



**THE FUTURE IS HERE**  
GRAND FORKS, ND

## GRAND FORKS AIR FORCE BASE: 50 YEARS OF MISSION & FORCE TRANSFORMATION

From the Cold War to the War on Terror — Grand Forks Air Force Base (GFAFB) has been home to our nation's most critical capabilities, including: missiles, fighters, bombers and aerial refueling.

As our nation's needs change, so does GFAFB. The United States Air Force Air Defense Command activated the first unit at GFAFB in 1957. Now, emerging missions include a compelling future in unmanned aircraft, new federal and military missions and innovative partnerships in energy, training and technology.

The people of the Grand Forks region and North Dakota have partnered with the Air Force Base for more than 50 years as its mission and force have transformed to defend the nation and meet its ever-changing security challenges.

Grand Forks is prepared for any mission sent our way.

**The Future is Here.** A bold new future is emerging in the Grand Forks region as unmanned aircraft systems (UAS) operations of the Air Force, Customs and Border Protection and the North Dakota Air National Guard begin to ramp up.

Forthcoming deployments of Predator® and Global Hawk® unmanned aircraft are bolstered by world-class UA pilot training programs at the University of North Dakota's John D. Odegard School of Aerospace Sciences. Exciting engineering and development initiatives at the School of Engineering and Mines are developing new UAS payloads and sensors. UND's Energy and Environmental Research Center (EERC) is poised to work with GFAFB in establishing new programs in cold weather testing, renewable energy and tactical fuels.

Many university programs and initiatives are collaborations with businesses in electronics, software, training and advanced materials with numerous future joint projects on the horizon.

A bold new future of UAS is taking off right here in the Red River Valley.

UAS photos of Predator® courtesy of General Atomics Aeronautical Systems, Inc. and UAS photos of Global Hawk® courtesy of Northrop Grumman Corporation.





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## VISIONARY, HANDS-ON LEADERSHIP

The community, region and state are committed, determined and forward looking in their vision for the future of the Grand Forks Air Force Base (GFAFB).

Leadership at all levels — from the Congressional delegation, the governor and state, county and city leaders — vigorously supports military and civilian uses.

A Community Base Enhancement Initiative led by the City of Grand Forks and Grand Forks County is looking for ways to accelerate development of new missions and initiatives and making resources available.

During the 2009 Legislative session, the State of North Dakota launched a \$5 million enhancement fund for redeveloping Grand Forks Air Force Base and to build new private industry partnerships.



“Grand Forks Air Force Base is clearly one of the crown jewels of the Air Force and stands ready for expanded opportunities and long-term growth. I believe that we have opportunities to secure both future tankers and more Predator and Global Hawk unmanned aircraft systems.”

**U.S. Senator Kent Conrad**  
North Dakota



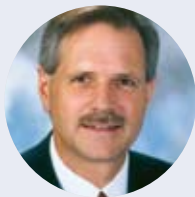
“We have worked hard to build relationships with the Air Force and ensure the Base has all the resources it needs. Top decision-makers in the Air Force recognize the importance of Grand Forks Air Force Base, and we’ll continue to work with them to expand its role in unmanned aircraft and other future missions.”

**U.S. Senator Byron L. Dorgan**  
North Dakota



“Grand Forks Air Force Base is a first-class facility that is vital to our national defense, and its future is bright. New missions in unmanned aircraft and emerging opportunities related to aerospace technologies and energy ensure that it will remain a top-notch installation for many years to come.”

**Congressman Earl Pomeroy**  
North Dakota



“Grand Forks Air Force Base is emerging as a center for unmanned aviation. The partnership we’ve built at all levels, along with the BRIC funding through our Centers of Excellence program, will ensure that the Base maintains its key role in our national defense and homeland security for decades to come.”

**Governor John Hoeven**  
North Dakota



“Over the years, the Grand Forks Air Force Base has gone through many changes and with each change has come tremendous opportunity. The new UAS mission puts GFAFB at the forefront of cutting-edge technologies that will have a profound and far-reaching impact on our community, our region and our country.”

