

## North Central Missouri College – Barton Site

### Off-Site Center Proposal

#### Delivery Site:

Barton Site  
96 SE 8<sup>th</sup> Avenue  
Trenton, MO 64683

**Mode of Program Delivery:** Traditional and online instruction

#### Cooperative Partners:

Northwest Missouri State University  
Trenton R-XIX Public Schools  
Wind Capital Corporation  
City of Trenton  
North Central Missouri College Foundation  
Northwest Missouri Workforce Investment Board

#### Authorization

Dr. Neil Nuttall, President

#### *Contact Information:*

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Note:

*There are three letters of support attached to this proposal; two additional letters of support were mailed directly to MDHE by the supporting entities. Thank you.*

**Proposal for Establishing a Residence Center at the Barton Site**  
**Submitted by**  
**North Central Missouri College**  
**To**  
**Missouri Department of Higher Education**

**Overview**

[North Central Missouri College \(NCMC\)](#) respectfully seeks to establish a Missouri Department of Higher Education (MDHE) approved resident site at the Barton Site in order to develop buildings, program specific labs, experimental plots and offer existing programs/courses to meet the needs of the growing Alternative Energy and Agricultural opportunities that exist within in the service region, state and nation. It is the intent of this proposal to seek approval from the Missouri Department of Higher Education to use the location as an approved site to offer current and proposed programs that are available at the main campus.

The programs and services to be offered at the Barton Site are consonant with the role and scope of the main campus and are consistent with the mission of the college. The purpose for the Industrial and Energy Systems Technology Program is to meet the increasing demands for alternative energy in the Northwest Missouri Region. The career paths in “Green Energy” are expanding, and this program will help meet the growing demand in wind, solar, and bio-fuel technology, as well as industrial maintenance technology. Additionally, the program will prepare students for a career at the completion of the A.A.S. Degree. North Central Missouri College has articulated a transfer agreement with Northwest Missouri State University for transferability to the Bachelor of Technology Degree.

The Barton Site is to be developed as an extension of the college in order to provide access to equipment and labs not present on the main campus. No changes are anticipated in instructional methods, current course structure and/or support services when available at the Barton Site. The programs proposed for approval in this document will not change the role and scope of services offered currently by NCMC. While no programs will be available for complete degree completion at



Barton Site Advertising on Highway 65

the Barton Site for several years until all construction is complete, NCMC also seeks approval to offer Industrial and Energy Systems Technology and Agricultural/ Natural Resources programs to prepare for future enrollment and expansion.

NCMC is not seeking support for the Barton Site through the raising of local taxes in its current district or the addition of fees from its service region now or in the near future. The funding for the project originated from several sources including individual contributions, the NCMC foundation, Federal grants, and equipment purchases which were funded by the Training for Tomorrow grant from the Northwest Workforce Investment Board (WIB). Financial support for the Barton Site will be provided by the main institution and provided with its own budget for operation.

The approval of the Barton Site will allow NCMC opportunities for classroom, lab and authentic learning in specialized classrooms and labs designed for agriculture and alternative energies that are currently unavailable at the main campus in Trenton or within the region. The [Barton Site](#) (138 acres) is located outside of the south city limits of [Trenton, MO](#) just off of highway 65 and is adjacent to the Trenton City limits located approximately one mile to the southeast of the [main campus](#). The current long range plan indicates four buildings to be added based on financial support. Once approved by MDHE, NCMC will seek the [Higher Learning Commission](#) approval of the Barton Site as required by North Central Association of Colleges and Schools regulations.

### **Needs Assessment**

Driven by its mission statement and [Strategic Plan](#), North Central Missouri College strives to meet the current educational demands of its 16 county service region and students by consistently analyzing its ability to meet those changing needs through advisory committee recommendations, regional businesses/industry surveys, student suggestions and current market demands. The decision to develop the Barton Site was initiated as a direct result of this process.

### ***North Central Missouri College Mission Statement***

To help those in our education/business community attain their goals through open admission, reasonable costs, and relevant curriculum and services delivered by a caring, competent staff in a safe, technology-rich environment.

### ***Beliefs***

- NCMC cares about the success of individuals and provides them with the resources and environment necessary to achieve our fundamental purpose: teaching them to learn how to learn.
- NCMC values the potential of individuals and promotes their personal and intellectual growth as lifelong learners.
- NCMC employees model the responsibility and integrity we expect from others in the college and the community.

