation and progress of the advanced manufacturing sector through the \$75 million MIF. The MIF invests in loans and grants for business, industry and competitive initiatives to support Connecticut's manufacturers.

Data Center Incentives: Incentive agreements with qualified data centers for 20–30-year terms depending on size and location of the data center. This includes sales and use tax exemptions for goods and services purchased by the data center, property tax exemptions, and exemption from any future financial transactions taxes. To be eligible for the 20-year term, data centers must make a qualified investment in the site of \$50 million if the site is in an opportunity zone or \$200 million if it is not. For a 30-year term, the investment must be \$200 million in an opportunity zone and \$400 million elsewhere.

Small Business Boost Fund: The Connecticut Small Business Boost Fund gives small business owners access to flexible funding for capital expenditures and working capital and connects them with support services. It's a personal, equitable approach to lending, because business owners are more than just numbers on a spreadsheet. Small businesses and nonprofits can borrow between \$5,000 and \$500,000 depending on eligibility and need, and can choose how they spend the money — on equipment, payroll, utilities and rent, supplies, marketing and advertising, eligible refinancing, building renovations and other expenses.

Defense spending: \$25.3 billion (#6 in the U.S.)

JobsCT—Earn As You Grow: This program accelerates high-quality private-sector job growth in Connecticut by allowing companies that locate or expand in distressed municipalities or opportunity zones to qualify for a 50% rebate based on the employees' income, while companies located in municipalities that do not have these designations can qualify for a 25% rebate. In order to qualify, a company must create at least 25 new jobs in a Grow CT focus industry with salaries being at least 85% of the median household income of the municipality where the jobs will be located.

Sales and Use Tax Exemption: Connecticut Innovators (CI) can act as a conduit for a sales and use tax exemption for the company's anticipated qualifying capital equipment and/or construction materials. This exemption relieves the company and/or the developer from the state's 6.35% sales tax, up to the CI board-approved amount. This procedure is subject to review and approval by the CI board of directors and Connecticut Dept. of Revenue Services.

Connecticut Innovations (CI): Leading source of financing and ongoing support for Connecticut's innovative, growing companies, especially in bioscience and high technology. One of the most active strategic venture capital organizations on the East Coast, CI also provides expertise in management, product development, marketing and governance.

www.advancect.org/site-selection-and-certified-sites/incentives-and-programs

INDIANA

Data Center Sales Tax Exemption: Provides a sales and use tax exemption on purchases of qualifying data center equipment and energy to operators of a qualified data center for a period not to exceed 25 years for data center investments of less than \$750 million. If the investment exceeds \$750 million, the IEDC may award an exemption for up to 50 years. This program is established by Indiana Code § 6-2.5-15. Local governments may also provide a personal property tax exemption on qualified enterprise information technology

Defense spending: \$6.4 billion (#28 in the U.S.)

equipment to owners of a data center who invest at least \$25 million in real and personal property in the facility.

Headquarters Relocation Tax Credit (HRTC): Provides a tax credit to corporations that relocate their headquarters to Indiana. The credit is assessed against the corporation's state tax liability. The Headquarters Relocation Tax Credit is established by I.C. 6-3.1-30. The Small Headquarters Relocation Tax Credit (S-HQRTC) provides a refundable tax credit to a

Appendix 5: Competitive Analysis *continued*

small, high-growth business that relocates its headquarters or the number of employees that equals 80% of the company's total payroll to Indiana. The credit is assessed against the corporation's state tax liability. The S-HQRTC is established by Indiana Code § 6-3.1-30.

Economic Development for a Growing Economy (EDGE); Payroll tax credit: Provides an incentive to businesses to support jobs creation, capital investment and to improve the standard of living for Indiana residents. The refundable corporate income tax credit is calculated as a percentage (not to exceed 100%) of the expected increased tax withholdings generated from new jobs creation. The credit certification is phased in annually for up to 20 years based upon the employment ramp-up outlined by the business.

Hoosier Business Investment Tax Credit: Provides incentive to businesses to support job creation, capital investment and to improve the standard of living for Indiana residents. The non-refundable corporate income tax credits are calculated as a percentage of the eligible capital investment to support the project. The credit may be certified annually, based on the phase-in of eligible capital investment, over a period of two full calendar years from the commencement of the project.

Industrial Grant Fund: Provides assistance to municipalities and other eligible entities as defined under I.C. 5-28-25-1 with off-site infrastructure improvements needed to serve the proposed project site. Upon review and approval of the local recipient's application, project specific milestones are established for completing the improvements. IDGF will reimburse a portion of the actual total cost of the infrastructure improvements. The assistance will be paid as each milestone is achieved, with final payment upon completion of the last milestone of the infrastructure project.

