



RENEW
OHIO-18

Fighting for Ohio's Economic Future

*Final Report of the
RENEW Ohio-18
Economic Summit*

Congressman Zack Space



August 2008

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July 11, 2008

Dear Friend:

As a lifelong resident of Ohio's 18th Congressional District, I have borne witness to a devastating shift in Ohio's economy. I watched the once bustling steel mills that offered the opportunity of employment to our grandfathers and fathers shut their doors, victim to the evolution of an increasingly global economy. With frustration, I have learned of similar stories throughout the region, leaving countless families without the promise of good jobs with livable wages.

A love for my home in Ohio that I share with so many served as the impetus for the RENEW Ohio-18 initiative. Since coming to Congress, I have met with many families struggling to make ends meet, each with their own heart-wrenching tale of a once bright future dampened by economic devastation. And yet, I have also met with so many individuals interested in bringing new life to our home.

RENEW was intended to assemble the most creative minds in the region to create a new economic blueprint for the revitalization of our region. The response to this call has been overwhelming. I have been truly humbled and touched by the number of Ohioans and people from across the country who have lent their time and the value of their perspective to our efforts. I offer my sincerest thanks.

While this report may represent the end of a process, I also view it as the beginning of a new stage of RENEW. This next stage will foster the transformation of the old gateways of our economy into new portals of discovery for the people and towns of our district and all of the state of Ohio. The dialogue and work initiated by this forum must continue, and I will push forward on this issue that is so critical to our region of Ohio. The pathway to opportunity is paved with the fruits of persistence, and we cannot afford to let it pass us by any longer.

Sincerely,



Zack Space
Member of Congress

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ACKNOWLEDGEMENTS

Congressman Space would like to thank all those who offered their time, energy, and perspective to RENEW. He would also like to extend a special thanks to the four Working Group Chairmen: Dr. Stan Ahalt of the Ohio Supercomputer Center, Adam Sharp of the Ohio Farm Bureau, Jerry Hutton, Dean of Energy & Transportation Technologies, Hocking College; and Ralph Metzger of the Adena Health Foundation. Finally, he would like to thank the hosts of the RENEW events: Ohio University-Zanesville; Zane State University; Kent State University, Tuscarawas Campus; Central Ohio Technical College, Coshocton Campus; Hocking College; and Adena Hospital.

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INTRODUCTION

Ohio's 18th Congressional District needs new jobs. While our nation continues to grow and produce new jobs, albeit at slower rates in recent times, Ohio has not experienced the same increase in opportunities. Changes in the global economy have hit the sectors of Ohio's economy that have been traditionally its strength, stagnating the growth of what was once an economic powerhouse.

An analysis of the previous decade's job growth in Ohio, as compared to the rest of the country, demonstrates this transition. Over the previous ten years, from 1998 to 2008, total employment in the United States increased by 11.1%. During this same period, employment in Ohio grew by only 1.9%. Unemployment statistics are also telling; while Ohio's unemployment rate was only slightly above the national rate a decade ago (4.5% nationally, 4.8% in Ohio), the differential is more distinct this year (5.5% nationally, 6.6% in Ohio).¹

The manufacturing sector, once a predominant source of Ohio's economic growth, has faced significant decline over the last decade. Total employment in Ohio grew by 1.9% over that period, but total employment in the manufacturing sector decreased by 26.1%. This rapid decrease manifests itself most commonly in facility closings and mass layoffs which cripple regional economies and impact thousands of families. While the reasons for this decrease are open to interpretation and debate, the reality is that Ohio is faced with a manufacturing industry in rapid decline.

The residents of Ohio's 18th Congressional District (referred to in this paper as "the District") endure a great deal of this economic pain. The most recent unemployment figures show that 5 of the District's counties rank among the highest 11 in the state for unemployment, including Morgan County, which has the second highest rate of unemployment in the state (9.9%).² In these counties, where major manufacturing employers have traditionally played an important role in the local economy, industry's decline is undoubtedly being felt by residents of the region.

The concept for RENEW was born out of concern for the future of the Eastern and Southern regions of the state. Ohio's 18th Congressional District needs economic revitalization and a clearer path for a better economic future for its residents.

¹ Bureau of Labor Statistics, employment figures between June 1998 and June 2008.

² Ohio Department of Job and Family Services, June 2008 unemployment figures

What is RENEW Ohio-18?

Congressman Zack Space created RENEW Ohio-18 to develop a blueprint for the economic rebirth of Ohio's 18th Congressional District. RENEW Ohio-18 stands for REalizing a New Economic Way for Ohio's 18th Congressional District, which is represented by Congressman Zack Space in the United States House of Representatives.

RENEW seeks to target four sectors of the economy for economic growth: broadband and technology, agriculture, advanced energy, and health care. After an initial kickoff summit in January, Working Groups business and industry leaders convened to discuss what actions should be taken to develop each of these sectors and maximize their potential to create new employment opportunities in the region. Working Groups were composed of elected officials, government employees, representatives of trade associations, and concerned citizens with expertise or interest in a given field.

Each of the Working Groups was chaired by an expert of the respective field who is familiar with the region. Under the guidance of the chairmen, each Working Group composed a White Paper outlining principles to be followed in pursuing economic development in each field. Those chairmen were:

- **Broadband and Technology** – Stan Ahalt, Executive Director of the Ohio Supercomputer Center (OSC)
- **Agriculture** – Adam Sharp, Director of National Affairs for the Ohio Farm Bureau
- **Advanced Energy** – Jerry Hutton, Dean of Energy & Transportation Technologies, Hocking College
- **Health Care** – Ralph Metzger, Executive Director of the Adena Health Foundation

This report is intended to serve as a blueprint for policies and actions needed to expand economic opportunities in the four targeted fields. Under the guidance of the four White Papers, this report offers recommendations for both governmental and non-governmental actions that can enhance economic opportunities for Ohio's 18th Congressional District.

Why These Four Sectors?

Each of the four sectors of focus in RENEW have significant potential for growth in Ohio.

Recent reports linking enhanced access to broadband internet with a rise in employment opportunities indicate that an increase in broadband access in the region could yield job growth. Studies of existing service indicate significant gaps

in coverage. Filling such gaps could help spur participation in a growing technology sector.

Agriculture remains a consistent part of the economy in Ohio's 18th Congressional District. However, soaring energy prices have caused a significant increase in attention to the possibilities of energy derived from agricultural byproducts. The potential for policies mandating a substantial increase in the production of renewable fuels and energy from biomass sources indicate that the agriculture sector could grow significantly.

A potential expansion in energy production from sources beyond agriculture leads to discussion of advanced energy. Both federal and state actors have implemented policies to encourage the production of energy from advanced sources, and these policies are likely to continue. Such mandates will help create a concrete demand for new infrastructure and new jobs to produce this energy.

Finally, the aging of the so-called baby boomer generation suggests that significant growth in the health care sector is imminent. Unlike the other sectors addressed by RENEW, given the aging of this population, demand for health services is guaranteed to grow. The challenge therefore rests in meeting the new demands with a skilled workforce, prepared to take advantage of the growth in economic opportunities.

Work Underway

RENEW acknowledges that important and critical efforts are already underway in the District. Actors, both governmental and nongovernmental, have been working to move the region forward in many of the sectors featured in RENEW. This paper will outline numerous successes in each field, including:

- Announcement of FCC grants to two recipients, offering the promise of additional broadband coverage in 10 counties.
- Passage of a new Farm Bill, featuring policies that will facilitate a broad increase in growth in the agriculture sector.
- The creation of the Energy Institute at Hocking College, which will create a steady flow of trained workers for new advanced energy industries.
- Enhanced capacity for the PACCAR School of Nursing at the Adena Health Foundation, offering the promise of jobs for displaced workers in positions of need to the community.

The RENEW report is intended to build on existing success in the district to create a stronger way forward for the region and more collaboration between the stakeholders. By channeling collective resources toward the implementation of

mutual goals, RENEW will enhance the work already under way in the District to create more opportunities. RENEW will also assist Congressman Space and other government officials as they work to help improve the lives of residents of the 18th Congressional District.

The Way Forward

The blueprint prescribed by this report is a living document. Over time, changes in the region can alter the support needed to generate economic development for the region. The recommendations of this report may and should change in the future and will depend on the attention and continued input of all those that have participated to this point.

Congressman Space is committed to maintaining the dialogue created by the RENEW series. Implementation of the RENEW blueprint will require the voices and effort of all those who have participated in its creation. The recommendations outlined in this report offer a path forward for both government policies and non-governmental participation. Just as continued updates to the RENEW blueprint will be necessary, so too will continued dialogue on how best to implement its recommendations.

BROADBAND AND TECHNOLOGY

Executive Summary

The technology sector shows strong potential for economic growth. Universal access to broadband service is critical to an expansion in this area, but access to broadband remains a significant impediment to these opportunities in rural Ohio, as do workforce training challenges. Improving both access to broadband and the skill level of the workforce are critical to seizing on economic opportunities in this area.

Background

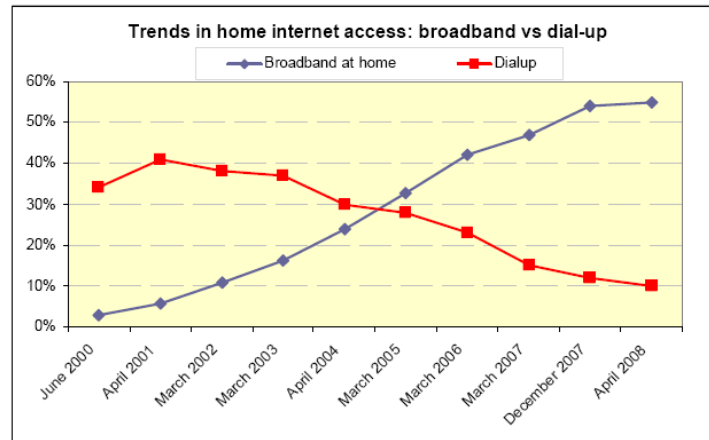
Changes in the American economy have shown great opportunity for growth in the technology sector. Particularly in states like Ohio, which have seen a decline of the manufacturing sector over recent decades, seizing on this national transition is imperative to future economic vitality. In order to complete this transition, Ohio must develop an able workforce and the necessary infrastructure to remain competitive.

Widespread access to inexpensive and reliable high-speed internet is an essential ingredient to a ready infrastructure. The development of high-speed internet has altered how commerce in the United States is conducted by creating near instantaneous data exchanges and fostering new markets in which to compete. For the purposes of this report, the term “broadband” will refer to high-speed internet services.

Broadband internet is still a relatively new phenomenon. The networking of computers for commercial purposes did not begin until 1974, when the FCC approved three applications for “value-added carriers.” These early networks expanded in size and quantity, leading to demand for an interconnection of these networks. In 1983, a common computer language was developed that allowed these networks to communicate with one another, paving the way for the first commercial e-mail service to be offered in 1989. By 1991, all restrictions on commercial use of the internet were lifted. On October 13, 1994, thousands of people downloaded a free internet browser from Netscape, marking the advent of the modern internet. Other companies offering private portals to the internet, most notably America Online, continued to emerge during the early 1990’s, leading to an explosion of internet usage beginning in this period.

In 1996, the first commercial cable modem was made available in Canada, leading to the first true high-speed internet service. Broadband usage grew significantly between the years of 2000 and 2004. In 2000, 5 million Americans

claimed to have high-speed internet service in the home, a small fraction of total internet users. By 2004, that number had reached more than 60 million.³ Growth continued at similar rates for each of the past four years, including an increase of 17% from March 2007 to April 2008.⁴ The chart below shows how, over time, broadband usage has nearly replaced dial-up usage in the home. It is important to note that this trend is national, and not specific to the District.



Source: Horrigan (2008)

High-speed internet represents a significant breakthrough in telecommunications policy. In the same way that electricity, telephones, and televisions altered the course of commerce in the United States, so too has high-speed internet revolutionized American life. Access to instantaneous information for consumers and industries alike has radically altered the life of every American, regardless of their access to the service.

Opportunities created by broadband are not limited to economic development. Distance learning opportunities make advanced degrees more attainable for residents of rural areas lacking the means to commute to institutions of higher learning, as well as for full-time employees seeking opportunities for continuing education on their own time. Many colleges and universities now offer the opportunity to take classes through the internet. Many of these courses require streaming video and other applications that necessitate a higher bandwidth than dial-up connections can offer.

Additionally, telemedicine and other technologies enhance access to health care for rural areas by creating instantaneous communication between medical professionals. This communication can reduce the need for long trips to hospitals in more urban areas.