### ***Parameters***

**NCMC will always**

- Listen to the needs of its community
- Be sensitive to the safety of those on campus
- Encourage creative and critical thinking as well as risk taking
- Encourage reflective thinking and practices for continuous improvement
- Separate people from issues
- Always attempt to accommodate students regardless of socioeconomic circumstances

**NCMC will never/not:**

- Tolerate demeaning or endangering behaviors
- Offer programs and services that are not in line with the Strategic Plan and whose benefits do not justify the costs
- Be driven solely by the availability of resources

**Objectives**

- Increase the availability of and optimize the management of resources to achieve an excellent educational environment
- Form and enhance strategic alliances to sustain a dynamic organization
- Tailor our curriculum and services to help individuals meet the challenges of an ever-changing world
- Attract and retain a caring and competent staff by valuing the talents and potential of each individual

The primary purpose of the Barton Site is to provide students the ability to engage in classroom and authentic learning through existing and proposed new curriculum and utilize state-of-the-art technology provided by the labs and classrooms currently unavailable to students on the main campus. NCMC desires to offer classrooms and labs that will lead higher education into areas that are unique and nontraditional to meet the needs of the region in a cost-efficient manner. The Barton site will offer Agricultural and Alternative Energy students the opportunity to engage in real world experiences on site before entering the workforce. According to Jamie P. Merisotis, President and CEO for the Lumina Foundation for Education in the *Lumina Foundation Focus Magazine, Summer 2010*, “We should be expanding and strengthening lower-cost, nontraditional education options through modified regulations. And we should be investing in institutions that demonstrate the results of adopting good business practices.”

Because of the expertise needed to teach the programs to be offered, courses at the Barton Site will be taught by existing full-time faculty as a part of their required 15 hour semester load. However, as the college grows and course sections expand, program-specific courses will be taught by faculty with the industry and field credentials necessary for instruction in a particular program. General oversight of the site will be managed by the administration located on the main campus (approximately one mile away) and daily operations will be monitored by the Barton Site manager whose responsibility includes overseeing the use of buildings, scheduling classrooms and meetings rooms, general maintenance and community relations.

## **Available Student Services**

The majority of courses required for a degree or certificate for students attending classes at the Barton Site will be available on the main campus one mile away. Until construction is completed within the next five-ten years, the site will not have the capacity to offer 50% or more of the courses needed to earn a certificate or degree due to its physical classroom and lab limitations until all buildings are completed. Because of its close proximity to the main campus, NCMC students attending classes at the Barton Site have the same access to all services as any student on the main campus. Barton Site students will have access to [Student Services](#) including Admissions, Transfer Information, Financial Aid, Tutoring, Advising and the Registrar. Most services are also available online to all students including those at NCMC's outreach locations as well as the Barton Site. Every NCMC student is provided an NCMC email address at the time he/she is enrolled and has access to all NCMC services necessary for curriculum, registration, advising and financial aid through their personal SAIL account. Students also have access to MOBIUS through their [SAIL](#) accounts allowing them to access over one million books and periodicals from any computer on or off campus. Students attending the Barton site may use computers located at the site in the labs and classrooms to access student service information.



As indicated by the map above, North Central Missouri College services the largest community college geographic region (16 counties covering over 15,000 square miles) in the state of Missouri with a primarily agricultural based economy. The area has the historical distinction of being known as “land-rich-and-population-poor”. Driven by its mission statement and strategic plan designed to serve such a vast region, NCMC seeks to establish a [Missouri Department of Higher Education \(MDHE\)](#) approved resident site at the Baron Site in order to develop buildings, program specific labs, experimental plots and offer existing and proposed programs/courses to meet the needs of the growing Alternative Energy and Agricultural educational and employment opportunities that exist within in the service region, state, and nation. According to the [USDA New Era Rural Technology Competitive Grants Program](#), “Agriculture-based renewable energy offers many rural areas a means of strengthening their economy while helping meet the nation’s energy demands. Many rural communities have struggled for decades with the loss of jobs and income from restructuring in the agricultural and manufacturing sectors. Rural community colleges and postsecondary, degree-granting advanced technological centers promote access to educational programs and aid in workforce development that is vital to creating rural economies that are competitive in the global marketplace.” NCMC’s goal is to fulfill the demand for graduates needed to fill high demand occupations in a region where there are no alternative energy or natural resource programs, classrooms or labs in existence.

According to the [Missouri Economic and Research Information Center \(MERIC\)](#), “Access to skilled workers is one of the foremost criteria that companies and site selectors consider when locating and expanding business in Missouri. The ability to show companies an available and sustainable pipeline of skilled workers continues to be the difference in Missouri’s ability to turn economic development assets into high quality job opportunities.” NCMC seeks to establish and develop a pipeline of skilled workers in order to meet the growing demand for employees in these high demand occupational areas. Additionally, the nonprofit [American Solar Energy Society \(ASES\)](#) states that as many as one out of four workers in the United States will be working in the renewable energy or energy efficiency industries by 2030. This “green collar” jobs report shows that these industries already generate 8.5 million jobs in the United States and with appropriate public policy, could grow to as many as 40 million jobs by 2030. The icing on cake is that these 40 million jobs will not just be engineering-related but will also incorporate professionals from manufacturing, construction, management and agriculture (*source: Solar Today, Jan/Feb 2008*). Clearly the need is there and NCMC seeks to meet that need by offering programs at the Barton Site which provide state-of-the-art equipment and labs for authentic learning.

North Central Missouri College is committed to offering selected alternative energy and agriculture natural resources courses at the Barton Site beginning in the fall of 2011 pending approval by MDHE. The Barton Site will also enhance a long-standing articulation agreement between NCMC and Northwest Missouri State University by providing further educational opportunities in agricultural and alternative energy fields for students within in the region. NCMC has historically demonstrated its ability and commitment to offer higher education course work within its rural sixteen county region over its past history with outreach locations in Chillicothe, Brookfield, Bethany and Maryville.