Manufacturing Readiness Grants: Conducted by Conexus Indiana, the program has helped 650 Indiana firms fund capital expenses that continue to fuel transformative manufacturing

practices well beyond their MRG-assisted projects. It is not accepting applicants for the foreseeable future.

Research & Development Incentives: State of Indiana offers two tax incentives targeted at encouraging investments in research and development. Taxpayers may receive a credit against their Indiana state income tax liability calculated as a percentage of qualified research expenses. In addition, taxpayers may be refunded sales tax paid on purchases of qualified research and development equipment. The Indiana Department of Revenue oversees these incentive programs. Select from the menu to learn about our Research Expense Credits and our Research and Development Sales Tax Exemption. The potential value of incentive amount varies based upon the amount of the qualifying transaction. A taxpayer who qualifies for the exemption must claim the exemption in a manner prescribed by the Indiana Department of Revenue.

Skills Enhancement Fund (SEF): Provides assistance to businesses to support training and upgrading skills of employees required to support new capital investment. The grant may be provided to reimburse a portion (typically 50%) of eligible training costs over a period of two full calendar years from the commencement of the project. Grants from the Skills Enhancement Fund must lead to post-secondary credentials, a nationally recognized industry credential, or specialized company training for both new hires and existing workers, and an increase in wages for existing employees.

Venture Capital Investment Tax Credit: Improves access to capital for fast growing Indiana companies by providing individual and corporate investors an additional incentive to invest in early-stage firms and qualified investment funds. Investors who provide qualified debt or equity capital to qualified Indiana businesses or qualified investment funds may receive a credit against their Indiana tax liability. The Venture Capital Investment Tax Credit is established by I.C. 6-3.1-24.

www.iedc.in.gov/indiana-advantages/investments

MINNESOTA

Minnesota Job Creation Fund: Provides financial incentives up to \$2 million to new and expanding businesses that meet job creation and capital investment targets.

Minnesota Investment Fund: Offers loans up to \$1,000,000 loan and focuses on industrial, manufacturing, and technology-related industries. Funding is provided to local units of government, which use the money to provide below-market

Defense spending: \$2.4 billion (#40 in the U.S.)

rate loans to help companies expand. Funding may be used to purchase land, machinery and equipment.

Minnesota 21st Century Fund: Makes loans or equity investments in innovative mineral, steel, or other industry processing, production, manufacturing, or technology projects located in the taconite relief tax area.

Appendix 5: Competitive Analysis *continued*

Greater Minnesota Job Expansion Program: Provides sales tax exemptions for up to seven years to existing businesses located in greater Minnesota that increase employment and meet other eligibility requirements.

Minnesota Forward Fund: A \$400 million initiative to provide matching funds to companies seeking to expand using federal resources.

Automation Loan Participation Program: Provides companion loans intended to fill gap financing needs for businesses purchasing machinery, equipment, or software to increase productivity and automation. Loans of up to \$500,000, 5–7 year term, 1% interest rate, private financing match required.

Sales & Use Tax Exemption: Exempts capital equipment used in the manufacturing process from the sales tax. There are also several other major exemptions for businesses, including fees for equipment installation and repair; utilities, chemicals and gases used for industrial production; and most services.

Commercial and Industrial Property Tax Exemption: Exempts personal property like machinery and inventory from the property tax, resulting in a lower effective tax rate for real and personal property. As a result, businesses whose equipment and inventory values are high, relative to their real estate value, pay a lower effective tax rate than in states that impose such taxes.

Research and Development Tax Credit: For R&D expenditures is 10% up to the first \$2 million in eligible expenses. The credit is 4% for eligible expenses above \$2 million. Individuals involved in partnerships, S-corporations and limited liability companies can claim the credit against their individual income taxes. This opens up the tax credit to more small and medium-sized businesses.

Data Center Sales Tax Incentive: For companies that build new data or network operation centers of at least 25,000 square feet and invest \$30 million; or refurbish an existing center of at least 25,000 square feet and invest \$50 million. Qualify for sales tax exemptions for 20 years on computers and servers, cooling and energy equipment, energy use and software, and they pay no personal property tax ever.

Minnesota Job Skills Partnership Program: Partners with businesses and schools to train or retrain workers, expand opportunities, and keep high-quality jobs in the state. Grants of up to \$400,000 are awarded to educational institutions that partner with businesses to develop new-job training or retraining for existing employees.

Job Training Incentive Program: Provides grants of up to \$200,000 for businesses to provide training for at least three new jobs new jobs outside the seven-county metro area or in Hanover, Rockford, Northfield and New Prague.