**Mayor Michael R. Brown**  
Grand Forks, North Dakota



“Incredible potential in the unmanned aviation arena exists in the Grand Forks region because of GFAFB and UND’s UAS Center. Now we can leverage the State’s \$5 million enhancement fund to build upon these assets and make Grand Forks the center of the universe for everything UAS. We’re ready with the needed resources in place....bring it on!”

**John Schmisek**  
Grand Forks County Commission



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Grand Forks Air Force Base has a robust infrastructure with excess capacity for new missions...

United States Air Force

**Report to Congressional Appropriations Committee Dec. 2008**



*"The General Atomics team in Grand Forks has proven to be efficient and successful. Since we opened our Grand Forks operation, we've been able to fill all our employment needs with educated and well-trained team members from the local community."*

**Maynard Herting, Program Manager, General Atomics**

## BRING IT! EQUIPPED AND READY FOR ANY MISSION

The federal government has invested significantly in new infrastructure at the base and provided significant planning resources for the future of GFAFB.

**Infrastructure-Ready.** Over the last decade the United States has invested over \$430 million in military construction at GFAFB. These infrastructure improvements include:

- New runway for flying missions
- Network Control Center
- Combat Information Transport System - extending and upgrading high-speed fiber optic network and redundant voice, data and video links
- Many superb buildings less than four years new
- Quality housing
- New fully-featured fitness center

Infrastructure investments on the immediate horizon include:

- State-of-the-art control tower
- Fire station

GFAFB has space available for new missions and opportunities including administrative, warehouse and hangar space and real estate for potential development.

**Looking Forward.** The Office of Economic Adjustment, United States Department of Defense, along with local partners has invested more than \$600,000 in feasibility and competitiveness studies to prepare GFAFB and the region for the future.

- UAS Business Development Roadmap and Implementation Plan
- Life Sciences Business Development Roadmap and Roundtable
- Broadband Business Development Roadmap and Implementation Plan
- Industrial Development Land Studies



*"GFAFB is no stranger to mission changes and this current transition into UAS is allowing us to partner with others to create one of the most unique, relevant wing structures in the nation. This is an exciting time for the Base, local and state community as we work together to show the world that when it comes to all things UAS, the future is here!"*

**Col. John E. Michel**  
**United States Air Force**



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## ▶▶▶ PRODUCTIVE WORKFORCE

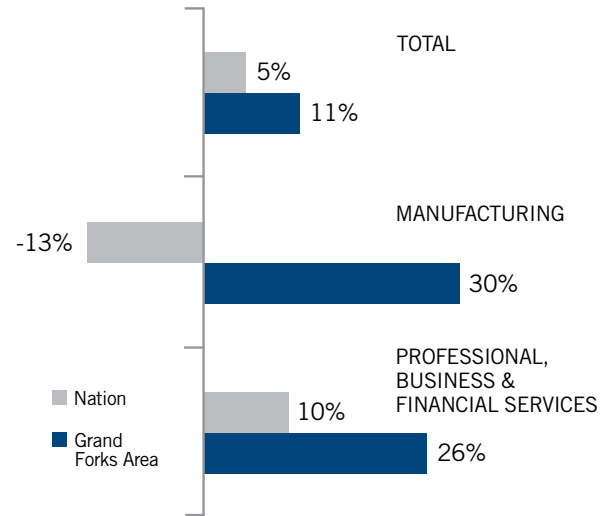
Access to a skilled, productive workforce is one of the region's most valuable assets. Education isn't just good here — it's a way of life.

North Dakota's young students consistently outrank those from other states in science, math and reading scores. More than 70% of all people in the regional labor force have some post secondary training or education and more than 40% have college, technical or advanced degrees. Many Air Force retirees have chosen to stay and put their talents to work right here in the region.

Led by the two state higher education flagships — the University of North Dakota and North Dakota State University — the region is home to more than 41,000 students engaged in two-year technical, four-year bachelors, and masters and doctoral programs.