The Barton Site also will help increase the current low number of individuals within the region who have higher education experience or are seeking higher education. According to the data provided by the [Missouri Economic and Research Information Center](#), the sixteen county region served by North Central Missouri College has a very low percentage of individuals who currently have access to higher education indicating the need for affordable and accessible higher education opportunities. The chart below demonstrates the need for increased higher education opportunities in Northwest Missouri, particularly for students needing some college and/ or Associate’s degree to enter the workforce as quickly as possible. By offering authentic learning and professional classes at the Barton Site, NCMC will help increase the number of qualified students to enter agricultural and alternative energy professions within the region focusing the counties of Grundy, Livingston and Mercer where the largest percentage of those attending NCMC students live.

County	Total population (ages 25-34)	Some college, no degree	Associate's degree
Nodaway	2,271	515	72

Atchison	678	126	59
Mercer	358	88	28
Grundy	1,076	212	107
Andrew	1,908	467	126
Gentry	667	177	37
Linn	1,388	291	127
Holt	542	116	32
Putnam	555	111	62
Livingston	1,657	326	106
Caldwell	929	223	64
Daviess	832	195	49
Worth	200	61	6
Harrison	880	249	45
DeKalb	1,804	360	52
Sullivan	879	131	41
<b>TOTAL</b>	<b>16624</b>	<b>3648</b>	<b>1013</b>

NCMC acknowledges that providing greater access to higher education within the Northwest Missouri region has been a challenge due to regional socioeconomic factors, the recent downturn in the economy and its immense geographic area. According to the [National Community College Benchmarking Project](#) data, the median household income for the NCMC region is \$30,041; however, this data is based on income which including larger urban areas whereas most of the region is rural. NCMC is addressing these challenges through offering innovative courses/training necessary for immediate employment within agricultural and alternative energy fields where the need is evident. The socioeconomic factors of the Northwest Missouri region presents the greatest challenge to attracting potential students for North Central Missouri College and reveals the necessity of offering additional high-demand training and higher educational opportunities in the region. According to [USDA \(2008\) data](#), The North Central Missouri College sixteen county region has an average of 15.2% of its residents living in poverty:

Counties	Percentage of Residents Living in Poverty
Atchison	13.8
Nodaway	19.0
Worth	14.6
DeKalb	16.1
Daviess	15.3
Mercer	14.3
Livingston	14.7
Sullivan	17.0
Holt	15.7
Andrew	9.4
Gentry	14.3
Harrison	16.7
Caldwell	14.6
Grundy	16.9
Putnam	18.2
Linn	16.3

Average	15.20%
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Fueled by the recent decline of the economy and an unemployment rate of 8.2% combined with 15.2% poverty rates in the region contribute to residents leaving the region in order to find employment. In order to meet the needs of the dislocated workers and the unemployed, NCMC, through its partnership with the Northwest Investment Board continue to offer job training in areas in high demand occupations such as alternative energy. The NCMC main campus will support the programs at the Barton Site. These programs are directly related to the need for agricultural and alternative energy programs that prepare individuals to enter the fields as quickly as they are trained. North Central Missouri College recognizes the need to provide necessary higher educational opportunities to the residents of the rural region who are economically distressed and strives to meet those needs in accordance with its mission by offering programs at the Barton Site. According to [President Obama \(2009\)](#) in comments made to Macomb Community College students, "jobs requiring at least an associate degree are projected to grow twice as fast as jobs requiring no college experience in the coming years." Clearly there is a strong need for promoting and developing programs for high-demand occupations, particularly those requested by this proposal at NCMC and other rural community colleges in the state.

While the socioeconomic climate in the Northwest Missouri region may not be optimal, the offering of the programs related to alternative energy and plant/animal sciences bring increased economic opportunities to the region through training for high demand occupations as indicated by the U.S. Department of Labor's [Occupational Outlook Handbook 2010-2011](#), "Workers in installation, maintenance, and repair occupations install new equipment and maintain and repair older equipment. These occupations are projected to add 440,200 jobs by 2018, growing by 8 percent. As construction on these types of projects increases over the projection period, installation, maintenance and repair workers will be needed in greater numbers."

NCMC has witnessed outstanding support for the development of the Barton Campus through financial, utility, instructional and the local community. Attached to this proposal are letters from business, industry, business, educational institutions and individuals who have committed to supporting the development offerings at the site and were included in the survey. Supporting entities include but are not limited to the following:

- |   |                                     |                              |
|---|-------------------------------------|------------------------------|
| City of Trenton                               | Northwest Missouri State University | Trenton R-XIX Schools        |
| Kansas City Power and Light                   | Green Hills Action Planning Agency  | Grand River Technical School |
| Modine Industries                             | ConAgra Industries                  | Wind Capital Group           |
| Northwest Missouri Workforce Investment Board |                                     |                              |

## Market Demand

According to the Missouri [Economic and Research Center \(MERIC\)](#), a large majority of the forecasted career openings will be in the agriculture and alternative energy fields to be offered by NCMC over the next ten years. The demand for these positions will only increase as will the need for training and education for these high demand occupations. As a result, NCMC plans to offer agricultural and alternative energy courses at the Barton Site utilizing the land, labs and classrooms for authentic learning experiences. The site will also provide the opportunity for applied learning through internships and provide the necessary facilities for important opportunities for authentic learning and real world application. Industry and public research indicates the current and future need for technically skilled workers. Area industry representatives have stated that need will be greater when current employees begin to retire in the next five years. When combined with the current lack of potential replacements with skilled training, the need is magnified. MERIC's *Green Jobs Report (2010)* states that, statewide, the shortage of workers with knowledge/skills and a shortage of available training programs are two existing barriers for hiring more workers. The proposed programs will train students in skills using a multi-disciplinary technical approach. Local industry has communicated support for the proposed program.

