GREATER Fargo Moorhead Economic Development Corporation

Economic Development Planning Initiative

Cass/Clay Economic Plan

Driving high-wage job growth and economic prosperity in Fargo Moorhead

Introduction

The mission of the Greater Fargo Moorhead Economic Development Corporation (GFMEDC) is to grow and diversify the economy in Cass County, N.D. and Clay County, Minn. by attracting, expanding and retaining primary sector businesses. The GFMEDC has a responsibility to provide employment opportunities for all citizens of Cass and Clay Counties. We do that by focusing on growth among primary sector businesses – those that export the majority of their goods and services outside the area and therefore bring new wealth into the community. These types of businesses could be located anywhere. Examples of primary sector industries include manufacturing, back office support and technology.

Primary sector economic activity drives employment growth in all other sectors. When a primary sector business relocates or expands, it creates new jobs and may draw new workforce (and thus, population) into the community. Many primary sector businesses, regardless of industry, employ people in fields such as administration, human resources, marketing and accounting. Drawing new workers into the area increases the demand for housing, education, medical services and a variety of other goods and services. The community must meet this demand by increasing the supply – employing more people and selling more products in the process.

Fargo Moorhead's existing primary sector base of manufacturing, call centers and agricultural products has served us well thus far. These sectors employ a significant number of people in our community and have spurred growth for many years. The GFMEDC will continue to encourage business retention and expansion in the traditional primary sector. However, the impact of globalization and the rapid pace of change in the global economy means Fargo Moorhead must evolve and engage in new economic development strategies moving forward.

These strategies focus on identifying and pursuing growth sectors of the U.S. economy in which Fargo Moorhead has the potential to become a national or global destination. Growth sectors are target industries that are adding jobs in the United States and are projected to do so for many years.

One change of strategy, for example, must be in the area of business attraction and retention. Attraction and retention of our traditional industry was based almost entirely on costs – the cost of land, facilities, labor, taxes, and so on. Growth sector businesses are driven by different factors, the most important being access to a large pool of qualified labor and a critical mass of core knowledge infrastructure.

The Cass/Clay Economic Plan that follows presents the strategies and tactics that are necessary for growth in the years ahead.

The Process: How was the plan developed?

The Cass/Clay Economic Plan was developed over the course of approximately 20 months, beginning in January 2006. The process was initiated by the Greater Fargo Moorhead Economic Development Corporation with the assistance of professional strategic planning services from Eide Bailly, a CPA and business services firm. Dozens of individuals – community members, academic and business leaders – contributed to the final product. (Please consult Appendix A for a list of all participants.)

The volunteers and GFMEDC staff and board of directors engaged in the following activities between January 2006 and May 2008:

1. January 2006 – June 2007: Target industry group meetings. Brainstorming, researching, discussion of target technologies. Formulation of reports to steering committee.
2. March 2007 – August 2007: Steering committee meetings. Review of industry group reports. Fine-tuning of recommendations to GFMEDC board of directors.
3. April 2007 – July 2007: Consideration and approval of Cass/Clay Economic Plan by GFMEDC board of directors.
4. August 2007: Final plan presented to Cass County Commission. Unanimous approval by Commission.
5. May 2008: Final plan presented to Clay County Commission. Unanimous approval by Commission.

The Product: How is the plan structured?

The plan consists of five components that were identified by strategic planners as necessary to becoming a destination for high growth, high wage industries of the U.S. and global economies. These components are:

- Core Knowledge Infrastructure
- Entrepreneurial Infrastructure
- Telecommunications Infrastructure
- Air Service
- K-12 Science, Technology, Engineering and Math (STEM) Strategies

Strategic planners have recommended individual strategies and tactics within each component. Each strategy and tactic has its own priority level and funding breakdown.

Part I: Economic Review and Analysis

While the Fargo Moorhead metropolitan statistical area (MSA) economy of 2007 is healthy and experiencing modest growth, a variety of national economic experts project a number of demographic and economic challenges in the near future. These include:

- a deceleration of growth in the Fargo Moorhead MSA;
- negative net migration in the Fargo Moorhead MSA – i.e., more people moving away from the area than moving to the area;
- a decreasing number of high school graduates in Minnesota, North Dakota and South Dakota.

Because of these challenges, demographers and economists have not had a bullish outlook on the Fargo Moorhead economy. The reasons they cite include:

- migration of cost-driven industry,
- workforce availability,
- regional demographics,
- mature economy,
- lack of an emerging growth sector.

The last factor, lack of an emerging growth sector, is particularly relevant. Communities that are growing in population and economic activity across the United States fall into one of three profiles: retirement communities, vacation destinations and destinations for emerging sectors in the U.S. and global economy. An emerging sector is one that will drive job growth in the future; a sector that has not yet hit its employment peak and will continue to add jobs for the foreseeable future.