Competing in a knowledge economy is significantly more difficult without access to broadband technology. Multiple studies confirm a concrete causal relationship between broadband access and usage, and economic development and job

³ Rainie et al (2005)

⁴ Horrigan (2008)

creation.⁵ A study from Connected Nation suggests that accelerated broadband access could lead to the creation or retention of 96,312 jobs annually in the state of Ohio alone.⁶

Access to broadband is more difficult to attain in rural areas where infrastructure for its deployment is more limited. While the development of this infrastructure occurred rapidly in more profitable urban and suburban markets, lower-density populations and geographic challenges of rural areas make build-out into these regions less attractive to provider companies from a cost perspective. Failure to reach these areas has contributed to the drop in national ranking of the United States, in comparison to the connectivity of other countries around the world.⁷

Two reasons account for the United States falling behind other nations in connectivity reports. First, the geographic challenges that face the United States are more imposing than those in other nations. In those nations, more concentrated populations and lower topographies mean a lower financial investment is necessary to develop necessary infrastructure. Additionally, in many of these countries, governments and private entities have made significant investments that have facilitated outreach to these rural areas. Similar investments are necessary in this country to improve broadband access in the most rural areas.

Important progress is underway to attain universal broadband access in rural Ohio. Federal and state support for new initiatives from private providers, coupled with efforts to map and track existing inventory and organize at the community level, paint a promising picture for coming years. Policies that support these projects and foster new development are a critical part of the way forward.

While development of broadband and other relevant infrastructure is pivotal to improving opportunity in the technology sector for the region, so too is developing a base of consumers who understand the need and importance of utilizing this technology. In expanding access to broadband service, consumers must be educated on the potential benefits offered by enhanced access. Studies demonstrate that a low percentage of residents of rural areas choose to acquire broadband service, given the opportunity. More must be done to provide awareness of the benefits of broadband to businesses with existing access in order to maximize their competitiveness.

⁵ Examples of such studies include Crandall, Lehr, and Litan (2007), as well as a report released from Connected Nation in February 2008.

⁶ Connected Nation (2008)

⁷ A study from the International Telecommunications Union ranked the United States 24th worldwide in broadband penetration (International Telecommunications Union (2007)), and data from the Organization for Economic Cooperation and Development (OECD) ranked the U.S. 15th in broadband per 100 inhabitants (OECD (2007)). The OECD study dropped the U.S. from its previous ranking of 4th in 2001.

An important example of success in both expansion of broadband access and improvement of uptake rates is offered by the Connect Kentucky initiative. In the early part of this decade, the state of Kentucky was plagued by low availability of broadband service in its most rural areas. To address this deficit, the state created a public-private partnership known as “Connect Kentucky.” The partnership worked with broadband providers to map out existing broadband service for the state. As development of relevant infrastructure in the state’s most rural areas began, the partnership also developed community teams that worked to improve awareness of the benefits of broadband service, helping to drive demand at the local level. Reports suggest that broadband service is now available to more than 90% of the state’s population.

Equally important is ensuring the development of a workforce capable of participating in the sector. Attracting investment and growth in technology businesses is not possible without a workforce capable of participating in a knowledge economy. Lower rates for higher education attainment in the region must be rectified to create a stronger available workforce. Existing opportunities must be expanded to improve familiarity with relevant equipment and technology.

The enactment and implementation of necessary policies will require participation from governmental and non-governmental actors at all levels. While the government holds significant resources and the potential to offer direction and guidance, more local initiatives can tailor policies and programs in order to maximize their effectiveness. Coordination of these efforts is critical to maximizing the opportunities of expansion in the technology sector.

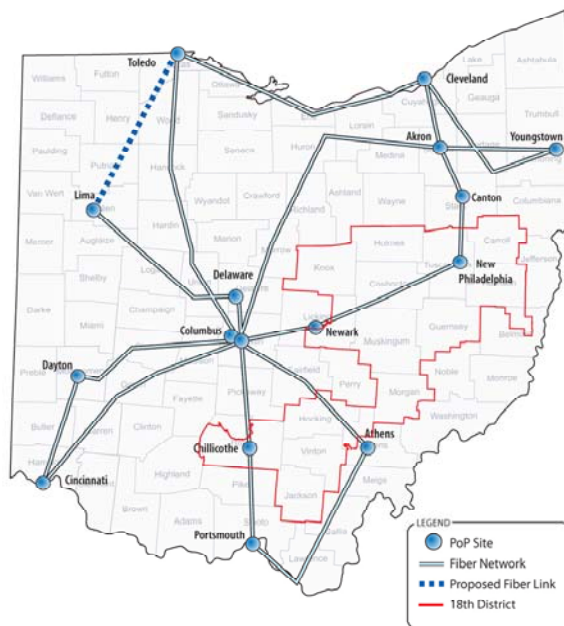
Three general areas have been identified, which will help position the District to more fully participate in the opportunities afforded by the energy and technology sector. They include:

- **Expanding Access to Broadband**
- **Improving Awareness of Broadband Opportunities, and**
- **Bringing Skill to the Workforce**

Expanding Access to Broadband

Limited access to broadband internet remains the most critical barrier to development of the technology industry in the District. Reports and studies confirm that the District suffers from an infrastructure deficit most commonly referred to as “the digital divide.”⁸ This deficit represents a costly and critical barrier for proper expansion.

The State of Ohio has been aggressive in developing broadband infrastructure. Driven by a desire to connect researchers at various institutions with supercomputers in Columbus, beginning in the 1980s, the state developed a statewide network for educational facilities. In 2004, significant increases in demand led the state to lay a fiber backbone, now referred to as OSCNet, to improve bandwidth access for those on the network. OSCnet provides connectivity to colleges and universities, K-12 schools, public broadcasting stations, academic medical centers, and state, federal, and partnering research organizations. The network also supports the Ohio Library and Information Network (OhioLINK), the Ohio Learning Network (OLN), and eTech-Ohio’s K-12 network.



Source: Ohio Supercomputer Center

More recently, Governor Strickland launched the Connect Ohio initiative, designed to improve connectivity in the state through public-private partnerships. Following the successful Connect Kentucky model, the initiative aims to expand access to broadband by mapping existing access and infrastructure with the

⁸ Ohio Supercomputer Center (2006)

assistance and input of private provider companies and enhancing demand for the service through local initiatives.

Despite these efforts, access to broadband has lagged in the state's rural areas. A study conducted by the Ohio Supercomputer Center for the Ohio Department of Development concluded that "[In Ohio,] as one moves to medium and low-density population counties, the number of service providers declines as does the availability, resulting in higher costs for services."⁹ Rural Ohio is at a disadvantage to urban and suburban counterparts in attracting new industry because the costs of connecting remain higher. This trend is a reflection of a national deficit in broadband availability in rural areas.¹⁰

In June 2008, Connect Ohio announced the development of the first comprehensive maps of broadband access for the state of Ohio. These maps (Appendix A) were developed with the help of broadband providers around the state and demonstrate that significant gaps exist in coverage for the District. Particularly outside of cities and towns, broadband coverage is frequently non-existent. The state pledges to work with broadband providers in the future to ensure that these maps remain accurate and an accurate resource for the region.

Additional efforts are more concentrated and regional. In November 2007, the Federal Communications Commission announced funding for two telehealth networks that will support the development of technology in the region. Under the Rural Health Care Pilot Project initiative, these networks are primarily designed to offer service to health centers. However, both grant recipients have agreed to work with communities and providers in the region to make private consumer access available. These projects offer significant new infrastructure opportunities for the region. The two networks relevant to the District:

- The Southern Ohio Healthcare Network (SOHCN) will receive \$13.9 million for the development of a network in Adams, Athens, Fayette, Gallia, Highland, Hocking, Jackson, Meigs, Morgan, Perry, Pike, Ross, Scioto, Vinton, and Washington counties.
- The Northeast Ohio Regional Health Information Organization will receive \$11.3 million to expand and upgrade an existing network offering connections to approximately 19 medical facilities in Ashland, Ashtabula, Carroll, Columbiana, Coshocton, Cuyahoga, Erie, Geauga, Holmes, Huron, Lake, Lorain, Mahoning, Medina, Portage, Sandusky, Seneca, Stark, Summit, Trumbull, Tuscarawas, and Wayne counties.

Private community efforts around the region have also been successful in earning support. A community group in Coshocton has successfully gained access to Multi-Agency Radio Communications System (MARCS) towers for the purposes of expanding access to broadband through wireless technology, while

⁹ Ohio Supercomputer Center (2006)

¹⁰ GAO (2006)

a similar group working in Hocking and Vinton counties has drawn the attention and support of the Ohio Broadband Council. Additional initiatives are underway in Jackson County.

Local governments have also pursued projects to develop infrastructure for their residents. The City of Dover developed a ring of fiber-optic cables around the city to provide affordable broadband to all of its residents. The town of Heath has also initiated inquiries with respect to making wireless broadband available throughout the town.

Private providers also have contributed to efforts to expand broadband infrastructure. Horizon Telecommunications offers outreach grants for the expansion of broadband infrastructure into new regions, while many smaller providers work with local government and community groups to provide service. Larger providers such as AT&T, Verizon, Embarq, Windstream, Time Warner, and Comcast continue to expand their broadband infrastructure each year.

Further development of this infrastructure will be critical to ensuring that the District is in position to compete in the growing technology sector. Improving access to broadband internet will only enhance the attractiveness of the District to new technology industries.

Aside from infrastructure, another significant barrier exists in the form of the cost of broadband service. Many Americans cite the cost of broadband when describing why they have refused to purchase available broadband access, a particular problem in rural areas where incomes tend to be less than urban and suburban areas.¹¹ In the District, this challenge is no different and is exacerbated by a geography challenging to terrestrial and wireless broadband expansion.

While significant governmental and nongovernmental initiatives are in place to improve access to broadband, improvement of existing initiatives and development of new such initiatives is important to the future of the regional success of the technology sector.

Recommendations:

- **Develop Maps of Broadband Access** – One challenge in determining strategies to bolster broadband access is mapping existing broadband infrastructure and the existing availability of service. The maps released by Connect Ohio must be updated and fine-tuned over time, offering a blueprint for more targeted expansion of infrastructure. Federal legislation offering support for such efforts will help to continue its effectiveness. At the federal level, both the House and the Senate have passed legislation that would authorize support for programs like Connect Ohio, including Congressman

¹¹ GAO (2006), Horrigan (2008)

Space's HR 3627, the Connect the Nation Act. Differences between the chambers have prevented passage of comprehensive legislation. These differences must be resolved so the final legislation can be signed into law.

- **Improve Usage of Available Government Programs** – Both the federal and state governments have programs in place that support broadband initiatives, including the FCC and Ohio Broadband Council grants discussed earlier. These resources are generally underutilized and represent an important source of funding and support. The development of a central clearinghouse for these grants for the Southeastern region of Ohio would ensure that these programs are properly utilized. Additionally, legislative initiatives to make the funds more readily available to broadband providers should be implemented. Congressman Space included such provisions in the 2008 Farm Bill, including legislation that would reduce the necessary paperwork to apply for loans from the Rural Utilities Service (RUS).
- **Develop Local Initiatives To Expand Broadband Access** – The formation of community and local groups focused on broadband deployment is a key tool in pushing access at the local level. Community groups can organize to apply for government support, as well as advocate to state legislators and Chambers of Commerce for policies that properly improve broadband access. Furthermore, these groups represent an aggregation of demand that might otherwise be difficult for private providers to see. Governmental officials at all levels should work to foster interest in such initiatives.
- **Work with Internet Service Providers** – Broadband access is sometimes offered in regions where its availability is not well-known. Working with broadband service providers prevents such oversights and allows the providers to reach all interested customers in a given market. Policies to improve broadband access should be developed in consultation with these providers to prevent duplication of efforts.
- **Offer Incentives for the Purchase of Broadband** – As infrastructure continues to develop, rural areas will likely continue to face a cost differential in gaining access to broadband service. Offering tax incentives to small businesses and consumers that must pay higher prices for this service would help to make broadband more affordable in rural Ohio, where incomes are generally lower.

Improving Awareness of Broadband Opportunities

While expanding broadband infrastructure is certainly critical to enhancing regional economic opportunities, so too is ensuring that service is properly utilized when expanded. The expansion of broadband access to rural areas does not necessarily ensure that potential consumers will take advantage of its benefits.¹²

Studies reveal that usage of existing broadband service in rural areas is lower than in many other areas. A May 2006 report from the Government Accountability Office (GAO) states that only 17% of rural residents took advantage of available broadband access, as opposed to 28% of suburban households and 29% of urban households.¹³

Reasons for this low uptake vary. A survey by the Pew Internet & American Life Project found that amongst dial-up users who were uninterested in high-speed internet, 19% said “nothing would convince them” to purchase broadband service.¹⁴

Pushing uptake in rural areas serves three critical functions. First, a high rate of uptake ensures that private service providers will find rural areas attractive markets in which to build out. Second, significant uptake ensures the development of a consumer base for products made available over the internet within the region. Development of this consumer base will improve demand for technology-based services and opportunities in the region. Finally, broadband access offers educational opportunities through distance learning that can improve the skill level of a region’s workforce. A computer literate workforce is far more likely to attract new industry than one unfamiliar with basic computer skills.