Automation Training Incentive Program: Provides grants of up to \$25,000 are available to small businesses in the manufacturing or skilled production industry for the express purpose of training incumbent workers as quickly and effectively as possible on new automation technology.

Scitechspexperience Internship Program: A paid internship that connects college students in science, technology, engineering and math disciplines with hands-on opportunities at Minnesota companies. The focus is on strengthening Minnesota's STEM industries and developing an experienced and well-trained workforce.

www.mn.gov/deed/dobusiness/doing-business-here/location-expansion-assistance/team-grow

OHIO

Economic Development Grant: Promotes economic development, business expansion, and job creation by providing funding for eligible projects throughout the state.

JobsOhio Growth Fund Loan: Provides capital for expansion projects to companies that have limited access to capital and funding from conventional, private sources of financing. JobsOhio will consider loans to companies that are in the growth, established, or expansion stage, and that have generated revenues through a proven business plan.

JobsOhio Relocation Incentive: Helps Ohio employers of any size in 10 critical sectors expand their workforce, specifically in STEM and technical occupations, with direct financial

Defense spending: \$11.7 billion (#18 in the U.S.)

incentives for attracting out-of-state professionals. \$15,000 per new hire who establishes permanent residency and starts work. Up to \$225,000 total (15 hires) per company until program funds are depleted.

JobsOhio Small Business Grant: Offers up to \$50,000 in financial assistance to eligible small businesses in Ohio looking to grow their operations.

JobsOhio Research & Development (R&D) Center Grant Program: Created to facilitate new strategic corporate R&D centers in Ohio. Such R&D centers will support the

Appendix 5: Competitive Analysis *continued*

development and commercialization of emerging technologies and/or products that align with one or more of JobsOhio's targeted industries.

JobsOhio Workforce Grant: Provides funding for the improvement of worker skills and abilities in the state of Ohio. Grant decisions are based on several project factors including but not limited to job creation, additional payroll, fixed-asset investment commitment, project return on investment, and project location.

Research and Development Investment Loan Fund: Provides loan financing ranging from \$500,000 to \$5 million for projects primarily engaging in R&D activity. The loans have fixed rates (at or below market rates) and other loan terms similar to those of commercial bank financing. Companies receive a dollar-for-dollar, nonrefundable Ohio commercial activity tax credit for principal and interest payments made during the year up to \$150,000 during the loan term.

166 Direct Loan: Gives eligible businesses loans for land and building acquisition, construction, expansion or renovation, and equipment purchases. The program provides low-interest loans up to 40% of the cost not to exceed \$1.5 million.

Ohio Enterprise Bond Fund: Offers revenue bond financing through an S&P-rated fund, whereby proceeds from the sale of bonds are loaned to companies for fixed-rate, long-term

capital asset financing. Rates are market-driven and fixed prior to funding. Loan terms range from seven to 10 years for equipment and 15 to 20 years for real estate. Up to \$10 million in financing is available through the program.

Innovation Ohio Loan Fund: Provides loans for acquisition, construction and related capital costs of technology, facilities and equipment purchases. The fund was created to help Ohio companies develop next-generation products and services within the state's key industry sectors. Loans range from \$500,000 to \$1.5 million and can cover up to 75% of the project cost.

Job Creation Tax Credit: A refundable and performance-based tax credit calculated as a percent of created payroll and applied toward the company's commercial activity tax liability. Should the amount of the credit exceed the company's commercial activity tax liability for any given year, the difference is refunded. Companies creating at least 10 jobs (within three years) with a minimum annual payroll of \$660,000 and that pay at least 150% of the federal minimum wage are eligible for the credit.

Data Center Tax Exemption: Provides a sales-tax exemption rate and term that allow for partial or full sales tax exemption on the purchase of eligible data center equipment. Projects must meet minimum investment and payroll thresholds to be eligible.

www.jobsohio.com/incentives-programs

PENNSYLVANIA

Innovate in PA Tax Credit Program: This program authorized the Pennsylvania Department of Community and Economic Development to sell \$100 million of state insurance premium tax credits to insurance companies for the purpose of establishing the Innovate in PA Fund used to distribute proceeds to innovation and economic growth technology-based projects. Innovate in PA tax credits are effective against insurance premiums tax liabilities.

Manufacturing and Investment Tax Credit program: provides taxpayers who increase their annual taxable payroll by \$1,000,000 through the creation of new full-time jobs with a tax credit. The tax credit is equal to up to 5% of the taxpayer's increase in annual taxable payroll. Jobs must be maintained for a duration of five years.