Fargo Moorhead's base of primary sector activity has traditionally been driven by industries such as manufacturing, agriculture and back office. These industries are incredibly important and have created our current economy; for these reasons and others, the GFMEDC will continue to provide support for existing businesses in these industries. However, these segments are no longer growing and experts project they will lose employment in the future. Therefore, pursuing them is not a strategy for growth.

Part II: Growth Sectors

The same economic experts that projected the challenges above also predict that technology-based industries will create the majority of high-paying jobs in the U.S. for the foreseeable future.

There are a number of potential sectors to pursue, and the GFMEDC examined seven potential industries by performing a flow-chart analysis that asked the following questions:

- Is this target industry growing and creating new jobs in the U.S. economy?
- Does this target industry pay high wages relative to the average?
- Is Fargo Moorhead a competitive place to conduct business in this target industry? If not, can we become competitive?

The three target industries that answered "yes" to these qualifications were information technology (IT), life sciences and physical sciences. All are growth sector industries.

Fargo Moorhead has a small base of companies in these target sectors, but in general has not had much success in this area. In most categories that technology companies consider when selecting locations, Fargo Moorhead does not compare favorably to other MSAs in the U.S.

Our traditional model of site selection has been focused on the primary sectors mentioned above – manufacturing, agriculture, and back office, for example – and is cost-driven. Site selection for technology companies in IT, life sciences and physical sciences are not driven by cost. These companies are driven by access to nationally-renowned core knowledge infrastructure and talent, research institutions, and an entrepreneurial and innovative environment.

Through our research we have also learned that communities successful in technology-led economic development have made focused investments in specialized technologies rather than whole industry sectors. Rather than focusing on life sciences in general, they have focused on a particular specialty within the life sciences, such as pharmaceuticals or stem cell research. Within the three target industries, teams comprised of members from the Tri-College University educational institutions (North Dakota State University, Minnesota State University Moorhead, and Concordia College), local industry leaders, and public sector individuals met to discuss specialized, or target, technologies. (For a list of participants, see Appendix A.)

Based on the capabilities and interest of the universities and local industry, the teams settled on two target technologies within the broader target industries:

embedded systems and vaccine development. Below is a brief description of each technology and the types of employment opportunities available:

Embedded Systems

Embedded systems are the systems of software and hardware that make devices and machines smart and allows them to communicate with one another. Smart technologies are a perfect example of embedded systems: from the computer that makes the components in your car or tractor talk to one another, to the smart utility meter that reads itself.

Embedded systems are fundamental to the automotive, consumer electronics, defense, telecommunications and automation industries, and the importance of embedded systems in consumer products continuously grows. Despite the incredible workforce demand, only a handful of universities offer programs in embedded systems, and there is currently no established destination for this industry.

A number of opportunities exist for embedded system research, development and commercialization in Greater Fargo Moorhead, including the following:

RFID & smart shelves
Smart buildings
Smart meters and the smart grid
Intelligent transportation systems
Smart borders and other Department of Homeland Security programs
Off-road/agricultural equipment standards

Careers

The following are average U.S. salaries according to a survey conducted by the Ganssle Group (2006):
Embedded Software Developer: $100,000
Hardware & Software Developer: $84,000
Hardware Designer: $80,000
Consultant: $110,000
Field Applications Engineer: $115,000
Higher management: $130,000
Project Manager: $100,000
Team Lead: $90,000

Vaccine Development

In the first decade of the 21st Century, the role of vaccines in healthcare is undergoing a radical change. Vaccines are still being used, as they have historically, to protect populations against infectious diseases such as chicken pox, human papillomavirus, diphtheria and tetanus. New vaccines are now being used to treat numerous non-infectious diseases, such as cancer and lupus, as well.

Advances in vaccine design and development requires the screening and testing of a substantial number of potential target proteins for each disease. To do so effectively, developing methods for high-throughput screening is essential.

Aldevron is a local biotechnology company engaged in the development of DNA-based vaccines. The use of DNA vaccines has been demonstrated to substantially enhance the effectiveness of positive immune response to the vaccine when compared to vaccines produced by traditional methods.

Careers

The following salaries are based on level two experience (out of five).