The Grand Forks region has experienced solid growth in recent years due to the availability of a workforce prepared for careers in aviation and aerospace, energy, manufacturing, professional business and technical services. Job growth here places the region high among top-performing places in the Great Plains and the nation.

**Grand Forks Job Growth 2002-2008**

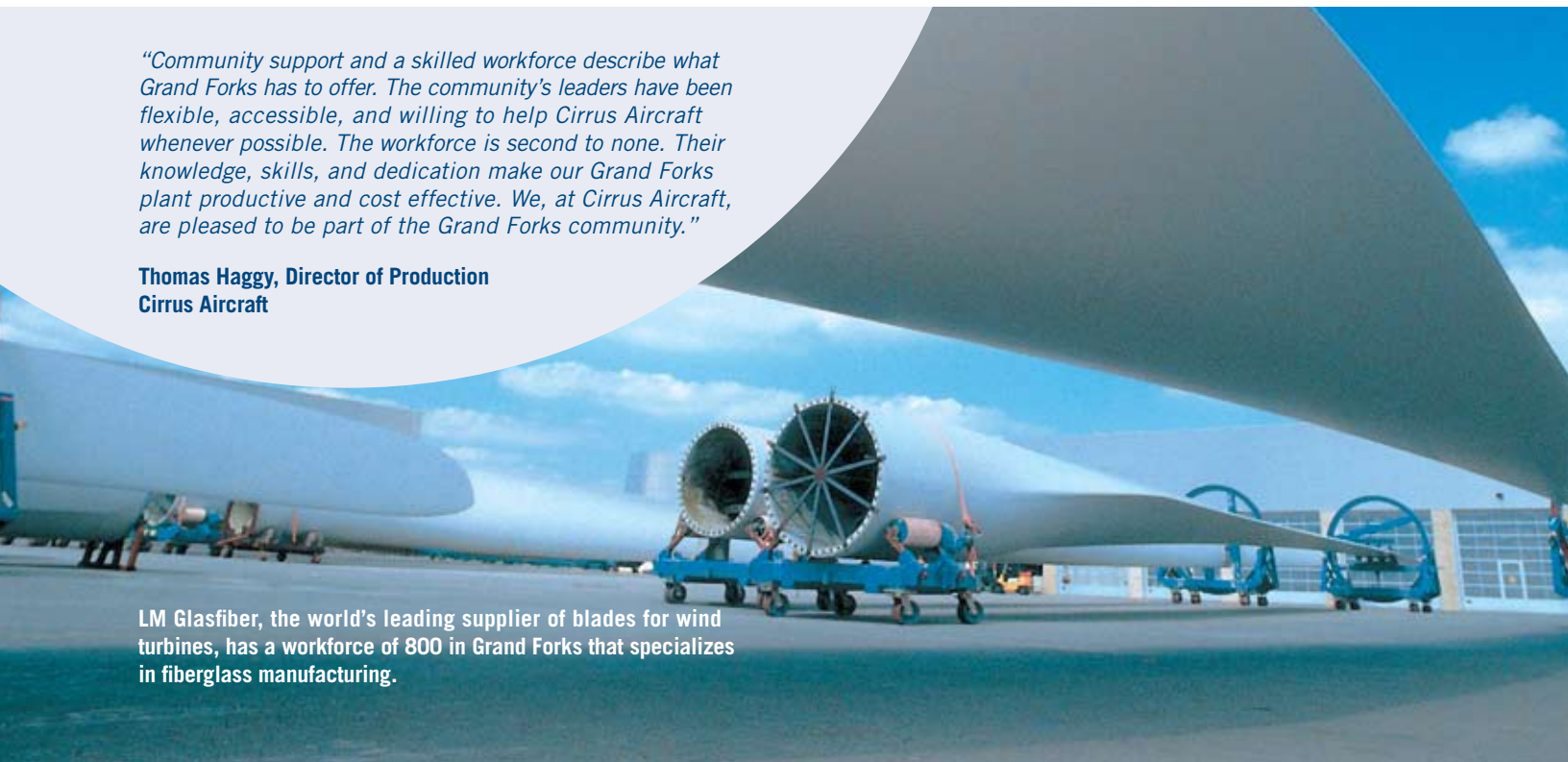


Source: U.S. Bureau of Labor Statistics

*"Community support and a skilled workforce describe what Grand Forks has to offer. The community's leaders have been flexible, accessible, and willing to help Cirrus Aircraft whenever possible. The workforce is second to none. Their knowledge, skills, and dedication make our Grand Forks plant productive and cost effective. We, at Cirrus Aircraft, are pleased to be part of the Grand Forks community."*