Additional training for businesses could also be beneficial to commerce in the region. High-speed internet brings with it the opportunity of increased competitiveness in the global marketplace. Marketing and engaging in commerce over the internet will enhance the competitiveness of the region’s businesses, which could lead to job expansion in the future.

Recommendations:

- **Implement Policies that Match Access with Education** – Initiatives that expand access to broadband service must take into account the need to improve awareness of the benefits and opportunities of broadband for consumers and businesses alike. Policies developed to enhance broadband

¹² GAO (2006), Horrigan (2008) – Both studies indicate that many consumers decline to utilize access to broadband Internet when it is available.

¹³ GAO (2006)

¹⁴ Horrigan (2008)

access must include plans to improve awareness efforts in newly-serviced regions. These policies should include the creation of partnerships between broadband providers or organizations like Connect Ohio that would work with existing citizen groups such as senior citizen residences and churches to establish education opportunities.

- **Develop Community Education Initiatives** – Community and local education initiatives are often more useful than initiatives for larger services areas because they can be tailored to meet specific interests relevant to a given locality. In addition to the partnerships mentioned above, community and local initiatives need to be encouraged to improve the effectiveness of broadband expansion.
- **Create Business Training and Support** – Assisting local businesses with marketing tactics would significantly enhance the opportunities presented by broadband expansion. The government should work with regional Chambers of Commerce to develop training programs that will help businesses take advantage of the opportunities presented by enhanced access to broadband.

Bringing Skill to the Workforce

Developing a skilled workforce is critical to increasing the District's ability to take advantage of the economic opportunities provided by the continued growth in the technology sector. Particularly in the realm of broadband and technology, the importance of computer literacy cannot be overstated.

Education attainment rates in the District are generally lower than state averages. College degree attainment rates are generally lower, with the exception of Athens County, which is home to Ohio University. These figures can potentially act as a deterrent for new technology-based companies looking to move into the region. More must be done to improve the number of residents of the region pursuing higher education.

Education Attainment for Persons 25 and Older

	No High School Diploma	High School Graduate	Some College, No Degree	Associate Degree	Bachelor's Degree	Master's or Higher
Ohio	17.0%	36.1%	19.9%	5.9%	13.7%	7.4%
Athens	17.1%	34.2%	16.5%	6.5%	12.6%	13.1%
Belmont	19.1%	46.3%	17.2%	6.2%	7.1%	4.1%
Carroll	19.9%	53.0%	14.4%	3.5%	6.2%	3.0%
Coshocton	21.3%	51.1%	13.3%	4.5%	6.3%	3.4%
Guernsey	21.6%	46.2%	16.7%	5.5%	6.1%	3.9%
Harrison	20.4%	49.6%	14.6%	6.3%	6.0%	3.0%
Hocking	22.0%	46.2%	15.6%	6.4%	6.1%	3.7%
Holmes	48.5%	32.2%	9.0%	2.1%	5.8%	2.4%
Jackson	26.5%	43.1%	14.6%	4.8%	7.1%	3.9%
Knox	18.2%	42.1%	18.0%	4.9%	10.5%	6.2%
Licking	15.3%	40.7%	19.2%	6.3%	12.6%	5.8%
Morgan	19.4%	50.5%	15.8%	5.3%	5.1%	3.9%
Muskingum	19.4%	44.2%	17.1%	6.6%	8.0%	4.6%
Ross	23.9%	42.2%	17.5%	5.0%	7.4%	4.0%
Tuscarawas	19.7%	48.2%	15.0%	4.9%	8.1%	4.1%
Vinton	29.3%	47.6%	12.5%	4.6%	3.9%	2.2%

Source: Ohio Department of Development County Profiles (2007)

The cost of higher education is a strong disincentive for the pursuit of a college degree in Ohio. Tuition rates at Ohio's institutions of higher learning are comparatively high, making the issue of affordability significant for a region with generally fewer resources than other parts of the country.¹⁵ Federal and state policies that facilitate access to higher education are critical in improving the region's competitiveness.

Significant strides in the effort to reduce the financial barriers associated with a college degree are already underway at the federal level. Congress has passed

¹⁵ Trends in College Pricing 2007, The College Board; HEI

legislation cutting in half the interest rate on federally-subsidized student loans, as well as increasing the maximum amount of the Pell Grant. Changes to other programs are currently pending with passage of a reauthorization of the Higher Education Act.

Social factors also play a significant role in the likelihood of a student to pursue a college degree.¹⁶ In the District, where participation rates are traditionally low, creating an understanding for the need of a college education is also a significant challenge. Programs that help to bridge the gap from high school to college are also critical to the advancement of higher education rates.

Efforts to address this issue have begun at the federal and state levels. At the federal level, the pending reauthorization of the Higher Education Act contains an authorization for grants to institutions serving rural areas to create partnerships with local school districts to help improve access to information on higher education. The state has also announced the “Seniors to Sophomores” initiative, which would give high school students the opportunity to participate in college classes before graduation.

A secondary degree, however, does not ensure preparedness for participation in a knowledge economy. As with any new and emerging sector, specific programs tailored to regional needs or potential new employers are needed if the District is to attract new industry. Targeting these programs properly will require regional collaboration between interested parties.

The Information Technology Alliance of Appalachian Ohio (ITAAO) has already begun developing such programs. Seeking to take advantage of advanced computing facilities at nearby Shawnee State University, ITAAO, a nonprofit organization, has received federal support in the form of a WIRED grant through the Department of Labor for the development of worker training programs. These programs will be designed to make the region competitive in the development of higher technology jobs.

Federal and state support similar to WIRED grants exists for the development of such worker training programs. Ensuring that these funds are channeled to the region will require the coordination of both governmental and regional participants to design and implement the programs.

¹⁶ There are many studies that demonstrate the impact socioeconomic factors can have on an individual's likelihood to pursue a college degree. A May 2008 report from the National Center for Education Statistics (NCES) entitled “Trends Among High School Seniors 1972-2004” found that “Seniors from families in the highest SES quartile intended attendance at 4-year postsecondary institutions at higher rates than their counterparts, in all four cohorts. In 2004, eighty-one percent of high-SES quartile seniors planned to attend a 4-year school, compared to 58 percent of the middle SES quartiles seniors and 43 percent of low-SES quartile seniors (23 and 38 percentage point gaps, respectively).”

Recommendations:

- **Improve Participation Rates in Higher Education** – Reasons for low participation in higher education include both economic and social concerns. Policies should be implemented that address the financial challenges in pursuing education beyond the high school level. In addition, policies should encourage the formation of partnerships between institutions of higher education and schools in the regions they serve to help cross social barriers associated with pursuing a college degree. Implementation of legislation like Congressman Space's HR 4139, the College and University Rural Education Act, that form partnerships between rural colleges and rural school districts will help to transcend such barriers. The CURE Act was included in the reauthorization of the Higher Education Act, and has passed both the House and the Senate.
- **Provide Institutions of Higher Education with Resources to Improve Existing Programs** – Developing training programs in areas newly-focused on technology requires significant funding. New faculty and staff are frequently required for such transitions, as well as costly new equipment. These resources are often not available to more rural institutions. Governmental assistance for such modifications would help to improve the existing programs. Legislative initiatives like the CURE Act that give these institutions resources to create new programs must be pursued.
- **Develop New Training Programs** – As the region attracts the interest of new employers, the educational needs of the workforce may change. Such changes will require new training programs that are frequently unpredictable. The development of programs that can offer training to unemployed and available laborers through government support will guarantee new employers continued access to a workforce prepared to meet their needs. Emphasis should be placed on targeting displaced workers with these programs.

Conclusion

Ohio's 18th Congressional District faces significant challenges in taking advantage of opportunities in the technology sector. The region faces a deficit in infrastructure and skilled workforce that must be addressed through new policies. Bolstering the technology sector of the region's economy will require policies that:

- **Expand Access to Broadband Service**
- **Improve Awareness of Broadband's Opportunities**
- **Bring Skills to the Workforce**

Expanding access to broadband service and developing the region's infrastructure remains the most costly and significant obstacle. The development of broadband infrastructure is expensive and requires significant investment from service providers. The government must work with providers to best target these initiatives and coordinate existing resources.

Maximizing the opportunities presented by more consistent access to broadband is an important second phase of the process. Evidence shows a significant lack of uptake of broadband service in some rural areas where broadband already exists. Presenting consumers and businesses with information about how to utilize access to the service must be part of any approach to expanding access to broadband for the region.

Finally, developing a workforce attractive to potential new employers is of critical importance. Without a workforce trained in skills necessary to the technology sector, the region will not attract new industry. Governmental investment in new programs will be critical to the region's success.

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AGRICULTURE

Executive Summary

The RENEW Agriculture Working Group came up with a number of ideas for improving economic conditions for Agriculture in Ohio's 18th Congressional District. Some of these ideas are reflected in the 2008 Farm Bill, but many others still need to be implemented. This section expands on suggestions made during the RENEW Agriculture Working Group to improve economic conditions for agriculture and rural communities. The main issues that need to be addressed involve ensuring that land is available for agriculture, maintaining tax policies to protect farmers, and continuing funding for agriculture research and rural infrastructure.

Background

Agriculture has been an important industry in Ohio since the state's founding. Ohio's 18th Congressional District contains over 11,000 farms and over 7,000 farm operators. The average size of a farm is 163 acres, and more than 1.9 million acres of land are dedicated to agriculture in the district. The market value of agriculture production in the the District is over \$380 million annually.¹⁷ Agriculture production in the district is diverse and ranges from beef cattle, dairy, hogs, goats, and sheep to grains, fruits and vegetables, nursery, and greenhouse production. The chart below shows the top five agriculture products in market value shares for the 18th Congressional District, according to the USDA's 2002 Agriculture Census.

Top Five Agricultural Products, Market Value of Sales (\$1000)

	Market Value	% of District Market Value
Milk products	\$105,135	27%
Cattle and calves	\$79,362	21%
Grains and oilseeds	\$68,508	18%
Nursery, greenhouse, floriculture and sod crops	\$25,594	7%
Hogs and pigs	\$17,538	5%

(D) indicates that the data has been withheld by USDA to avoid disclosing data for individual farms. N/A indicates that the data is unavailable.

¹⁷ USDA's National Agriculture Statistics Service's 2002 Census of Agriculture
http://www.agcensus.usda.gov/Publications/2002/Congressional_District_Profiles/cd3918.PDF

Agriculture has always been a critical economic engine in Ohio, but industries related to agriculture are going through dramatic changes. These changes create potential challenges, but also enormous opportunities. For example, new renewable fuel production facilities are being constructed in the region and throughout the Midwest. Those facilities and the increasing demand for renewable energy are dramatically changing agriculture. RENEW seeks to maximize those opportunities and minimize the problems. The topic of discussion centered on the question “What actions, programs, and opportunities can we identify that will maintain and grow the economic strength of the agricultural sector of Ohio’s 18th District?” While agriculture is already a strong industry in the region, there is potential for expansion in agriculture-related fields.

Pursuit of these goals fell under initiatives to improve agriculture through the following facets:

- **Ensuring Land is Available for Agriculture**
- **Modifying Tax Policy to Protect Farmers**
- **Supporting Agricultural Research and Education**
- **Protecting and Funding Local Agriculture Services**
- **Building Rural Infrastructure**
- **Supporting Renewable Energy**
- **Passing and Implementing the 2008 Farm Bill**

The following document shall analyze specific initiatives that will promote economic development in each of these facets.

Ensuring Land is Available for Agriculture

Efforts are needed to utilize lands in the district for the most suitable economic purposes and to preserve productive agriculture lands. Farmland is a rapidly disappearing natural resource, with the United States losing 2 acres of farmland every minute to new development. From 1992 to 1997, America converted more than 6 million acres of agricultural land to developed uses. This is roughly an area the size of Maryland.¹⁸ In Ohio's 18th Congressional District, scenic landscapes are important for attracting visitors and for maintaining the quality of life for local citizens. Preserved farmland helps the environment as farmers use sound soil and water conservation practices that shield soil from erosion and protect local surface waters from contamination. Open farm and forest lands are important for the recharge of ground water in our communities. Farms also provide critical habitats for local wildlife populations.