Pennsylvania Economic Development for a Growing Economy (PA EDGE) tax credits: a collection of tax

Defense spending: \$21.8 billion (#7 in the U.S.)

credit programs designed to attract new investment from businesses resulting in economic growth and job creation for the commonwealth. Tax Credits for qualified taxpayers are approved by the Pennsylvania Department of Revenue.

Qualified Manufacturing Innovation & Reinvestment Deduction program: provides a deduction from taxable income under the corporate net income tax. To qualify, a taxpayer must make a capital investment in excess of \$100 million for the creation of new or refurbished manufacturing capacity within three years of a designated start date.

Research & Development Tax Credit: This tax credit is now available to businesses and individuals performing qualified research in Pennsylvania, to encourage businesses in the commonwealth to conduct research.

www.pa.gov/agencies/revenue/incentives-credits-and-programs

Appendix 5: Competitive Analysis *continued*

TEXAS

Texas Tax Incentives: With a predictable regulatory climate, young, diverse and skilled workforce, and world-class infrastructure, it's no surprise that CEOs have rated Texas the "Best State for Business" for 20 years in a row.

Businesses can take advantage of many Texas tax incentives, including no corporate or personal income tax. Additionally, Texas offers tax incentives for franchise business relocation, renewable energy incentives, research and development tax credits, and other state sales and use tax exemptions.

The Texas Enterprise Zone Program (EZP) is a state sales and use tax refund program designed to encourage private investment and job creation in economically distressed areas of the state.

State Economic Development Incentives: Compared to other states, Texas economic development incentives are robust and wide-ranging. The Lone Star State is continually targeting diversified industry development to maintain a thriving mix of business enterprises. The Texas Enterprise Fund (TEF), for instance, is one of the largest "deal-closing" funds of its kind in the country and is a performance-based incentive for companies whose projects contribute significant capital investment and jobs to the state's economy. Companies considering Texas and another out-of-state site for their facility opening or expansion can be offered competitive, performance-based grants that

Defense spending: \$71.6 billion (#1 in the U.S.)

enable them to make capital and workforce investments to get their projects off the ground. Additional incentives are available for major event funding, university research initiatives, job creation, new product development, skills training, and education for relocating employees and their families.

Financing Incentives: Companies relocating or expanding in Texas may be eligible for asset-based loans, leveraged loans, or tax-exempt bonds. A few of the most popular options include the State of Texas Industrial Revenue Bond Program and the Texas Military Value Revolving Loan Fund.

Grants: many types of grants are available to Texas communities, certain Texas higher education institutions and businesses, notably:

- Cancer Prevention & Research General Obligation Bonds Program
- Defense Economic Readjustment Zone Program (DEAAG)
- Governor's University Research Initiative (GURI)
- Skills Development Fund
- Self-Sufficiency Fund
- Texas Enterprise Fund (TEF)
- Texas Moving Image Industry Incentive Program

www.businessintexas.com/why-texas/taxes-incentives

VIRGINIA

Defense Production Zones: Virginia's cities, counties, and towns can establish, by ordinance, one or more defense production and support services zones to attract growth in national defense-related businesses.

Data Center Retail Sales & Use Tax Exemption: Offers exemption for qualifying computer equipment or enabling software purchased or leased for use in certain data centers in the Commonwealth that meet minimum investment and job creation requirements.

Commercial and Industrial Sales & Use Tax Exemption: Offers sales and use tax exemption for purchases used directly in production or research and development.

Virginia Enterprise Zone—Job Creation Grant: Provides grants to businesses that create high-wage, full-time, permanent positions with health benefits in an Enterprise Zone that are net new jobs for Virginia.

Defense spending: \$68.5 billion (#2 in the U.S.)

Technology Zones: Virginia cities, counties, and towns have the ability to establish by ordinance, one or more technology zones to attract growth in targeted industries.

Virginia Jobs Investment Program (VJIP): Provides services and funding to companies creating new jobs or implementing technological change to reduce human resource development costs for new companies, expanding companies, and companies retraining their employees.

Virginia Small Business Financing Authority (VSBFA): Provides small businesses and communities with debt financing resources for business formation and expansion.

Commonwealth's Development Opportunity Fund (COF): Provides "deal-closing" grants at the governor's discretion to secure a company location or expansion in Virginia.

Appendix 5: Competitive Analysis *continued*

Major Eligible Employer Grant Program (MEE): Provides grants to companies to make investments and provide a significant number of stable jobs through a significant expansion or new operation.

Port of Virginia Economic and Infrastructure Development Grant (EID Grant): Provides grants to companies that construct new maritime-related employment centers or expand existing centers.