**Thomas Haggy, Director of Production**  
Cirrus Aircraft

LM Glasfiber, the world's leading supplier of blades for wind turbines, has a workforce of 800 in Grand Forks that specializes in fiberglass manufacturing.





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## SKILLS AND TRAINING PROGRAMS ABOUND IN THE REGION

**Aviation and Aerospace Training.** The John D. Odegard School of Aerospace Sciences at UND is recognized as one of the world's premier flight training organizations. From the most technologically advanced simulators to the world's largest collegiate training fleet, the state-of-the-art facilities and more than 500 faculty and staff provide students with a training experience second to none.

UND is designated a Department of Defense Center of Excellence for UAS Education and will begin offering a UAS degree in the fall of 2009.

**Engineering and Industrial Technology.** UND's School of Engineering and Mines prepares students for professional careers in chemical, civil, electrical, geological and mechanical engineering. As one of the most well respected engineering schools in the upper midwest, UND's School of Engineering and Mines prepares students to be skilled problem solvers.

The College of Business and Public Administration's Industrial Technology program at UND trains students in the management, operation and maintenance of complex technological systems.

At North Dakota State University, the College of Engineering and Architecture offers degrees in seven different engineering disciplines, including industrial and manufacturing engineering and electrical and computer engineering.

**Simulator Technology.** The Simulator Maintenance Technician program at Lake Region State College is one of the few training programs for simulator technicians in the United States.

**Aviation Maintenance Technology.** The Aviation Maintenance Technology program at Northland Community and Technical College prepares students for certification as Federal Aviation Administration airframe and power plant mechanics.

**Microelectronics Technology.** The Microelectronics Technology program at the North Dakota State College of Science provides extensive hands-on training in the science and engineering aspects involved with manufacturing of micro-electronic sensing and communication devices.



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## RESEARCH, DEMONSTRATION AND TESTING

In today's innovation-driven economy, the research enterprise is having a big impact on the region's competitiveness and economic growth.

The University of North Dakota has established an international reputation for research and scholarship, notably in health sciences, nutrition, energy and environmental protection, aerospace and engineering. Recent, notable projects have been launched in neuroscience, ground water cleanup, spacesuit technology, high-tech coatings and alternative fuels.

UND is an anchor of the Red River Valley Research Corridor, an initiative championed by U.S. Senator Byron Dorgan to build world-class research centers and to support the region's growing high-tech sector.

UND operates a 55-acre technology park that hosts both emerging enterprises and established centers and units, and facilitates the transfer of university research advances to applications in business and industry. Prominent facilities that aid in this endeavor include the Ina Mae Rude Entrepreneur Center and the Norman Skalicky Technology Incubator.

Recent developments such as UND's Research Enterprise and Commercialization Park (REAC) and the National Center for Hydrogen Technology are furthering UND's research, development and commercialization capacity.

**Center of Excellence for UAS Research, Education and Training.** UND Aerospace, UND School of Engineering and Mines, the Northern Plains Center for Behavioral Research and the Center for Innovation recently joined forces to establish the Center for UAS Research, Education and Training. The Center was seeded with funding acquired by U.S. Senator Byron Dorgan from the Department of Defense, with additional funding from North Dakota's Centers of Excellence program.

The Center provides a vehicle for convenient collaboration with Grand Forks Air Force Base and the Fargo Air National Guard for recently designated UAS missions.