Attached to this proposal are letters of support for the Barton Site from several of NCMC's partners and constituents who recognize the importance of developing partnership opportunities with NCMC in order to provide the region with the higher educational needs necessary for a thriving economy. Nationally and regionally agricultural and alternative energy demands are increasing. Areas such as wind, solar, bio fuels, ground source heating are programs necessary to meet the forecasted high demand jobs of the future. The demand for training wind energy technicians continues to grow and according to the [2010 Wind Industry Market Report](#), "To ensure a skilled workforce across the wind energy industry, 205 educational programs now offer a certificate, degree, or coursework related to wind energy. Of these 205 programs, the largest segments are university and college programs (45%) and community colleges or technical school programs (43%). Despite the economic downturn, the demand for small wind systems for residential and small business use (rated capacity of 100 kW or less) grew 15% in 2009, adding 20 MW of generating capacity to the nation. Seven small wind turbine manufacturing facilities were opened, announced or expanded in 2009" and according to the [2009 Wind Energy Report](#) "The global financial crisis and lower wholesale electricity prices have negatively impacted the near-term growth prospects for the wind power industry, while new federal policies are pushing the industry towards continued aggressive expansion." While the economy has negatively affected many of the current energy producers, it has positively impacted the need for expansion in the wind energy area.

NCMC's long range plan includes offering programs in other alternative energy areas such as solar heating and cooling, bio fuels and recycling. With the constant demand for workers in these areas, NCMC and [Northwest](#)

[Missouri State University \(NWMSU\)](#) have partnered in developing the programs and research opportunities at the Barton Site when approved by the Missouri Department of Higher Education. NWMSU plans to utilize a 20 acre portion of the Barton site and experiment with growing alternative energy plant systems including products such as corn, switch grass and soybeans in order to meet the need for future biological technicians and scientists. According to the Occupational Outlook Handbook (2010-2011), “Employment of biological scientists is projected to grow 21 percent over the 2008—18 decade, much faster than the average for all occupations, as biotechnological research and development continues to drive job growth. Biological scientists enjoyed very rapid employment gains over the past few decades—reflecting, in part, the growth of the biotechnology industry.” <http://www.bls.gov/oco/ocos047.htm> . There will continue to be an increasing need for agricultural specialists in the immediate future that will sustain the enrollment necessary for establishing authentic curriculum to be offered at the Barton Site. According to MERIC, agricultural managers and technicians are listed in the Northwest Regions Top 50 occupations for the years 2006-2016. [www.missourieconomy.org](http://www.missourieconomy.org)

As a result of articulation agreements between NCMC and NWMSU, while students earn certificates and AAS degrees in agriculture and alternative energies; they are also earning credit that will apply toward a Bachelor of Technology degree at NWMSU.

### **Student Need**

As a community college, NCMC is constantly challenged to respond quickly to the higher educational needs of the students within its sixteen county region. NCMC’s response to this demand has been to expand its programs and curriculum by actively engaging with its advisory committees, regional business and industry, the Chamber of Commerce, the regional Workforce Investment Board and suggestions by other regional constituents. In response to the educational need determined by the above groups, NCMC partnered with [Crowder College](#) and currently provides students in the region the opportunity to earn a [Wind Energy Technician certificate](#). This development came as a direct response to the regional wind farm corporation and other constituents expressing the need for local wind technician training within the region. This responsiveness to the educational needs of the region will provide opportunities for residents to qualify for good paying careers in alternative energies now and in the future. According to Ed Perez, Vice President of Operations for [Wind Capital Group](#), “Our partnership with North Central Missouri College is critical in the current economic climate. While many traditional jobs are disappearing, our need for trained wind energy technicians is great in such a new field, particularly for our two wind farms located in the service region of NCMC where unemployment rates are constantly higher than average”. NCMC has also trained workers in the past few years for local industries such as ConAgra, Modine and Landmark to name a few. Representatives from each of these industries have or are currently serving on one or

more of NCMC’s advisory committees and provides valuable and timely knowledge to NCMC about the current employment opportunities. North Central Missouri College sets forth in its mission to provide the opportunity for those in our education and business community to achieve their professional goals. It is important to meet individual and industry need by providing skills necessary for success. It is imperative these individuals attain and retain employment, have the opportunity for professional development and advancement, as well as the potential for furthering their education. The Barton Site and its program will provide a learning/training opportunity that does not currently exist for residents in this rural area.