Recommendations:

- **Better Land Planning** – Agriculture practices such as grazing livestock, forestry, and tree fruit production are very productive uses of Eastern Ohio hill country lands, and should be maintained and encouraged. Better land use planning throughout the district should take place in order to better address issues such as urban development pressure and farmland preservation.
- **Support Conservation Programs** – The 2008 Farm Bill increases investments in conservation programs that conserve and protect land from development. These programs should continue to be supported on a federal and state level. Efforts should be made to ensure that the programs are easy for the landowners to utilize.
- **Support the Farm Protection Program** – The 2008 Farm Bill doubles funding for the Farm Protection Program to protect agricultural lands from urban and suburban development pressure. The program provides matching funds to state or local governments and non-governmental organizations with existing farm and ranch land protection programs to purchase conservation easements. At the end of 2003, the program protected more than 300,000 acres.¹⁹ The Farm Protection Program should be continued in the future, and the funding should be increased to meet growing demand.

¹⁸ America Farmland Trust, Farmland Information Center

¹⁹ Congressional Research Service, Farm Protection Program: Status and Current Issues January 5, 2007

Modifying Tax Policies to Support Agricultural Production

More than 11,000 farms dot the rural landscape of Ohio's 18th Congressional District. Of these farms, 98% are owned by family-owned proprietorships, partnerships, and co-ops.

In 2001, the federal government began a phase-out of the estate tax by increasing exemptions and lowering rates. The estate tax is scheduled to be repealed in 2010, and a provision to tax appreciation on inherited assets (in excess of a limit) will be substituted. The 2001 tax provisions sunset in 2010. Without action by Congress, the estate tax will revert to its pre-2001 level in 2011.

Prior to the repeal of the estate tax in 2001, a special family business deduction, the Qualified Family Owned Business Interest Exemption (QFOBI) was enacted in 1997 so that the estate tax would not prevent families from passing their businesses to their children. Because of higher exemptions and a previous cap on the combined regular and small business exemption, this provision is no longer relevant. If, however, the estate tax repeal sunsets, QFOBI will be available again.²⁰

Permanent repeal of the estate tax will be difficult given that the estimated national debt is approaching \$10 trillion. According to some estimates, a permanent repeal of the estate tax in 2010 would cost more than \$1 trillion between 2012 and 2021. This cost includes \$859 billion in lost revenue and \$251 billion in increased interest payments on the national debt.²¹

Recommendation:

- **Protect Family Farms from Taxes** – Federal and state entities should protect family farmers and small business owners from taxes that prevent them from keeping businesses in the family. If a permanent repeal is not possible, efforts should be taken to ensure that exemption amounts remain high enough so farmers and small business owners in the 18th Congressional District are not affected by a sunset in the estate tax repeal in 2010.

²⁰ Congressional Research Service, Estate Taxes and Family Businesses: Economic Issues March 24, 2008

²¹ Center on Budget and Policy Priorities, The High Cost of Estate Tax Repeal, October 11, 2007

Supporting Agricultural Research and Education

Locally-based research stations and research projects are uniquely positioned, scientifically and geographically, to deliver maximum benefits to the region's producers and processors of agricultural commodities. Moreover, the scientific findings and outcomes are highly valued by the consumer, business, environmental, and scientific sectors throughout the region, state, and beyond.

We need to continually expand research and development efforts in the district to better serve Eastern Ohio hill country. Research can lead to outcomes that boost farm productivity, prevent and address plant and animal disease, and discover new technologies that expand the use of agricultural products. Investments in agriculture research benefit consumers as well as agricultural producers. New and/or the latest technology and science must be utilized to aid and promote the production of livestock, grains, alternative energy, fruits and vegetables, and other products in the district. Regulatory or public policy decisions must be based on sound science.

The use of science and technology developed through agriculture research programs disproportionately benefits small farm operations in Ohio's 18th Congressional District since they often cannot afford to invest in the research themselves.

Recommendations:

- **Support USDA Research Programs** – The 2008 Farm Bill streamlines agricultural research by establishing a National Institute of Food and Agriculture. These research programs are critical to establishing new best practices and maximizing limited research dollars.
- **Support Local Research Facilities** – Federal funds should continue to support research facilities in the 18th Congressional District, such as the North Appalachian Experimental Watershed Research Station in Coshocton.
- **Support Research for New Agriculture Industries** – Funding research into the development of new agriculture industries should be a top priority, including aquaculture, deer farms, organics, and more research to improve the viability of specialty crops.

Protecting and Funding Local Agriculture Services

Maintaining local county USDA offices is critically important to agriculture producers and rural communities in Ohio's 18th Congressional District. These offices and the programs they administer need to be fully funded. They are vital to agriculture producers in the area because they offer direct interaction with the USDA. The Natural Resource Conservation Service employees in the district must be able to provide technical assistance to producers.

The Farm Service Agency (FSA) has considered plans to close and consolidate Farm Service Agency offices in Ohio's 18th Congressional District. If these offices are closed, producers in that county will have to drive to another county to receive FSA services. The 2008 Farm Bill prevents the USDA from closing FSA offices that have less than three employees and are more than 20 miles from another office.

Recommendations:

- **Prevent Consolidation of Local USDA Offices** – Efforts to consolidate Farm Service Agency and National Resource Conservation District offices should be opposed. Without local county offices, farms will suffer from increased travel time and expenses, and they will suffer the loss of a critical resource center for agriculture knowledge.
- **Improve Local USDA Staffing** – Staff at local USDA offices need to be maintained or increased to meet the demands of producers in the area. During his agriculture tour in preparation of the Farm Bill last year, Congressman Space was told by a number of agriculture producers that it was difficult to receive technical assistance from local NRCS offices because staffing issues had created a backlog.

Building Community Infrastructure

Rural communities face significant challenges in handling their infrastructure needs and adapting to new technologies. Broadband access and communication technologies must be extended to rural areas, and has previously been discussed. Maintaining or expanding essential infrastructure, like roads, water systems, utilities, waterways, and competitive rail systems, is critical.

We must strive for cost-effective movement of agriculture products. A strategic plan for improvement of our infrastructure is needed. Many water systems in Ohio's 18th Congressional District are in desperate need of expansion and/or repair. Federal funds need to be expanded to help rural communities that have a difficult time raising the tax revenue to fund expensive water projects.

Recommendation:

- **Improve Rural Infrastructure Funding** – Federal, state and local investments must be maintained in rural areas for them to remain competitive. The majority of government funding for transportation goes to urban and suburban areas. Efforts to ensure that rural communities get their fair share of transportation funds must be continued. Rural infrastructure programs are mainly administered through USDA's Rural Development Programs. However, funding for these programs is usually allocated at inadequate levels. Federal and state programs that help rural communities with infrastructure improvements should be supported.

Strengthening Agriculture Education

Rural children deserve equal access to educational opportunities provided to their urban and suburban counterparts. It is also important that young people who want a career in agriculture have opportunities to learn about the agriculture industry. As the country's population becomes more urbanized and agriculture becomes more centralized, fewer people have an understanding of the importance of agriculture to our well-being. Congressman Space supported federal funding in the 2008 Farm Bill for youth agriculture education programs administered by the Future Farmers of America (FFA), the Girls Scouts, and 4-H.

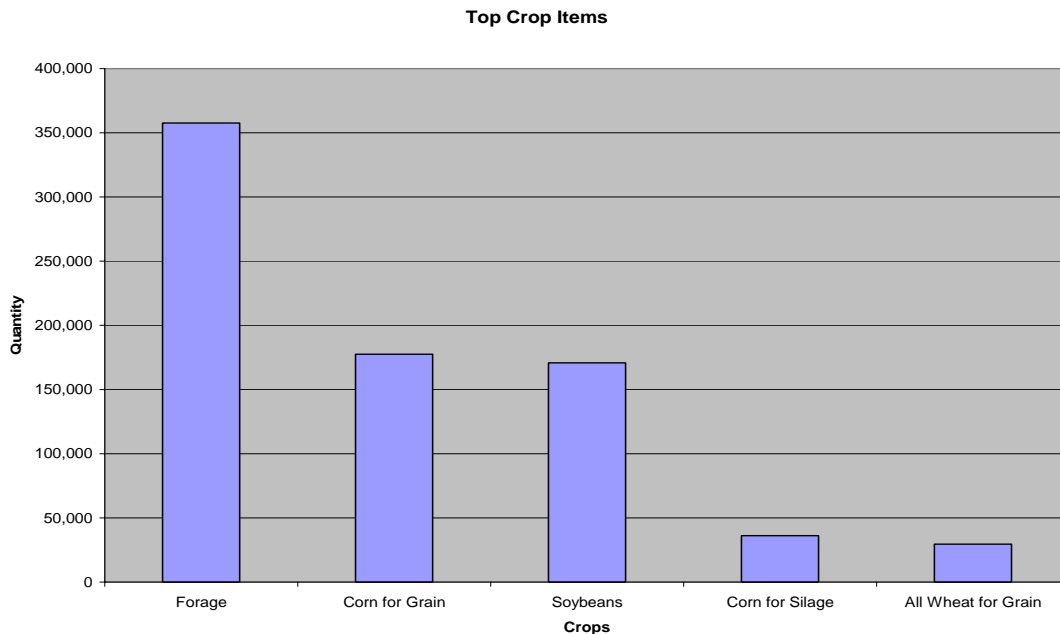
Recommendations:

- **Improve Rural Educational Opportunities** – Congressman Space introduced legislation called the “College and Universities Rural Education (CURE) Act.” This important legislation would provide support for partnerships between rural colleges and rural school districts to encourage more graduates of rural high schools to continue on to college; partnerships between rural colleges and regional employers to create an employment pipeline; and incentives for rural colleges to enhance their education programs to provide training for professions of need in the area. This legislation was incorporated in the Higher Education Bill.
- **Fund Youth Agriculture Programs** – Organizations like the 4-H, FFA, and others need to be supported and encouraged. Community leaders need to support these programs with public and private funds as well as volunteering time and resources to help young people learn about agriculture.

Supporting Alternative Energy

To alleviate the energy-related economic hardships being suffered, we need an energy policy that helps alleviate the energy-related economic hardship being suffered by farmers and consumers by creating a more diverse energy supply, including renewable energy sources such as ethanol, biodiesel, biomass and wind. In addition, a comprehensive energy policy will increase the production of oil, gas, and clean coal here at home and reduce our dependence on foreign energy sources.

More renewable energy production and increased use of local energy sources such as coal mean more jobs for the District. Byproducts of renewable energy production, such as distillers' grain, can be reused within the District to feed livestock, for example. More direct grants or loans to farmers to develop and utilize renewable energy should be available. Renewable energy was a major focus at the RENEW Agriculture Working Group because Ohio's 18th Congressional District benefits tremendously from increased investments in renewable energy, particularly through the production of biomass. The chart below, based on data from the 2002 USDA's Agriculture Census, demonstrates that forage, corn, and soybeans are the top crops in Ohio's 18th Congressional District. Research that improves the economic viability of alternative energies based on these crops should be encouraged.



(More information on the expansion of advanced energy in Ohio's 18th Congressional District can be found in the advanced energy section of this report.)

Passing and Implementing the 2008 Farm Bill

At the RENEW Agriculture Working Group meeting, many of the issues discussed involved the need for a new Farm Bill. After a year and a half of debate, Congress overrode the President's veto on June 18, 2008 and enacted the Food, Conservation and Energy Act, also known as the 2008 Farm Bill. The comprehensive bill covers virtually all of the major issues impacting agriculture and rural communities. Specifically, the bill does the following:

Successes:

- **Ends Moratorium on State Inspected Meat** – The new Farm Bill includes legislation by Congressman Space to allow state meat inspection facilities that meet or exceed federal inspection standards to approve meat for shipment across state lines.
- **Streamlines USDA Broadband Program** – The bill includes legislation sponsored by Congressman Space to improve the USDA broadband loan process to make it easier for telecom companies to access rural broadband loans to expand in rural areas.
- **Provides a Safety Net to Farmers** – The bill continues to provide a safety net to agriculture producers for 25 different commodities including corn, wheat, wool, soybeans, and dairy products. The bill prevents those making more than \$750,000 in annual adjusted gross farm-related income from receiving federal subsidies and prevents anyone making more than \$500,000 in non-farm-related income from receiving such subsidies.
- **Continues Food Assistance** – The bill provides an additional \$10.4 billion in food assistance through food stamps, the Women, Infants and Children (WIC) program, school lunch programs, etc. The bill provides support to emergency feeding organizations, such as food banks, food pantries, and soup kitchens, by increasing funding for the Emergency Food Assistance Program (TEFAP) by \$1.25 billion – with \$50 million for immediate shortages at food pantries.
- **Mandates Country-of-Origin Labeling** – The bill mandates country-of-origin food labeling for meat and produce.
- **Increases Conservation Programs** – The bill increases funding for conservation programs by almost \$8 billion.
- **Creates an Open Fields Program** – The bill establishes an open fields program to encourage public access to private land for hunting and fishing.