UND is also collaborating in UAS research and development with several private sector partners including Lockheed Martin, Frasca International, Inc. and Alion Science and Technology. In addition, UND Aerospace collaborates with the FAA Center of Excellence for General Aviation Research (CGAR) on integrating UASs into the national airspace system and with Mayo Clinic on a Flight Medicine Residency incorporating UAS training.



*"UND has long had a special relationship with Grand Forks Air Force Base, from our online space studies master's program created with base personnel in mind to the development of AgCam and our Spaceship One Simulator. We're especially excited about partnering with GFAFB in the emerging arena of unmanned aerial systems, which we believe will lead to all sorts of creative and innovative research and educational opportunities."*

**President Robert Kelley**  
University of North Dakota



**UND** UNIVERSITY OF  
NORTH DAKOTA



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## ▶▶▶ LEADING THE WAY IN ENERGY AND THE ENVIRONMENT

The Air Force is proactively seeking ways to use new and improved technologies to meet its strategic energy goals, while reducing its carbon footprint and vulnerabilities to commercial supply sources.

Meeting these objectives is accelerated by access to some of the world's leading research, development and commercialization organizations in Grand Forks and the Red River Valley Research Corridor.

The Energy and Environmental Research Center (EERC) at the University of North Dakota has nearly 60 years of experience in advancing energy and environmental technologies out of the laboratory and into the commercial marketplace.

EERC projects for the U.S. military include hydrogen fuel cell vehicles, hydrogen production technologies and renewable, drop-in-compatible jet fuels. Future R&D work will also support the UAS mission at GFAFB.

**Cold-Weather Test Center (CWTC).** The CWTC is envisioned as a proving ground for energy and transportation technologies that have the potential to be severely affected by cold-weather environments. EERC, working jointly with GFAFB and others, will support military initiatives focused on renewable energy, energy independence for GFAFB and energy technologies supporting rapid deployment.

New and emerging technologies for large-scale stationary applications, smaller-scale distributed applications and mobile applications will be developed and demonstrated at the CWTC, to include:

- Vertical wind turbines
- Small-scale wind turbine integration
- Hydrogen production
- Hydrogen fuel cell vehicles
- Renewable fuel production and testing
- Synthetic fuel production and testing
- Fuel cells for integrated heating and power production
- Cold-weather vehicle testing, including UAS
- Biomass combined heat and power systems
- Solar systems
- Others as the future unfolds



**EERC**

Energy & Environmental Research Center®





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## GRAND FORKS REGION OFFERS A WORLD OF OPPORTUNITY

The aviation and aerospace industry in the Grand Forks region is multi-faceted and comprised of a rich array of capabilities, resources and interests. The region (northeast North Dakota as well as northwest Minnesota) is home to several firms involved in various aspects of the industry ranging from research, to component manufacturing, to the assembly of aircraft.

Add to this strong industrial and technical base the success of aerospace sciences at UND and you have the ingredients for galvanizing the aerospace industry as a viable opportunity for future enterprises in the region.

The transformation of Grand Forks Air Force Base (GFAFB) to an Air Combat Command (ACC) mission that includes the deployment of Predator and Global

Hawk unmanned aircraft systems creates a new world of opportunities here in the region.

GFAFB now serves as the home to a Predator UAS squadron as part of the Department of Homeland Security's U.S. Customs and Border Protection mission. The 119th Fighter Wing of the North Dakota Air National Guard in Fargo is an important partner that is already engaged in UAS operations around the globe.

Individually, these assets and infrastructure hold tremendous potential for application to existing and emerging opportunities in the UAS industry. Together, these assets and infrastructure hold the potential for creating a robust UAS industry that will provide a framework for collaboration to build the UAS industry in the region.



*"The expansion of the unmanned aircraft program to the northern border represents a significant step forward in our border security efforts, and utilizes proven, effective technology to support our officers and agents along the border and enhance our partnerships with Canadian and U.S. law enforcement entities."*

**Major General Michael C. Kostelnik**  
**(Retired USAF)**  
**CBP Air and Marine Assistant Commissioner**

### The Region Offers a Unique Competitive Profile