Additionally, NCMC students have expressed a clear need for adequate facilities, classrooms and labs allowing for authentic instruction in the areas of plant, animal and alternative energy sciences. Currently, these needs are addressed in a variety of unacceptable means such as dissecting pigs in the back of the instructor’s truck or on the sidewalk at the main campus. In support of the Barton Site, Premium Standard Farms has donated financially to the project to make sure students have adequate resources with which to train potential employees. Equestrian needs are addressed by utilizing the facilities of a former faculty member’s horse farm approximately 12 miles from the main campus which raises many liability issues. Also, there are currently no facilities/labs/acreage to address the student need for observing and studying plants available to NCMC students. NCMC has no classroom or lab space for electronic or wind energy simulators or access to a wind energy turbine. In response to this regional need NCMC has delayed plans to renovate an on-campus academic building in order to provide students the opportunity to learn in a state-of- the-art environment and provide students the above necessities. The college has focused its efforts in developing the Barton Site including the addition of a 100’ wind turbine for demonstration and training purposes that was erected in February 2011. North Central Missouri College sets a goal in its mission to provide access to higher educational opportunity for those in the region and community to achieve their goals. It is important NCMC meet individual and industry needs by providing skills necessary for success. The Barton Site and proposed programs will provide a learning/training opportunity that does not currently exist for residents in this rural area. The target population is anyone who desires entry into a technical skill program or alternative energy program.

Student enrollment projections for the next five years at the Barton Site are listed below and include the projected total number of students in agriculture and alternative energy courses who will utilize the Barton Site facilities.

**Student Enrollment Projections** (Barton Site - Agriculture and Alternative Energy courses)

<b>Year</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Full Time</b>	9	12	13	14	16
<b>Part Time</b>	3	3	4	4	4
<b>Total</b>	12	15	17	18	20

- An estimated 11 full-time education majors will be in the program by the end of five years.
- An estimated 73% full-time enrollment and 27% part-time enrollment will be in the program by the end of five years.

### Student Retention Projections

Year	1	2	3	4	5
Full Time	6	6	8	10	12
Part Time	2	3	3	3	3
Total	8	9	11	13	15

- The program will have seven graduates per annum after three years of implementation and 11 graduates after four years of implementation.
- Students will have the opportunity to receive specialized training in their specific emphasis area: alternative fuels, wind, solar or industrial maintenance.
- Students will have the opportunity to obtain certain industry licenses, registration and/or certifications to go along with the program.
- Students will be subject to graduation requirements of the College.
- Students will be expected to seek outside certifications or licensure from an outside accrediting body.
- The program is expected to provide students with 100% career placement or further educational opportunities.
- Graduate Follow-up Surveys are completed annually. The expected satisfaction rate is 90% or greater.
- Employer Surveys are completed annually with feedback from the program advisory committee. Results of the employer surveys will reflect a high satisfaction rate of 90% or greater.

### Local, National and Regional Need

The development of the Barton Site is in clear alignment with the [Missouri Governor's agenda](#) for higher education. The governor attended the groundbreaking of the Barton site and commented, "Missouri has always stood at the cutting edge of agricultural research and natural resources management, the funds available through our Training for Tomorrow initiative will be put to excellent use by North Central Missouri College to prepare even more Missouri students to compete for the jobs of the future in sustainable agriculture, natural resources management and renewable energy."



Governor Nixon dedicating the Barton Site in September 2010.

On a national level the need for developing alternative energy is now considered important by a large segment of the American population. According to a recent poll conducted by the [American Wind Energy Association](#) (2010), "A majority of Americans -- 82% -- believe the nation's economy would be stronger (52%) or the same (30%) if we used more renewable energy sources. A majority of Americans -- 77% -- support a national Renewable Electricity".

Developing programs preparing people to enter the alternative energies field is now considered essential by a growing number of the population. For many years there has been an interest in developing alternative energy programs, however, the economical conditions prevented development due to cheaper petroleum alternatives. Today, the economic picture has presented a scenario where development is not only economical, but profitable for the long term. Due to this interest and need for training alternative energy workers, NCMC is responding to a national demand. Similarly, other fields of agricultural have also increased in demand due to being directly or indirectly related to the demand for alternative energies. According to [Career Planner.Com](http://www.careerplanner.com), “Advances in biotechnology have opened up research opportunities in many areas of agricultural and food science, including commercial applications in agriculture, environmental remediation, and the food industry. Interest in the production of biofuels, or fuels manufactured from agricultural derivatives, has also increased. Some agricultural scientists work with biologists and chemists to develop processes for turning crops into energy sources, such as ethanol produced from corn.”

In an effort to determine the regional and local need for the Barton Site, NCMC developed twelve question survey available in the appendix of this proposal. The survey was sent to 74 regional high school agricultural instructors, 6 area vocational technical directors, 4 regional universities (including the University of Missouri), 14 area and regional businesses and industries, 15 NCMC foundation board members, 5 NCMC administrators and 20 NCMC agricultural advisory committee members for a total of 136 surveys. There were a total of 71 respondents for a return rate of 53%. The results of the survey indicated overwhelming local and regional support for the development of the Barton Site and 93% agreed or strongly agreed with the need to meet alternative energy education needs in the region. The results also indicate the regional understanding among all groups that there is a necessity to develop a well educated and trained agricultural and alternative energy workforce in the NCMC service area.