- **Promotes Rural Historic Preservation** – The Farm Bill includes legislation cosponsored by Congressman Space to add “promotion and preservation of rural heritage” to the list of eligible projects to be considered for Planning Grants under the Rural Strategic Investment Program. Rural downtowns would be eligible for funds to be used in historic preservation and economic development.
- **Improves EQIP Program** – The bill expands and streamlines the Environmental Quality Incentives (EQIP) program to make it more user-friendly to ranchers and farmers. EQIP funds are used to help defray the costs to producers for conservation efforts.
- **Provides Dairy Safety Net** – The bill extends the Milk Income Loss Contract Program (MILC) until 2012. This program provides security to dairy producers by compensating them when domestic milk prices fall below a specified level.
- **Supports Youth Education Programs** – The Farm Bill supports funding agriculture education programs through the Future Farmers of America, 4-H Councils, and the Girl Scouts.
- **Prevents FSA Consolidation** – The bill prevents the USDA from closing or relocating Farm Service Agency offices for two years.

Conclusion

Agriculture has always been an important economic engine in the Ohio's 18th Congressional District, but the industry is going through changes that have the potential to significantly benefit the sector or cause it major harm in the region. The congressional district is very diverse in the types of crops and animals produced. Additionally, farms tend to be smaller and mid-sized compared to the rest of the state.

Stakeholders must work to ensure that there is enough land for farmers to grow crops in the region. They also must work to make sure that taxes are not overly burdensome. Federal and state governments need to continue to invest in agriculture research to improve crop production by preventing diseases and creating new practices and technology. The government must also work to improve infrastructure in the region to facilitate the transportation of goods and services. Efforts should also be made to support the development of renewable energy industries that rely on crops grown in the district for the production of fuel. Finally, with the recent passage of the 2008 Farm Bill, it is critical that producers take advantage of the programs created or improved by the legislation.

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ADVANCED ENERGY

Executive Summary

Under the current political and economic climate, momentum for a shift towards the production of energy and fuel from advanced sources is growing. Policies should be implemented that grow demand for this production, creating a more concrete market for advanced energy. To maximize the economic opportunity of such a market growth, Ohio's 18th Congressional District must develop a workforce prepared to assume the new labor demands. Governmental and private support must also be derived for the installation of the necessary infrastructure. To maintain competitiveness, research and development into new energy technologies must continue in the region.

Introduction

Energy has long been critical to the economy of Ohio's 18th Congressional District, particularly as it relates to the production of coal. While coal will always be important to the region, new opportunities are presenting themselves in the development of advanced renewable energy that could benefit the region. It is of critical importance to the economic development of the region that we take advantage of these changes.

Information on the industry as it exists in the District now is limited, and comprehensive analyses are difficult to uncover. In fact, a 2006 report from the Solar Energy Society (SES) noted that "a comprehensive study of these industries has never been attempted."

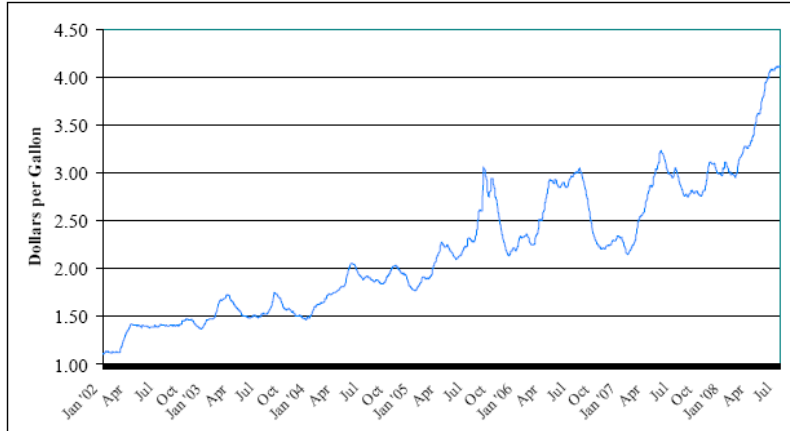
However, existing studies indicate significant potential for job growth in the advanced energy field. A 2008 study, authored by Robert Pollin and Jeanette Wicks-Lim of the Department of Economics and Political Economy Research Institute (PERI) of the University of Massachusetts, suggests as many as 551,000 jobs in Ohio could be positively impacted by advances in energy production.²² Additionally, the SES report suggests that under optimal conditions, 175,000 new jobs will be created in Ohio by 2030.

Critical to the outlook on jobs in advanced energy is the current debate on energy policy. Sharp increases in the price of gasoline continue to place American working families in a difficult position, particularly in rural regions of the country like the District. The chart below outlines the path of this rising price to its recent

²² Pollin and Wicks-Lim (2008)

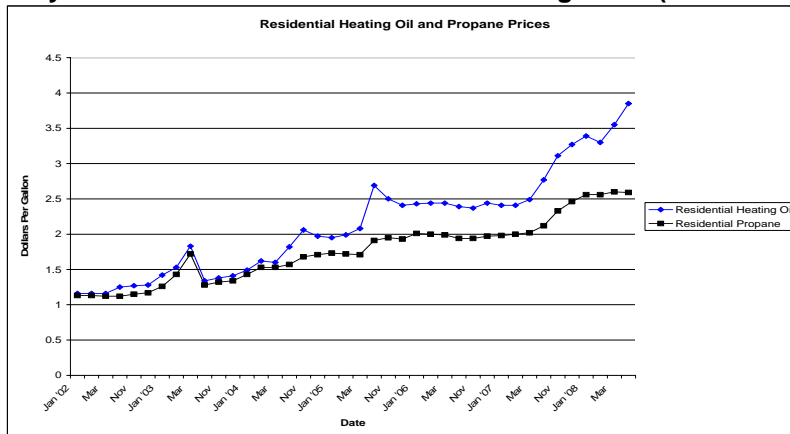
record highs of more than \$4.00/gallon. Similar increases are expected in the cost of providing heating and electricity to American homes.

Average Daily Nationwide Price of Unleaded Gasoline (Jan 2002 – Jul 2008)



Source: Congressional Research Service

Average Daily Nationwide Price of Residential Heating Fuels (Jan 2002 – Jul 2008)



Source: Energy Information Administration, compiled by staff of Rep. Zack Space

While this report does not discuss the many factors that contribute to the rising cost of energy, it is clear that the economic burden it places on American consumers is generated from a dependence on relatively few sources. Because the United States relies so heavily on products such as oil and other fossil fuels for energy production, changes in their price have a significant economic impact on consumers.

Rising prices have therefore created new momentum for the production of energy from diverse, advanced sources. Significant debate exists over the most effective and efficient approach to lowering the price of gas in the short term. This report intends to look towards long-term energy independence through a movement in the direction of fuel and energy production from new sources. Production of energy from new domestic sources would alleviate dependence on

particular sources of energy, mitigating the financial crises that stem from price increases in products such as gasoline.

As with any rising sector, the growth of the alternative or “advanced” energy sector will create new jobs. New demand for energy infrastructure will spur opportunities in the manufacturing industry, including new infrastructure developments with wind turbines, solar panels, “green” building materials, and equipment necessary for the production of ethanol. Additionally, this demand can spur new jobs in the administration, sale, and upkeep of this equipment.

Critical to the advance of this industry is the development of more concrete demand for alternative energy. Fluctuating government policies mean mandates and financial incentives for build-outs are unstable, while consumer interest fluctuates depending on the price of existing energy sources.

Working under the assumption that policies will be implemented that solidify the demand for advanced energy production, investments must be made to ensure that the District is prepared to seize upon the opportunities of this new market. Use of this new infrastructure and technology will require development of a workforce prepared to fill the roles needed for the new production. Hocking College’s Energy Institute already represents an important example of the role institutions of secondary education will play in this process, and similar programs must be developed in the region.

In addition to a development of the workforce, costly infrastructure investments will also be central to any economic success in the advanced energy field. Construction of new equipment and production of new energy sources will require the purchase and development of facilities capable of supporting the emerging sector.

Ensuring The District has an opportunity to participate in the emerging advanced energy sector will take the concentrated efforts of both governmental and private sectors. Goals can generally be divided into the following categories:

- **Generating Market Demand**
- **Creating a Workforce**
- **Developing Infrastructure**
- **Future Research and Development**

Steps toward implementation of each of these goals are detailed below.

Generating Market Demand and Other Incentives

As rising energy prices continue to draw attention to the need for investment in advanced energy production, policies must create a concrete demand for its production. In such a fledgling industry, mandating or offering incentives for long-term growth will increase the likelihood of investment in the industry.

At the federal level, existing tax credits for advanced energy production spur expansion in the industry. However, after the legislation that created these tax breaks expired in 2000, the credit expired three times, and had to be repeatedly extended for short periods of time. This lack of consistency has made the credit less useful in promoting long-term expansion.²³ At the present time, Congress has not passed a one-year extension of provisions expiring at the end of 2008.²⁴

Congress has also considered legislation that would mandate a Renewable Portfolio Standard (RPS). An amendment to HR 6, comprehensive energy legislation passed into law at the close of the first session of the 110th Congress, would have created such a standard but failed during consideration of the legislation in August, 2007. This legislation prescribed a narrow scope for advanced energy, focusing on solar, wind, and biomass as the only eligible sources, did not acknowledge the potential for other resources in Ohio, such as clean coal, for contributing to advanced energy production.

Subsequently, the state of Ohio recently passed an RPS under the leadership of Governor Strickland, which mandates that 25% of energy be produced from advanced sources by 2025. Half of this percentage must be derived from wind, solar, and biomass sources, while the remainder may be generated through the production of clean coal and nuclear power. This plan better utilizes Ohio's natural resources in developing advanced energy, demonstrating the advantage of state specific plans over a federal mandate.

Enactment of these and similar policies will be an important part of the growth of the advanced energy sector. While demand for advanced energy is growing, these initiatives help to solidify the demand and make the industry more attractive.

Recommendations:

- **Support a Tailored Renewable Portfolio Standard** – Though Ohio has already passed a Renewable Portfolio Standard, many believe that Congress will consider a more aggressive federal standard in either this or the next Congress. Consideration of any federal RPS must be tailored towards the utilization of resources in the region.

²³ Sissine (2008)

²⁴ While both the House and the Senate have cleared differing versions of such an extension, disagreements between the different versions of the legislation have prevented its enactment into law.

- **Develop Long-Term Consumer Incentives** – Consumers have opportunities to make investments that offer eventual cost savings, but that may not be financially feasible in the short term without monetary incentives. Policies should be implemented that offer financial incentives through tax credits and other means.
- **Development of Business Incentives** – Similar to consumer incentives, businesses can also benefit from policies that encourage investments into advanced energy production. Without financial incentives, such investments may not be possible. Particularly for small businesses, the purchase of a wind turbine or solar panel may be disruptive to business models. Tax incentives and other financial support will allow these businesses to be participating consumers in the immediate future.
- **Improve Education and Promotion Efforts** – For many individuals and businesses, awareness of the opportunities presented by advanced energy purchase is low. Publicizing the potential economic benefits created by use of advanced energy sources and continual updates on the development of governmental incentives for their purchase will help to drive interest in these areas. Federal, state, and local governments can play a role in this promotion, as can other economic development entities.
- **Working with Energy Producers** – As energy producers continue to investigate investments into advanced energy production, working with policymakers to find ways to ease the cost of this transition is critical. Significant shifts in energy production require massive expenditures from these companies, challenging existing models. Policymakers should work with producers to develop financial support for the change.

Creating a Workforce

As advanced energy involves the use of rapidly-developing technology, the need to create training systems that will produce a workforce capable of evolving with the industry is imperative. As discussed earlier in this paper, estimates suggest that an existing 551,000 jobs can be expected to be positively impacted by new opportunities in Ohio.

Preparing these workers to fill the needs of a growing advanced energy sector is critical to the success of the industry. Institutions of higher education will play an important role in this process. In The District, many colleges and universities serve as the preeminent regional training center for residents, as sparse populations minimize the emergence of alternatives. These colleges and universities must continue to develop programs that prepare students for green jobs.

Programs at Hocking College's Energy Institute offer examples of needed training programs. The Institute provides training programs in the fields of advanced energy, an important and unique training program to the region. This pipeline of workers trained in advanced energy careers will help to make the region more attractive to potential employers.

Training opportunities should not be limited to institutions of education. Other workforce training centers, using government funding, can help create new initiatives such as apprenticeship programs that can supplement the work of institutions of higher education.

The development of such programs either at institutions of higher education or other workforce centers requires an investment in resources from public or private entities. New programs require the hiring of new instructors and, frequently, expensive new equipment. Government policies that offer direct or indirect support to this end are an important part of the approach.