Biologist: $38,000 – 51,700
Biostatistician: $62,000 - 83,000
Chemist: $44,000 – 55,000
Clinical Data Manager: $76,000 - 93,000
Clinical Research Associate (CRA): *Technician.* $51,640 – 63,240
Drug Safety Specialist: $53,300 – 65,900
Medical Director: $140,000 – 211,000
Process Engineer/Manufacturing Engineer: $53,500 – 64,600
Quality Assurance Engineer: $49,500 – 60,500
Regulatory Affairs Specialist: $48,900 – 66,300

Part III: Cass/Clay Economic Plan

Through research of today's rapidly-changing U.S. and global economies and knowledge of how technology companies pick their locations, we have determined the most important features of a growth economy. Strategies and investment must be focused on the following five areas, which competitive firms in growing sectors demand:

- Core Knowledge Infrastructure
- Entrepreneurial Infrastructure
- Telecommunication Infrastructure
- Air Service
- K-12 Science, Technology, Engineering & Math (STEM) Strategies

Core Knowledge Infrastructure

The most critical factor in becoming a national destination for growth sector companies and high-wage employment is developing a critical mass of core knowledge infrastructure in target technologies. This is the cornerstone of the Cass/Clay Economic Plan.

Positioning the Cass and Clay County region as a national destination requires committed investment in two areas: a research component and an academic component.

Research Component: Centers for the Advancement of Emerging Technology
The research component is a unique characteristic of our plan compared to those of other communities. Much like federal research labs that drive economies across the United States – Sandia National Laboratory in New Mexico and California, Argonne National Laboratory in Chicago, and Idaho National Laboratory, for instance – the Cass/Clay Economic Plan recommends building or attracting a non-profit research institute specializing in the target technologies.

We anticipate leveraging local funds to attract private, state, federal and/or non-profit monies to build infrastructure for Centers for Advancement of Emerging Technology (CAET). This infrastructure may include:

- buildings to house CAET,
- state-of-the-art equipment and facilities,
- human resources, such as world-renowned researchers in disciplines related to the target technologies.

Our research structure will provide the flexibility that high growth businesses require for partnerships with the public sector. This formula is distinct from the

"old" model of economic development; traditionally, communities have given businesses grants to locate in their community and spur economic activity. In the research model, the community will be asking the businesses to make a local investment that will result in positive gains for both the company, which gains access to top-notch facilities and talent, and the community. Subsequently, the infrastructure in which we invest public funds stays here and provides tangible opportunities for us, our children and grandchildren, in the form of employment and internships.

At the same time, the CAET also benefit our local universities. These structures provide resources that the universities can capitalize on through:

- aligning curriculum with research being performed at CAET,
- promoting access to facilities and talent in the recruitment of faculty, researchers and students in disciplines related to the target technologies.

Academic Component

The academic component of core knowledge infrastructure involves the activities of our local higher education institutions, North Dakota State University (NDSU), Minnesota State University Moorhead (MSUM), Concordia College, Rasmussen College and Minnesota State Community and Technical College (MSCTC). The Cass/Clay Economic Plan recommends working closely with these institutions and supporting them in a variety of ways.

Significantly, the Plan recommends working with the universities to secure legislative approval and state and private funding for priority projects and programs that fall within the scope of the Cass/Clay Economic Plan. According to the visions of the respective institutions, this may include:

- new and better facilities, buildings and equipment,
- curriculum development,
- faculty development,
- hiring new faculty in specialized disciples that support the target technologies,
- recruiting students in disciplines that support the target technologies.

The academic component also involves a deeper utilization of the Tri-College University consortium. Tri-College is a unique partnership that allows students enrolled at any one of the institutions to take classes at the other two and apply the credits to graduation requirements at the home campus. Fargo Moorhead has the opportunity to take advantage of the complementary nature of the three universities' respective missions. Concordia and MSUM are primarily undergraduate institutions, while NDSU is a Ph.D.-granting research institution. Encouraging graduates of Concordia and MSUM to continue their education at NDSU will help feed graduate programs and allow these highly qualified

individuals to stay in the area and contribute to the local economy, particularly in disciplines related to the target technologies.

We also have the opportunity to utilize our academic institutions to create a type of advanced technology job training. By enhancing the opportunities for research within the curriculum, students gain the real-world experience that makes them more attractive to industry. The combined enrollment of NDSU, MSUM and Concordia equals nearly 25,000 students – a number that makes Fargo Moorhead noticeable to businesses looking to locate near a large pool of core knowledge capacity and a talented workforce.

smart states and communities around the country, not to mention globally, are engaged in the same process of identifying target technologies. In order to take advantage of the opportunities that present themselves, our plan emphasizes the need to continuously evaluate the changing economic landscape and adapt appropriately to pursue new opportunities in high-growth, high-wage industries.

Entrepreneurial Infrastructure

Entrepreneurialism is potentially the most critical long-term job creation strategy, and it is directly tied to the community's success in the area of core knowledge infrastructure.