### **Societal Need**

A changing state and national economy will create opportunities for technically skilled workers. [MERIC's Green Jobs Report \(2010\)](#) identifies energy production, manufacturing, and farming as three of the six sectors of Missouri's green economy. Employees with skilled training are currently needed and will be greater as the current workforce experiences retirements and position advancements.

In Northwest Missouri, *MERIC* indicates employment in two of the fastest growth industries will be repair and maintenance positions increasing from 961 to 1,157 (+20.4%) and professional, scientific, and technical services positions increasing from 2,165 to 2,688 (+24.2%) from 2008-2018. Thirty seven percent (37%) of green employers indicate alternative energy as a critical knowledge and skill set for Missouri's green economy.

Many of the major regional employers confirm their concern for the large amount of expected retirement in the near future. As new technologies are incorporated and embedded in nearly every job, it is imperative the future workforce has skilled training current with the latest technological advancements and skill sets. This program is also designed with continuing education and stackable credentials in mind. Licenses, certifications, and two year degrees will be offered, thereby providing an avenue for an individual to reach his/her professional development goals and, ultimately, their earning potential. The program design will allow a working individual seeking additional training in a particular skill the opportunity to take a single course or allow an individual to pursue a certificate or degree full-time. The program will also complement the training an individual might receive at an area technical school/career center by offering higher level and more specific technical training.

Clearly the need for expansion of higher educational services in the Northwest Missouri region is necessary to meet the growing demands of the changing marketplace. As indicated in the [Imperatives for Change: A coordinated Plan for Missouri Department of Higher Education](#), the request for development and curriculum offering at the Barton Site align with the Missouri Department of Higher Education and North Central Missouri College's desire to meet the needs of the increasing enrollment in higher education specifically in high career demand areas. Not only will the offering of agricultural and alternative energy programs at the Barton Site align with local, regional and state initiatives for job creation, it also falls in line with new federal emphasis in these fields. According to [President Obama](#), "... The hard truth is that some of the jobs that have been lost . . . won't be coming back. They are casualties of a changing economy. And that only underscores the importance of generating new businesses and industries to replace the ones we've lost, and of preparing our workers to fill the jobs they create."

Higher Education is currently in a rapid state of transition as it adjusts to meeting the demands of new occupations that require new skills and training. Due to local, regional and student demand, NCMC and other community colleges have been asked to "turn on a dime" and quickly respond to these increasing need for training and educating a workforce to meet the need. NCMC has listened to the national, state, regional and local demand for training and educating students in these areas and as a result, NCMC developed a [strategic plan](#) which includes planning for such programs leading to the need for the addition of the Barton Site. This site comes as a direct response to potential student's request to offer courses and programs that will meet the current needs of the marketplace.

### **Methodology**

Resources for this proposal came from several sources including MERIC, USDA, MDHE, DESE and Wind Energy Market Reports. Other sources were included internal to the College where appropriate.

## Duplication and Collaboration

NCCMC is the only community college in the 16 county region of Northwest Missouri. The Barton Site and its planned program offerings of alternative energies and natural resources will be the only programs in the Northwest Missouri region to offer such important and timely programs.

## Evaluation of Specific Courses and Programs

The professional courses listed within the Industrial and Energy Systems Technology and Agriculture and Natural Resources programs are planned to be offered at the Barton Site as space and resources become available. The initial years of operation at the Barton Site will provide students with courses from the new proposed programs; however, the Site will not offer 50% or more of courses that can be used toward any program or degree. Simultaneous to the Barton Site proposal, NCCMC is also seeking approval for the Industrial and Energy Systems Technology certificate and degree to be offered at the Barton Site. The Agricultural and Natural Resources certificate and degree have previously been approved by the MDHE. When fully operational the Barton Site will offer the program professional courses below:

### Industrial and Energy Systems Technology (AAS)

Microcomputer Applications  
English I  
American History or National Government  
Speech  
Intermediate Algebra  
Employment Strategies  
**Total credits:** 46-48 (Depending on Emphasis Area)

**Emphasis Area:** Alternative Fuels: Total Credits: 46

Introduction to Chemistry  
General Biology  
Agriculture Economics  
Plant Science  
Plant Science Lab  
Crop Science  
Programmable Logic Controllers  
AutoCAD I  
Biomass Crops  
Introduction to Biofuels  
Biodiesel Production  
Bioethanol Production  
Biogas Production  
Biofuel Systems Technology  
Biofuel Technology Internship

### Agricultural and Natural Resources (AAS)

Soils and Fertilizer  
Horsemanship  
Soils and Fertilizer Lab  
Plant Science  
Plant Science Lab  
Microcomputer Applications  
Agriculture Economics  
Principles of Light Horse Training  
Animal Science  
Animal Science Lab  
Farm Management and Records Analysis  
Business Communications  
English I  
Horseback Riding I  
Accounting I  
Crop Science  
American History or National Government  
Horseback Riding II  
Speech  
Agricultural Credit and Finance  
Agricultural Math or requirement  
Advanced Light Horse Training  
Employment Strategies  
Agriculture/Natural Resources Internship