Additionally, awareness of career opportunities in advanced energy should begin at an earlier age. Making information on the advanced energy sector available to students at younger ages will help develop interests in relevant careers, establishing effective employment pipelines for regional industries.

An example of such efforts is Project Lead the Way (PLTW). PLTW is a nonprofit organization dedicated to increasing the number of science and technology graduates around the country. By working through the Ohio Department of Education to link Ohio educators with professional development opportunities, PLTW offers additional exposure to potential new careers to young students.

Recommendations:

- **Support the Development of Workforce Training Programs** – Given the breadth of technology addressed in the field of advanced energy, the establishment of a broad number of programs will likely be necessary. Government programs that offer financial support for the creation of workforce training programs should be used to create new training centers that will supplement existing opportunities at Hocking College. Enactment of legislation like Congressman Space’s HR 6759 for the Renew Through Green Jobs Act of 2008 that offers financial support for institutions of higher education to develop training programs in advanced energy would greatly improve this process.
- **Establish Connections Between Educational Institutions and Advanced Energy-Producing Companies** – The demand for a new workforce can best be assessed by the companies seeking to produce advanced energy. Relationships between these companies and both secondary and post-secondary educational institutions can foster early interest and development through internship and apprenticeship programs. Both schools and companies should seek to form these relationships.
- **Improve School Curricula to Improve Awareness of Advanced Energy** – As debate over effective energy policy continues in the face of record high energy prices, teaching young students about the essential nature of advanced energy production will help to drive interest and pursuit of relevant careers. Policies should be implemented at the state and local level that drive this change.

Developing Infrastructure

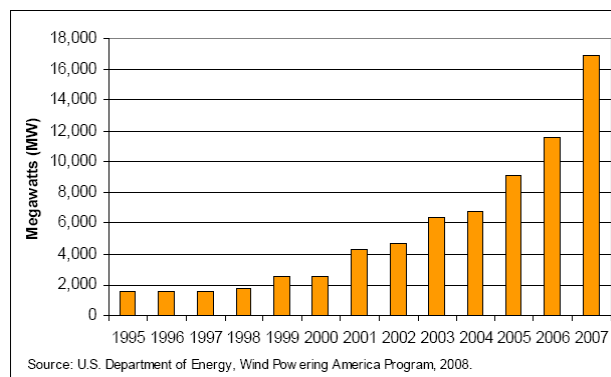
The rise of a major new sector always requires a significant investment in infrastructure. As with other sectors, financial support for this investment has historically derived from venture capital and the support of entrepreneurs. While future investments will likely continue, in an emerging sector without a clear market for demand, governmental support is likely to be necessary.

Advanced energy is a broad field with differing requisites, depending on the source of the energy. As such, specific policies and methods of support are likely needed to promote the proper investments in each of the sectors.

Wind/Solar

Wind and solar power production are the most frequently referenced and least controversial sources of advanced energy. Producing energy from both solar and wind sources has a minimal impact on the environment, and the technology used in its production is more advanced than in other forms of advanced energy.

Wind energy has been produced at significant levels beginning in the 1980s. Driven by high energy prices, the original sites of production were outside of San Francisco using what are now considered rudimentary turbines. Over time, technology has evolved and made turbines over 100 times more powerful than the original models. Wind energy is now the fastest-growing source of energy in the country, growing by more than 150% between 2004 and 2007.²⁵ This growth is generally attributed to improvements in wind energy technology, high and volatile fossil fuel prices, the federal wind production tax credit (PTC) incentive, mandates for advanced energy production, difficulty siting and financing new coal-fired power plants given expectation of a future carbon constraint, and consumer preference for advanced energy.²⁶



Expansion of the wind industry to The District will require a significant investment in infrastructure, principally in the form of new equipment and production facilities. Development of this infrastructure can be supported through continued

²⁵ Logan and Kaplan (2008)

²⁶ Logan and Kaplan (2008)

demand for the industry, government policies that offer financial support and incentives for promoting wind energy production, and the continued discussion on global warming.

Similar to the case of wind energy, high energy prices in the 1970s were the impetus for the first major growth in the solar energy industry. Federal and state tax credits spurred investment in the industry, and commercial use of solar energy began to rise. Lowered costs for fossil fuels in the 1980's muted the demand for alternative energy, and the majority of federal tax credits meant to encourage the use of solar energy expired in the mid-1980s. Since 1998, another increase in energy prices and new concerns about climate change pushed Congress to revisit tax incentives for solar energy production.

Solar energy can be utilized through a variety of instruments. Energy from solar sources can be converted to electricity through photovoltaic (PV) devices, or solar cells, as well as solar power plants. Additionally, solar energy can be converted to thermal energy and used to heat water and interior spaces.

As opposed to wind energy, solar energy has trended towards smaller units more readily available for purchase to individual consumers. Individual consumers are therefore responsible for a larger share of the solar power market than wind power. Tax credits targeted to these individual consumers are more important to the industry than the renewable power production tax incentive.

As wind and solar remain the most noncontroversial forms of advanced energy, incentives for expansion in the industry are likely to continue at both the state and federal level. Policies should continue to be enacted that aid the industry in future growth.

Recommendations:

- **Provide Stable and Long-Term Financial Incentives** – While wind and solar energy production have already been supported through tax incentives, questions about the longevity of those tax incentives has tempered interest in the field. Federal and state government actors must commit to long-term financial support for these industries to foster investment in industry expansion.

Biofuels

The use of alternative fuel from biomass – plant and animal material used to produce fuel - has shown promise over the years as a way to reduce America's dependence on foreign oil and cut greenhouse gas emissions. However, economic barriers have limited the widespread use of these fuels. To overcome these barriers, the federal government provides economic incentives for biofuels through mandates, tax credits, and tariffs.

In his January 24, 2007 State of the Union Address, President Bush called for the increased use of renewable and alternative motor fuels to 35 billion gallons annually by 2017. At that time, U.S. consumption was roughly five billion gallons.²⁷ Therefore, such an initiative would mean a seven-fold increase in the use of these fuels over 11 years.

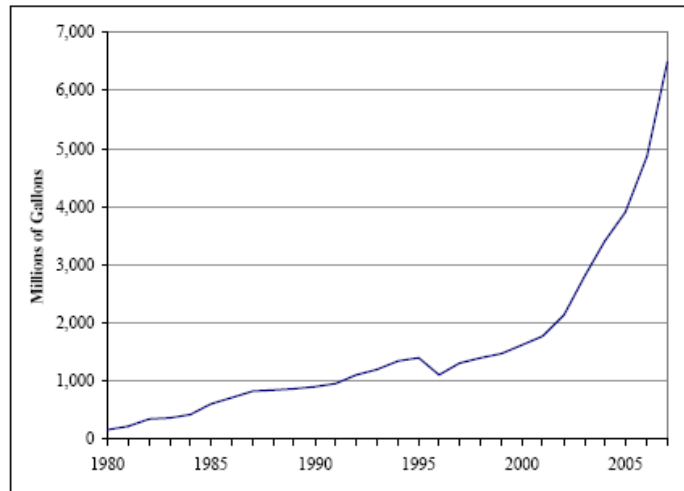
On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) became law. EISA requires an increase in annual renewable fuel consumption from 9.0 billion gallons in 2008 to 36 billion gallons in 2022. Under Governor Strickland's administration, Ohio recently adopted similar legislation. Further, within the 36-billion-gallon requirement, by 2022 the new law mandates the use of 21 billion gallons of "advanced biofuels," defined as fuel derived from renewable biomass other than corn starch, with 50% lower lifecycle greenhouse gas emissions compared to petroleum fuels.²⁸

Ethanol is the most prominent biofuel in the United States and has both supporters and opponents. Fuel ethanol in the United States is usually made out of corn and is blended in gasoline to reduce emissions, increase octane, and extend gasoline stocks. Ethanol advocates believe that its use can lead to lower emissions of toxic and ozone-forming pollutants and greenhouse gases, especially if higher-level blends are used. They further argue that ethanol use displaces petroleum imports, thus promoting energy security.

²⁷ Congressional Research Service, *Alternative Fuels and Advanced Technology Vehicles: Issues in Congress*, February 1, 2008

²⁸ Congressional Research Service, *Alternative Fuels and Advanced Technology Vehicles: Issues in Congress*, February 1, 2008

Ethanol Production in the United States, 1980-2007



Source: Renewable Fuels Association, April 25, 2008, [<http://www.ethanolrfa.org/industry/statistics/>].

Those opposing ethanol argue that various government policies supporting ethanol distort the market and amount to corporate welfare for corn growers and ethanol producers. Further, they argue that the energy and chemical inputs needed to turn corn into ethanol actually increase emissions and energy consumption. However, most recent studies have found modest energy and emissions benefits from ethanol use, relative to gasoline, depending on how the ethanol is produced.²⁹

Opponents of ethanol also believe government policies to support ethanol are increasing food prices. While a number of variables, including high energy costs, contribute to the increase in these prices, ethanol policies are a factor. In an effort to promote the use of alternative fuels to reduce our dependence on foreign oil without increasing food prices, Congress supported billions of dollars through tax incentives and research for the development of cellulosic ethanol in the 2008 Farm Bill. Cellulosic ethanol is developed from non-edible feedstock such as switch grass and forage.

While supporters and critics argue about the merits of ethanol, Ohio's 18th Congressional District has and will continue to benefit from government policies that promote the development of biofuels. The District currently has one ethanol plant with more planned in the future. According to the 2002 USDA's Agriculture Census, the top crops in Ohio's 18th Congressional District include forage, corn, and soybeans. These crops are currently used as feedstock in the development of biofuels. Converting crops that can be grown in the district into biofuels allows farmers in the 18th Congressional District to take advantage of the emerging biofuel industry.

²⁹ Congressional Research Service, Fuel Ethanol: Background and Public Policy Issues, April 28, 2008

The development of biofuels offers promising benefits to rural communities throughout the United States. According to the Public Utilities Commission of Ohio, economic activity associated with biomass (living and recently dead biological material that can be used as fuel) currently supports about 66,000 jobs in the U.S., most of which are in rural regions. The Department of Energy predicts that by the year 2010, over 13,000 megawatts of biomass power could be installed, with over 40 percent of the fuel supplied from 4 million acres of energy crops and the remainder from biomass residues. This increase in production would support over 170,000 U.S. jobs and could significantly benefit rural economies.³⁰

The use of locally-grown biofuels will keep energy dollars invested in Ohio's 18th Congressional District. Biomass energy crops can be a profitable alternative for farmers and provide high paying bio-refinery jobs in the area.

Recommendations:

- **Continue State and Federal Mandates to Create a Market for Biofuels**
– Both the federal government and the state of Ohio should continue to encourage the use of biofuels through mandates. New mandates will help to spur demand in this industry, making it more attractive for investment. It is important that mandates also include biofuels that utilize feedstocks that can be grown in Ohio's 18th Congressional District, most noticeably corn.
- **Continue and Strengthen Tariffs on Foreign Ethanol** – Most countries around the world have import tariffs on fuel ethanol. The United States has a small tariff to compliment the tax incentives provided to encourage domestic ethanol production. It is important that the federal government continue to promote domestic ethanol production while preventing foreign imports from receiving tax incentives. The United States is the largest producer of ethanol, but Brazil is a close second. Efforts to allow the use of foreign ethanol to enter our market can undercut domestic ethanol production and continue to prevent energy independence.
- **Encourage Research to Spur the Development of Cellulosic Ethanol**
– Many of the critics of ethanol point out that government policies to promote corn based ethanol have caused increases in food prices for humans and feed prices for livestock. The development of cellulosic ethanol has tremendous promise to assist the attainment of renewable mandates without the possibility of increasing the cost of food and feed. The 2008 Farm Bill invests billions of dollars into cellulosic ethanol research. Effort to support this research should be continued and will

³⁰ The Public Utility Commission of Ohio. "Biomass Energy and its Benefits ." The Public Utility Commission of Ohio Website. 1 August 2008.
<<http://www.puco.ohio.gov/PUCO/IndustryTopics/Topic.cfm?id=4400>>.

benefit Ohio's 18th Congressional District. This research will allow farmers to profit from traditional ethanol techniques that utilize corn, while pursuing new feedstocks that can be grown in parts of the district that currently grow hay and grass, but cannot grow corn or soybeans.

- **Improve Rail Infrastructure in the District to Support Biofuel Facilities** – Rail infrastructure is critical for the development of ethanol facilities in Ohio's 18th Congressional District. These facilities rely on railroads to deliver their feedstock cheaply and efficiently. Efforts to encourage the development of competitive rail infrastructure should be encouraged.
- **Support the Production of Polymers Made from Biomass in Ohio** – Ohio is a leader in the agriculture industry, production of chemical polymers, and advanced materials industries. By aligning these sectors, the state is poised to be the world leader in a new market – products made from biobased materials. Recently, the Ohio Department of Agriculture completed a report by the Ohio Agriculture to Chemicals, Polymers and Advanced Material Task Force that recognizes that Ohio is poised to be a leader in the production of biobased materials. Efforts to support the task force's recommendations should be encouraged by federal and state leaders.