Virginia Investment Performance Grant (VIP): Provides grants to existing Virginia manufacturers or manufacturing-related research and development services that continue capital investment in the Commonwealth.

Virginia Port Volume Increase Grant Program: Virginia's Port Volume Increase Tax Credit benefits manufacturing, distribution, agriculture, and mineral and gas companies that utilize Virginia's port facilities. A company that increases its usage by 5% in a single calendar year over its base year of port cargo volume can receive \$50 per TEU in excess over the previous year's cargo volume.

Virginia Economic Development Incentive Grant (VEDIG): Provides grants to companies that invest and create new employment opportunities by locating significant headquarters, administrative, or service sector operations in Virginia.

www.vedp.org/incentives

WASHINGTON

Aerospace Industry Incentives

- Credit for pre-production development expenditures
- Credit for property/leasehold taxes paid on aerospace business facilities
- Tax rate for aerospace businesses
- Construction of new facilities used for airplane repair and maintenance (retail sales/use tax exemption)
- Retail sales and use tax exemption for the construction of new facilities used to manufacture commercial airplanes, fuselages, or wings of commercial airplanes
- Sales and use tax exemption for aerospace businesses for computer hardware/software/peripherals

Manufacturing Industry Incentives

- Manufacturers sales and use tax deferral for eligible investment projects
- Sales and use tax exemption for manufacturing machinery and equipment
- Sales/use tax deferral—manufacturing and research and development in qualifying counties

Defense spending: \$15.5 billion (#10 in the U.S.)

High Tech Industry Incentives

- Biotechnology and medical device manufacturing sales and use tax deferral/waiver
- High technology sales and use tax deferral/waiver

Aluminum Smelting Industry

- Tax credit for property tax on aluminum smelter
- Tax/public utility tax credit for electricity, natural gas, or manufactured gas sold to aluminum smelters
- Natural gas use tax exemption
- Reduced tax rate for aluminum smelting
- Retail sales tax credit for state portion of sales tax paid on materials, equipment, labor and services used in aluminum smelting

www.dor.wa.gov/taxes-rates/tax-incentives/tax-incentive-programs#911

Appendix 6: Academic Partnerships

Michigan is home to four top-tier R1 universities. The R1 label is awarded to universities by the Carnegie Classifications of Institutions of Higher Education. To qualify as an R1, a university must engage in the highest level of research and meet advanced criteria for research and development. This includes, but is not limited to, substantial R&D funding, numerous doctoral degrees awarded, state-of-the-art equipment and facilities, and a strong commitment to large-scale research initiatives. These universities are key players in the development of technologies contributing to the advancement of defense technologies and systems necessary to face the challenges of today while preparing for those of tomorrow.

The four R1 universities in Michigan are:

1. University of Michigan–Ann Arbor
2. Michigan State University
3. Wayne State University
4. Michigan Technological University

In addition to the R1 universities, Michigan's higher-education ecosystem is deeply committed to advancing research, development, and contributing to the training of a highly skilled workforce to meet the demands of the current national security and defense environment. Despite not having the R1 status, Michigan is home to many other research institutions at the forefront of innovation. Specifically, other notable universities for R&D are Western Michigan University, Grand Valley State

University, Central Michigan University, Kettering University, and Lawrence Technological University.

As a result of the leading research universities in Michigan's commitment to becoming a dominant force amongst universities contributing to domestic innovation, these universities have most recently launched the National Security Consortium, a strategic collaboration spurred by the desire to strengthen U.S. national security through research, technology, and workforce training. The initial consortium members will be University of Detroit Mercy, Central Michigan University, Grand Valley State University, Kettering University, Lawrence Technological University, University of Michigan–Dearborn, and University of Michigan–Flint, with the intent to welcome more members to achieve its desired goal of asserting Michigan as a necessary hub for defense research as well as to achieve UARC status within the state, which would ensure a long-term mutually beneficial relationship with the DOW.

These critical initiatives taking place within the state of Michigan, in collaboration with the Office of Defense & Aerospace Innovation at the Michigan Economic Development Corporation, are essential to the overall revitalization of national security and defense in the U.S., asserting Michigan's fundamental role in the transformation needed to address the challenges present in the international arena and ensure the U.S. remains at the helm of peace and security.



MICHIGAN ECONOMIC DEVELOPMENT CORPORATION

The Michigan Economic Development Corporation is the state's marketing arm and lead advocate for business development, job awareness and community development, with the focus on growing Michigan's economy. Dedicated to shared economic success, MEDC promotes the state's assets and opportunities that support business investment and community vitality.