**Emphasis Area:** Solar: Total Credits: 48

Introduction to Physics  
Introduction to Electronics  
Basic Electricity I  
Basic Electricity II  
Materials of Construction  
Residential Plumbing  
Programmable Logic Controllers  
AutoCAD I  
Introduction to Solar  
Passive Solar  
Passive Solar Lab  
Solar Thermal Systems  
Solar Thermal Systems Lab  
Solar Electrical Systems  
Solar Electrical Systems Lab  
Industry Standards  
Solar Technology Internships

**Emphasis Area:** Wind: Total Credits: 46

PS108 Introduction to Physics  
MF120 Introduction to Electronics  
MF122 Basic Electricity I  
MF126 Basic Electricity II  
CT107 Materials of Construction  
MF150 Principles of Safety  
MF141 Programmable Logic Controllers  
MF220 AutoCAD I  
MF155 Principles of Maintenance  
MF145 Basic Fluid Power  
Introduction to Wind  
Turbine Troubleshooting  
Agriculture Mechanics  
Industry Standards  
Wind Turbines and Farms Internship

**Emphasis Area:** Industrial Maintenance: Total Credits: 47

Introduction to Physics  
Principles of Management  
Introduction to Electronics  
Basic Electricity I  
Basic Electricity II  
Motor Controls  
Principles of Safety  
Programmable Logic Controllers  
AutoCAD I  
Industrial Robotics  
Basic Fluid Power  
Industrial Electronics  
Industry Standards  
Agriculture Mechanics  
Industrial Maintenance Technology Internship

Total Credits: 64

**Agricultural and Natural Resources Certificate  
Requirements:**

Soils and Fertilizers  
Soils and Fertilizers Lab  
Plant Science  
Plant Science Lab  
Horses and Horsemanship  
Microcomputer Applications I  
Employment Strategies  
Horseback Riding I  
Animal Science  
Animal Science Lab  
Agricultural Math or requirement  
Agriculture Credit and Finance  
Principles of Light Horse Training  
Farm Management and Records Analysis  
Horseback Riding II  
Total Credits: 32

## **Industrial and Energy Systems Technology Certificate Requirements:**

**Emphasis Area: Solar:** Total Credits: 28

Speech

Intermediate Algebra

Employment Strategies

Basic Electricity I

Introduction to Solar

Passive Solar

Passive Solar Lab

Solar Thermal Systems

Solar Thermal Systems Lab

Solar Electrical Systems

Solar Electrical Systems Lab

**Emphasis Area: Wind:** Total Credits: 25

Speech

Intermediate Algebra

Employment Strategies

Introduction to Electronics

Basic Electricity I

Basic Electricity II

Introduction to Wind

Turbine Troubleshooting

Wind Turbines and Farms Internship

**Emphasis Area: Industrial Maintenance:** Total Credits: 25

Speech

Intermediate Algebra

Employment Strategies

Introduction to Electronics

Basic Electricity I

Motor Controls

Principles of Safety

Programmable Logic Controllers

Basic Fluid Power

Many of the specialized courses will be offered at Barton due to the availability of the alternative energy lab and specialized classrooms. The majority of courses necessary for the attainment of a certificate or degree will continue to be offered on the main campus located one mile away.

The Industrial and Energy Systems Technology and Agricultural and Natural Resources programs at NCMC will be evaluated every five years as all programs are at NCMC by a committee composed of faculty, staff, advisory committees and administration. Program reviews are based on the SWOT analysis: Strengths, Weaknesses, Obstacles and Threats. Information found in the analysis is used to make changes or eliminate the program. Program directors or division chairs are asked to present the committee with information providing the enrollment trends, actual supporting data, and recommendations for program improvement.

## **Program Characteristics and Performance Goals**

Students applying for admission at North Central Missouri College adhere to published, open-admission requirements. Students attending the Barton Site will be admitted through the same process and provided the same services as students on the home campus. NCMC offers several courses that allow the traditional as well as non-traditional student to prepare to perform at the collegiate level.

### **Faculty Characteristics**

Current agricultural faculty will instruct courses as part of their 15 hour semester load and six of those hours will be release time for one instructor to handle daily management duties at the Barton Site. If the Barton Site and the Industrial Energy Systems Technology degree are approved, a full-time credential instructor will be employed to instruct the professional courses required for the degree as revenue becomes available. All instructors at NCMC are required to have a minimum of a Masters degree with 18 graduate hours in the specific area of instruction. However, within the Career and Technical areas, an Associate's degree in a specific area with an industry recognized certificate and experience in the field will meet the Department of Elementary and Secondary qualifications. Programs, courses, curriculum, student services, assessment and administration at the Barton Site will be managed in the same manner as they are at the main campus. All NCMC procedures, policies and processes will apply to the Barton Site.

### **Accreditation**

North Central Missouri College is accredited by the Higher [Learning Commission of the North Central Association of Colleges and Schools](#). The Higher Learning Commission also requires approval of the Barton Site based on previous approval by the Missouri Department of Higher Education.