Clean Coal

Ohio's abundant supply of coal is an integral part of the region's history. Production of coal is known to have started before Ohio's entry into the union in 1803. Significant improvements in methods of transportation and mining enabled Ohio's coal production to steadily increase until the Great Depression. Following the temporary downturn in coal production caused by the Great Depression, use of coal again continued to grow until 1970. Federal regulations on air quality beginning with passage of the Clean Air Act in 1963 caused a decline of over 50% in the latter half of the century.

Many of the counties in the 18th Congressional District are among the leading producers of coal in the state. Belmont County has produced more coal than any other county in the state, followed by Harrison County. Athens, Guernsey, and Muskingum counties historically have also been leading producers of coal.

Since 1950, the role of coal in energy production has been significantly limited. Once used to fire and power a variety of facilities, it is now used almost exclusively for the production of electricity. In 1950, only 20% of coal production was used for electricity, while that number stands well over 90% by 2007.³¹

Over that same time period, consumption of coal has doubled in the United States. This increase is part of a consistent and continuous growth in energy demand in the United States. This increase is also a product of the declining use of oil as a source of electricity.

The advent of discussions on climate change and global warming has renewed concerns about the environmental impact of using coal as a source of electricity. These discussions have led to consideration of "clean coal" technology and discussions of carbon capture technology that would minimize the environmental impact of coal and allow it to continue as a major part of the American energy portfolio. This technology is in the early stages of development.

Discussion of new technology that would transform coal into a liquid fuel has triggered additional possibility for uses of coal. So-called coal to liquids (CTL) technology remains in its infant stages of development, but significant support exists for its further expansion.

In 2007, Beard Energy announced the creation of the Ohio River Clean Fuels Project in Wellsville. This project is designed to use local coal sources to produce liquid fuels through a gasification process. This facility has created new employment opportunities, demonstrating the potential for CTL to be an engine for economic growth in the region.

Some controversy exists over the continued use of coal, particularly when discussed as a source of advanced energy. Opponents of clean coal and CTL

³¹ Glover and Behrens (2008)

argue that technological advancements may temper the damaging effects of coal usage on the environment, but will never fully curb them. Supporters point to significant technological improvements that have been made since passage of the Clean Air Act, and the fact that coal remains an inexpensive, abundant domestic source of energy.

Recommendations:

- **Support “clean coal” and carbon capture initiatives** – As with CTL technology, the development of new ways to burn coal for energy can create new opportunities. Financial support for potential projects in The District should be supported, as should policies that expand governmental support for such projects.
- **Work with Energy Producers to Enhance Equipment** – Energy producers using coal have been compliant with changes in federal regulations over time, which frequently have required equipment upgrades. Policymakers should work with these companies to develop methods of support that will upgrade existing technology to continue the use of coal.
- **Support for Coal-to-Liquids (CTL) Facilities** – Political discord over CTL technology has impaired support for CTL initiatives in the past. Federal and state incentives for new CTL facilities must be established to foster new jobs in this emerging technology.

Future Research and Development

As a new emphasis on advanced energy continues in Congress, so too will the speed of the evolution of the industry. Policies that succeed in driving demand and expansion in the industry will naturally foster additional research and development into improving existing technologies and deriving fuel from new sources.

Regional initiatives that spur research and development into evolving energy technologies are critical to the long-term success of the advanced energy sector in The District. New technologies and innovation offer the easiest opportunities for success and growth, and moving the region to the forefront of these discussions would make the industry much more viable over the long term.

The region's institutions of higher education already offer an ideal opportunity for this research. The Consortium for Energy, Economics and the Environment (CE3) was formed at Ohio University in 2005 to spur and support research into advanced energy. Using the resources of the University and working collaboratively with different parts of the University, CE3 has been an important part of efforts to continue research in the region.

Additionally, the Ohio State University's Extension School has several facilities around the District that conduct important research into biomass. Similar to Ohio University's CE3 initiative, the Extension School's programs utilize the resources at Ohio State to improve research efforts in the area and keep the District involved in advanced energy research.

Growth in research and development initiatives in the region will help to continue the spirit of innovation so critical to the advanced energy field. Policies and efforts that foster additional research are critical to this region's continued success.

Recommendations:

- **Support for Research Initiatives at Educational Institutions** – Institutions of higher education are important centers for research into advanced energy. Larger institutions, in particular, with their vast resources are ideal for propelling The District forward in research into advanced energy. Policies that create financial support for these institutions must be implemented.
- **Establish More Research Centers** – The region is home to several institutions of higher education, including Ohio University. Developing additional resources to attract research support is critical to continued development of energy technology. Policymakers should work to target government funds toward the creation of such centers.

Conclusion

Rising prices for traditional sources of energy continue to foster discussion of a movement toward advanced energy sources. Federal and state policies increase the viability of new energy sources and help to foster development in the advanced energy sector, creating significant opportunity for job growth.

Creating a workforce prepared to participate in the sector is an important part of preparing the region to take advantage of additional demand for advanced energy. While initiatives are already underway at local higher education institutions to make this transition, additional incentives to create new training programs and draw more interest from the available workforce are also key.

Development of necessary infrastructure is perhaps the most challenging aspect of the process. Though the history of the different sources varies significantly, each requires a significant investment of capital in order to expand in Ohio. Financial incentives to the industry are therefore critical in moving the industry forward in the region.

Finally, enhancing the long-term viability of the advanced energy sector in Ohio's 18th Congressional District will require attention to additional research and development efforts. Ongoing initiatives within the region help to make it an opportune place for investment into biomass research. However, in order to maximize the potential for additional expansion into new, innovative areas, support for research institutions must be a centerpiece in any effort.

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HEALTH CARE

Executive Summary

As America's baby boomer population continues to age, the increase in demand for health services will generate growth in the sector. Steps must be taken to ensure that the region has a workforce adequately prepared to meet the region's demand. Attracting and retaining health care professionals in Ohio's 18th Congressional District is difficult given the geographic area and the salaries available. Expansion of education and training opportunities, attracting more physicians, improving access to technology, and improving market forces are all critical to the development of the health care sector in the region. Quality health care service also serves as an engine for economic growth, improving workforce productivity and making regions attractive for new industry.

Background

The aging of the so-called "baby boomer" generation suggests a pending surge in demand in health services for Ohio and the rest of the country. At the conclusion of World War II, the return of American service members to the United States brought with it an accompanying surge in births. This new generation, labeled the baby boomers, generally refers to Americans born between 1946 and 1964. The U.S Census estimates that there are 78.2 million Baby boomers living in the United States.³² Born during a time of rapidly rising birthrates after the successful conclusion of World War II (1946-1964),³³ the nation's first Baby boomer filed for Social Security benefits in January 2008. Over the next two decades, nearly 80 million Americans will become eligible for Social Security benefits, at the staggering rate of more than 10,000 per day.³⁴ While there are presently over 44 million Americans enrolled in Medicare, that number is expected to increase by more than 50% by 2025, and double by 2050.³⁵

The aging of this population offers the possibility of a looming national crisis for the health care system, as the aging of the baby boomers will likely be accompanied by a significant national increase in health care spending. In 2004, people age 45-64 spent an annual average of \$2,695 on health care, while those

³² US Census Bureau - <http://www.census.gov/popest/national/>

³³ Some disagreement exists over the specific year range. This report accepts the birth years, used by the SSA & the Census, noting the discrepancy with William Strauss and Neil Howe (Strauss, William and Neil Howe. Generations. New York: HarperCollins, 1991.)

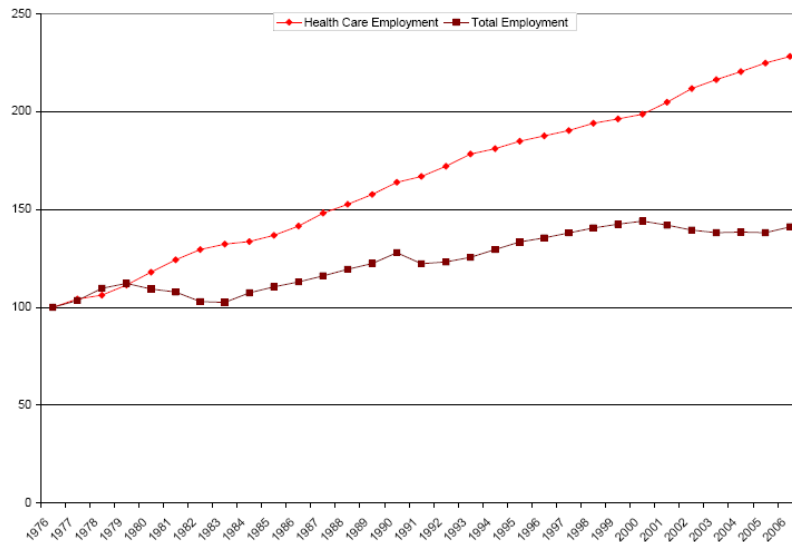
³⁴ SSA - Social Security Administration press release

³⁵ Medicare Trustees Report

age 55-64 spent \$3,262 and those 65 and over spent \$3,899.³⁶ Clearly, as the percentage of older Americans needing more services and spending more on health care increases, government and industry must respond with investments in this sector.

Recent decades have already yielded significant and consistent growth in employment in the health care sector. A report from the Ohio Department of Job and Family Services states that between 1976 and 2006, the total number of workers in the health care sector grew from 277,500 to 633,000, an increase of 228%.³⁷ As the chart below demonstrates, this growth far surpasses growth in all other areas of employment combined.

Health Care and Employment Growth (Indexed to 100 in 1976) in Ohio



Source: Ohio Department of Job and Family Services
 Total and health care employment levels were indexed or set equal to 100 for 1976.

Unlike the other sectors assessed through the RENEW initiative, increase in demand for health services is expected to continue without the implementation of policies to stimulate the industry. A report from the Ohio Department of Job and Family Services suggests that “at both the national and state levels, health care industries are projected to create more new jobs than any other major industry group—approximately three million new health care wage and salary jobs nationally between 2006 and 2016, and approximately 91,400 new jobs in the private health care system in Ohio from 2004-2014.” More specifically, between

³⁶ Bureau of Labor Statistics

³⁷ ODJFS (2008)

2004 and 2014, there will be 22,176 annual openings for health care occupations in Ohio.³⁸

However, ensuring that the District is adequately prepared to meet the new demands raised by the aging population is of significant concern. Shortages of doctors, nurses, and other health professionals plague rural areas throughout the country, where lower salaries, as well as the threat of social and professional isolation, deter relocation.³⁹ Echoing a national trend showing more shortages in rural areas than in urban, federally-designated Health Professional Shortage Areas (HPSAs) can be found throughout the region, offering a reminder of another disadvantage facing rural America.

Compounding this challenge is the scarcity of financial resources available to the health care industry in rural America. Rural patients tend to be covered by government health insurance programs, such as Medicare and Medicaid, in greater numbers.⁴⁰ These programs reimburse health care providers at lower rates, placing health centers and providers at a disadvantage to urban and suburban counterparts both in services offered to patients and salaries available to health professionals.

Also of concern is the strain that the expected increase in demand will place on health insurance systems. Medicare, in particular, is expected to come under enormous strain with the expected jump in beneficiaries, raising the question of the long-term solvency of the program. Making sure that health insurance and the cost of care is paid for or supported in some manner must be a part of discussions to expand the health care sector.

Expected shortages represent both a challenge and an opportunity for the District. Matching a skilled workforce with employment demands benefits patients and job-seekers alike, as the health care sector represents a clear pathway to employment opportunities for Ohio's rural residents.

To ensure Ohio can seize on the opportunities of the health care sector, advances are needed in four areas:

- **Education and Training**
- **Physician Recruitment**
- **Technology**
- **Market Forces**

The following analysis focuses on the specific areas of need addressed by each of these sectors.