As mentioned earlier, positioning Fargo Moorhead as a destination for growth sector companies requires building a critical mass of core knowledge infrastructure in specialized target technologies. Creating and nurturing this critical mass means we will improve our ability to recruit and retain high growth businesses as well as talented workers, researchers and university students.

A by-product of the critical mass is entrepreneurial activity. Collaboration between scientists, researchers, and students spawns ideas that may eventually grow into businesses. The purpose of entrepreneurial infrastructure is to create an environment that is most conducive to the success of start-up ventures. The recommendations of the Cass/Clay Economic Plan include developing metro-wide strategies in the following priority areas:

- infrastructure and incubation facilities,
- access to capital,
- education, skills and human resources.

Infrastructure and Incubation

One of the most critical issues is a complete, metro-wide incubation strategy. Incubators are organizations that support the entrepreneurial process, helping to increase survival rates for startup companies by providing a variety of services including physical space, technical support, administrative services and business networking. Currently the Fargo Moorhead MSA is home to the Technology Incubator at NDSU, located at the NDSU Research & Technology Park. The Technology Incubator is designed specifically for start-ups engaged in engineering, electronics, and IT.

The Cass/Clay Economic Plan also supports the development of wet-lab incubation space, which will specifically address the needs of life science companies. In addition to complementing the dry lab facilities at the Technology Incubator, the two facilities would also share support services, thereby conserving human and financial resources.

Access to Capital

Access to capital is also critical because eventually many entrepreneurs must seek outside capital. The Cass/Clay Economic Plan recommends measures that will increase the incentive for individuals to invest in start-up companies. This includes supporting legislation on the state and federal levels for expansion of

seed capital tax credits and supporting the creation of a Fargo Moorhead pre-seed investment fund that would target higher risk technology companies.

Education

Entrepreneurialism must be encouraged in our schools at both the K-12 and university levels. It is especially important for young children to learn the value of education in the STEM-related disciplines, as well as being taught the value of thinking creatively and innovatively and taking risks.

The Cass/Clay Economic Plan also recommends a Tri-College University Entrepreneur degree with specialized curriculum. Such a specialization would be promoted to students in business as well as students in STEM subjects, in order to promote the applicability of science and technology in creating new businesses.

Telecommunication Infrastructure

Telecommunication infrastructure is a vital component of keeping Fargo Moorhead connected to the rest of the country and world and moving information quickly, efficiently, and affordably.

The Cass/Clay Economic Plan recommends working with the federal and state governments to secure funds for the recurring costs of operating the Northern Tier fiber optic information services network that connects NDSU with other research institutions across the country. The plan also recommends working with the Minnesota and North Dakota state government and the Tri-College University institutions to extend the network from NDSU to MSUM and Concordia.

Air Service

Access to competitively-priced, reliable and business-friendly air service is essential to growth sector businesses, particularly those with a national or global presence. Fargo Moorhead is home to dozens of businesses with headquarters, divisions, suppliers and/or customers all around the world, and air travel is an important part of their businesses.

In order to improve service for business travelers, as well as leisure travelers, the GFMEDC will continue to work with the Fargo Municipal Airport Authority to:

- increase the number of daily departures and arrivals at Hector International Airport,
- improve schedules, and
- attract new carriers, to increase competition and drive down fares.

Air service development is very competitive because cities nationwide recognize the critical role it plays in the site selection process. In order to win service, these cities often offer major incentives, including multi-million dollar grants, to attract new carriers and non-stop routes.

The Cass/Clay Economic Plan recommends offering new and expanding airlines incentives as a closer in situations where Fargo Moorhead already offers a strong business case. In these situations, incentives would influence the decision to locate in Fargo Moorhead but would not be the main reason. The Plan also recommends creating a regional air service development fund with support from citizens in the surrounding region.

K-12 Science, Technology, Engineering & Mathematics (STEM) Strategies

One of the new realities of economic development concerns the role of education in the knowledge economy. A significant portion of industries leading economic growth today require expertise in scientific and technical areas related to the STEM disciplines. As a community, it is our responsibility to better prepare young people for the types of jobs the economy will demand and reward. At the same time, we are equipping existing businesses and potential new ones with a talented and knowledgeable labor pool.

This plan recommends employing a number of strategies to better increase awareness of and achievement in STEM fields. This includes:

- employing a community-wide coordinator of STEM activities between K-12, local universities and the business community,
- creating a task force of education leaders, business people and community members to advance awareness and participation in STEM subjects among students and parents,
- participating in local and state discussions and policy-making regarding college scholarship programs directed at students pursuing degrees in STEM disciplines.

Appendix A: Planning Participants

IT = information technology
LS = life sciences
PS = physical sciences
E = entrepreneurial infrastructure
S = steering committee

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