### **Barton Site Operations, Financial, Evaluation and Managerial Responsibilities**

As stated previously, the Barton Site will be managed by a current faculty member in addition to instructing classes. As the site grows, the manager position will become a full-time position and separated from the current faculty arrangement. The manager will be responsible for overseeing buildings, planning events, assigning classrooms and maintenance of the facilities at the site.

At the present time, NCMC programs are evaluated on a five-year cycle through a SWOT analysis program review process and the college undergoes an independent financial audit annually. The programs on the Barton Site will seek information and input from two advisory committees. The Alternative Energy Committee meets tri-monthly in a partnership with the Wind Capital Group and directs the activities of the current wind energy program which oversees the future solar bio fuels programs as well. This committee has 14 members and has representatives from the areas of wind energy, banking, higher education, secondary education, city utilities and

customized training. The Agricultural Resource Advisory Committee meets bi-annually and has 20 members representing agriculture, industry, food services and bio science.

The Barton Site is currently under construction and the projected cost of the first two buildings to be erected on the Barton Site is provided below\*. The timeline calls for completion of the first phase of the building plan by August 2011 at which time NCMC would begin utilizing labs and classrooms if approved by MDHE. The college finances are audited annually by the Timothy M. Jeffries Inc. and include the reviewing of the costs associated with the building and maintenance of the Barton Site. Evaluation of the Barton Site in all areas of operations will be ongoing depending on revenue streams, enrollment, expenses and viable programming.

## **CONCLUSION**

North Central Missouri College is confident that the Barton Site meets a clear and present demand for educating students in the present economic climate. NCMC is dedicated to serving the region and it's constituents with a high quality education that will instill its students with employable skills. NCMC and the region have demonstrated their commitment through financial contributions and the current construction taking place at the Barton Site. If approved the citizens of Northwest Missouri will have access to a unique and highly demanded program of study that will reveal its value in changing the economy of Northwest Missouri for the better.

# Appendix

## NEEDS SURVEY

### THE ESTABLISHMENT OF THE BARTON FARM CAMPUS; NORTH CENTRAL MISSOURI COLLEGE (NCMC)

**Directions:** Answer the following questions based on your own opinion. Circle the answer by using the rating scale of 1 through 5. Scale: 1 – strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree.

#### Questions

1. NCMC currently offers degree programs in Agriculture and Natural Resources. In your opinion, is this program a valuable asset and option for students in Northwest Missouri?

1                      2                      3                      4                      5

2. NCMC is currently in the process of developing an Agriculture/Farm Campus. This campus would provide the opportunity for hands-on, demonstration and research based instruction. Do you believe this learning opportunity would benefit NCMC students as they move on with their education or enter their chosen career field?

1                      2                      3                      4                      5

3. Is the opportunity for students to learn in a unique and supportive educational environment at NCMC Barton Farm Campus important aspect for student success?

1                      2                      3                      4                      5

**4. NCMC offers degree programs in career and technical education. Do you believe the opportunity to receive this type of education and training at the Barton Farm Campus for traditional, non-traditional and continuing education students in Northwest Missouri is important?**

**1                      2                      3                      4                      5**

**5. NCMC is looking at expanding degree and course offerings to prepare and train students in the areas of Alternative Fuels, Solar Energy, Wind Energy and Industrial Maintenance. The addition of the Barton Farm Campus makes this expansion possible. Do you believe the opportunity to offer these programs would benefit students, as well as, the business industry throughout Northwest Missouri?**

**1                      2                      3                      4                      5**

**6. In the event of program and course expansion in Agriculture at NCMC, do you believe there are sufficient employment opportunities in the specific fields of study to justify program expansion?**

**1                      2                      3                      4                      5**

**7. In building and developing the Barton Farm Campus, do you believe it is important to equip the campus with the latest technology in computer and simulator equipment to help prepare students for their future career in Northwest Missouri and its surrounding area?**

**1                      2                      3                      4                      5**

**8. Do you believe the opportunity for and availability of short-term training courses (OSHA 10 hours safety course, for example) is important in order to upgrade present skills/certifications?**

**1                      2                      3                      4                      5**

**9. Is the opportunity for students to transfer course work from NCMC to other colleges or universities for a bachelor's degree important?**

**1                      2                      3                      4                      5**

**10. Is the opportunity to collaborate with K-12 educational programs to recruit potential new students to NCMC important?**

**1                      2                      3                      4                      5**

**11. In building and developing the Barton Farm Campus, do you believe it is important to have a meeting/conference room available for community and business/industry groups to utilize for conferences or organizational meetings here in Northwest Missouri and its surrounding area?**

**1                      2                      3                      4                      5**

**12. In hosting community and business events on the Barton Farm Campus, do you believe this would be an opportunity to promote NCMC programs and recruit potential students in Northwest Missouri and its surrounding area?**

**1                      2                      3                      4                      5**

**13. Do you believe you are well informed about the programs and services provided by NCMC?**

**1                      2                      3                      4                      5**

**14. What advantages do you believe there are in attending NCMC? (circle all that apply)**

- a. Close to home**
- b. Affordable**

- c. Personal attention**
- d. Small classes**
- e. Choice of academic programs**
- f. Choice of career programs**
- g. Opportunity to improve academic skills**
- h. other**