³⁸ ODJFS (2008)

³⁹ Woods et al (2006)

⁴⁰ Woods et al (2006)

Education and Training

Demand for health professionals is expected to continue to grow in Ohio due to both the aging of the baby boomers and the retirement of existing health professionals. The Ohio Department of Job and Family Services reports that, in Ohio, there will be 22,176 projected annual openings in health care occupations from 2004 to 2014. Of those positions, 48.1% of the growth is projected to be caused by a need for replacements.⁴¹

Training/Education Level	Employment		2004-14 Change		Total Annual Openings
	2004	2014 Projected	Net	Percent	
All Healthcare Occupations	591,340	706,390	115,050	19.5%	22,176
Short-Term On-the-Job Training	81,540	105,780	24,240	29.7%	3,758
Moderate-Term On-the-Job Training	41,780	54,280	12,500	29.9%	2,048
Long-Term On-the-Job Training	5,960	6,290	330	5.5%	147
Postsecondary Vocational Award	167,530	188,280	20,750	12.4%	4,821
Associate Degree*	154,460	189,270	34,810	22.5%	6,816
Bachelor's Degree	39,050	44,910	5,860	15.0%	1,372
Work Experience plus a Bachelor's or Higher Degree	10,620	12,260	1,640	15.4%	371
Master's Degree	31,800	37,480	5,680	17.9%	1,150
Doctoral Degree	5,460	6,200	740	13.6%	193
First Professional Degree	52,370	60,860	8,490	16.2%	1,687

*Registered Nurses are included in this category. Training requirements may be met through a two-year associate's degree, a three-year diploma, or a four-year bachelor's degree.

Source: Ohio Department of Job and Family Services (2008)

The training requirements vary significantly. Over one-quarter of the expected jobs require less than a year of on-the-job training and are therefore easier to fill. Conversely, over 3,000 of the projected openings will require a Master's Degree or higher, requiring a more concerted effort for recruitment.⁴²

The ODJFS assessment raises significant questions about the ability of existing education and training infrastructure in Ohio to meet this new demand. The chart below indicates a number of critical health professions in which the demand for new workers exceeds the supply produced by the current educational infrastructure. This deficit suggests that adjustment in the existing infrastructure will be necessary to meet existing demands.

⁴¹ ODJFS (2008)

⁴² ODJFS (2008)

Title	Avg. An. Openings 2004-14	Training Output 2005-06	Entering Labor Market	Difference	2006 Avg. Hr. Wage	Wage Growth 2002-06
Registered Nurses*	4,630	5,397	4,587	43	\$26.50	17.8%
Nursing Aides, Orderlies, and Attendants	1,994	1,113	946	1,048	\$10.98	10.4%
Licensed Practical & Licensed Vocat. Nurses	1,204	3,519	2,991	-1,787	\$18.08	13.7%
Medical Secretaries	752	825	701	51	\$12.82	11.8%
Medical Assistants	1,044	3,202	2,722	-1,678	\$12.09	8.9%
Dental Assistants	582	579	492	90	\$14.28	14.4%
Emergency Medical Technicians & Paramedics	301	682	580	-279	\$12.64	3.0%
Radiologic Technologists and Technicians	394	567	482	-88	\$21.93	24.7%
Medical Records & Health Info. Technicians	227	694	590	-363	\$14.25	17.0%
Medical and Clinical Laboratory Technologists	275	98	83	192	\$23.07	15.3%
Dental Hygienists	226	244	207	19	\$28.00	12.5%
Respiratory Therapists	278	265	225	53	\$21.67	15.2%

Entering Labor Market reflects that of those completing training programs, about 15 percent do not enter the occupational market. Please see the Technical Notes. Training Output includes completers through the Bachelor's level.

*Training output only includes Registered Nurse Training (CIP 51.1601).

Source: Ohio Department of Job and Family Services (2008)

As with much of the country, the most significant future demand need lies in the field of registered nurses, a field known to have national shortages in available training programs. A recent study from the American Association of Colleges of Nursing revealed that despite a projected national shortage of 500,000 nurses, over 30,000 applicants to nursing school were rejected from nursing programs in 2007.⁴³ This deficit indicates a shortage of training programs nationwide. While the data indicates that Ohio has done well to keep pace thus far, the ODJFS report suggests that there is reason for concern for the future of this profession.⁴⁴

While registered nurses remain the largest demand, the ODJFS report expresses concern for keeping pace in the fields of lab technologists and dental hygienists. This concern is, in part, a reflection on the availability and length of training programs, as training programs for nursing aides, orderlies, and attendants are only two months in duration.⁴⁵

Also important to note is that these projections may change. Focusing on training in one profession for too long can cause an overproduction of a given occupation, as Ohio is presently experiencing with licensed practical nurses (LPN's). Enacted policies must be careful to avoid such problems.

Concern of the pending and existing shortages is high in the medical community, leading to prior action in the district. In September 2008, Adena Health System's PACCAR Medical Education Center will open new programs that offer classroom and clinical training opportunities to nurses, nursing students, physicians and other healthcare professionals. As the new Center and Adena Regional Medical Center increase clinical training capacity in the region, other regional nursing programs will benefit by being able, collectively, to enroll as many as 80 new nursing students. Worth noting is that these positions are reserved for displaced workers.

⁴³ American Association of Colleges of Nursing press release, December 3, 2007

⁴⁴ ODJFS (2008)

⁴⁵ ODJFS (2008)

The nursing program at the PACCAR Center offers an important example of a successful collaborative initiative. Federal, state, and private dollars were all a part of the program's success, demonstrating the importance of cooperation and regional initiatives in successfully meeting new health care workforce demands. Funding for the equipment came from the federal Workforce Investment Act funds allocated to the state of Ohio, while funding for the training originated with the Ohio Department of Jobs and Family Services.

Generating interest in health care professions at younger ages can help to develop broader interest in health care professions for the region. Instilling an interest in health care at a young age significantly increases the likelihood that a given individual will ultimately pursue a career in health care. These individuals are also likely to practice in the region, offering a significant source of new health professionals for regional health centers.

Forging relationships between health centers and school districts can improve interest in health professions from a young age. By granting young students exposure to health careers, these relationships and partnerships can foster employment pipelines that fill needed health professions in the region.

Union Hospital in Tuscarawas County has developed such an employment pipeline. Union works with regional high schools to increase awareness of opportunities for employment at the hospital, as well as information about the region's training programs. Such programs should be created throughout the region.

Further initiatives that isolate and address workplace training needs will be an important part of meeting expected increases in demands. Working at the regional level, collaborative efforts can pool resources effectively.

Recommendations:

- **Improve Regional Professional Health Care Learning Centers** – The District is home to a number of training centers for health care professionals. Included in these centers are colleges and universities that serve as regional training centers in a variety of jobs. Financial support for expansion of these centers, such as the PACCAR example, should be sought from governmental and non-governmental actors.
- **Develop Employment Pipelines to Regional Hospitals** – Establishing relationships with local school systems can spur interest in health professions at a young age. This interest can generate pipelines between these schools and local health centers, ensuring that the supply of these professionals will meet market demand.
- **Better Target Workforce Investment Programs to Shortage Areas** – While health professional shortages are becoming a problem across the country, rural areas are particularly hurt by a deficit in resources available to attract new professionals. Federal and state programs intended to

develop new training programs must be better targeted to areas of true shortage. Assessment of these shortages can come from both federal analyses and regional efforts to assess needs.

Physician Recruitment

Ohio's 18th Congressional District is in significant need of additional physicians. Under the current doctor to patient ratios, the region has a significantly higher number of residents per physicians than the rest of the state.

Residents per Physician, Counties of 18th Congressional District

	Physicians (MDs and Dos)	Population	Residents per Physician
Ohio	28,853	11,478,006	398
Appalachia	1,728	1,476,738	855
Athens	121	61,860	511
Belmont	79	68,771	871
Carroll	20	29,189	1,459
Coshocton	30	36,976	1,233
Guernsey	60	40,876	681
Harrison	3	15,799	5,266
Hocking	25	28,973	1,159
Homes	31	41,574	1,341
Jackson	29	33,543	1,157
Knox	71	58,561	825
Licking	201	156,287	778
Morgan	2	14,821	7,411
Muskingum	166	86,125	519
Ross	145	75,556	521
Tuscarawas	116	91,766	791
Vinton	1	13,519	13,519

Source: Ohio Department of Development County Profiles

The training and education of physicians and other medical doctors is worthy of separate consideration from other health professions because of the difficulty in expanding educational opportunities in this area. Creation of new medical schools is rare, meaning the regional population of physicians is more dependent on recruitment efforts, rather than establishing new education opportunities.

Rural America presently faces a crisis in drawing physicians away from more lucrative urban areas. Of largest concern to rural areas is a disproportionate supply of primary care or family physicians. While one in four Americans lives in a rural area, only 10 percent of physicians operate in rural areas.⁴⁶ This disparity has led to estimates from the Health Resources and Services Administration (HRSA) that as many as 7,000 additional primary care physicians are needed in rural and inner-city areas. HRSA similarly predicts that this gap is not likely to change if the status quo is maintained.⁴⁷

⁴⁶ National Rural Health Association website - <http://www.ruralhealthweb.org/go/left/about-rural-health/what-s-different-about-rural-health-care>

⁴⁷ GAO (2008)

The existing crisis is the product of a 30-year trend away from the practice of family medicine and toward specialty fields. Between 1990 and 1997, the total supply of physicians nationwide grew by 24.3%, while only increasing 11% in rural areas. Furthermore, the proportion of physicians serving rural areas fell between 1980 and 1990, and again from 1990 to the present time.⁴⁸ As such, over half of rural family medicine residency positions are held by students educated in other countries.⁴⁹

Lower compensation rates are the primary cause of this deficit. Doctors serving rural areas frequently manage a caseload more heavily dependent on government programs such as Medicare and Medicaid, which compensate doctors at significantly lower rates than private plans. While some federal programs, such as Federally Qualified Health Centers, designed to provide additional compensation to health professionals in these regions, have helped to alleviate some of these disparities, rural physicians generally work longer hours for lower compensation than their urban counterparts. Additionally, medical school graduates are faced with a choice between choosing the salary of a primary care doctor or a specialist, which is 2.5 times greater.⁵⁰

Compensation is of particular concern when considering that the average debt for medical school graduates continues to grow beyond their already significant levels. Over 85% of medical school graduates carry debt upon graduation. The median debt for graduates of public medical schools is \$119,000, while the figure escalates to \$150,000 for graduates of private medical schools. This figure has increased by more than 165% for public schools and 312% for private schools over the past twenty years.⁵¹

Additionally, studies point to professional and social isolation as deterrents for doctors serving in rural areas.⁵² The majority of medical schools in Ohio are in urban areas, meaning medical students must transition from life in an urban setting to life in a rural setting in order to serve that population. This adjustment is unattractive to many medical students. Given these cultural differences, it is not surprising that a majority of doctors choosing to practice in rural areas come from rural areas.⁵³

Ohio is home to six medical schools, including Ohio University in the heart of Appalachian Ohio. Efforts to recruit and retain these physicians in the region will have to address the factors that deter physicians from moving to rural areas.

Recommendations:

- **Increase the Number of Federally Qualified Health Centers –** Federally-qualified health centers receive federal support for service to

⁴⁸ Ricketts (2000)

⁴⁹ Woods et al (2006)

⁵⁰ Woods et al (2006)

⁵¹ Website of the American Medical Students Association - <http://www.amsa.org/meded/studentdebt.cfm>

⁵² Woods et al (2006)

⁵³ Woods et al (2006)

underserved populations, offering primary care to those who might not otherwise have access. This federal support helps health centers attract new doctors and also qualifies them for loan forgiveness programs that make relocation to rural areas with these centers financially attractive.

- **Establish Rural Medical Residency Programs** – Doctors generally tend to establish practice in the geographic area of their residency programs. Developing residency programs that enable doctors to serve part of their rotations in rural areas, as opposed to urban regions, offers an opportunity to develop a stable pipeline.
- **Develop an Incentive Program to Assist Rural Hospitals** – Rural hospitals lack the financial resources of their urban and suburban counterparts. A simple program offering financial support would allow them to compete with hospitals with more financial assets in attracting talented doctors through higher salaries.
- **Expand Existing Loan Forgiveness Initiatives for Service to Rural Areas** – Both the state of Ohio and the federal government offer scholarship and loan forgiveness programs for service to rural areas. Expanding programs such as the National Health Service Corps and the Ohio Physician Loan Repayment Program would offer financial incentives to physicians to consider rural areas.
- **Improve Marketing Efforts** – Rural areas offer important advantages often overlooked by physicians. Lower property values and safer communities make these regions ideal for raising families. Any policy that extends financial incentives to serve rural areas must also include efforts to improve awareness of the advantages to living in rural areas.
- **Improve Collaboration Between Urban Medical Education Centers and Rural Hospitals** – In Ohio, major medical education centers are generally in the state's urban areas. Rural hospitals should work with these centers to develop programs that will generate interest amongst medical students in serving in rural areas.

Technology

The United States boasts the most sophisticated health care technology in the world. Every year, remarkable advances in technology offer improvements in the effectiveness of treatments that ultimately lead to saved lives or a better quality of life for American patients. These advances also can improve the efficiency of care.

This technology is expensive to purchase, again placing rural health providers at a disadvantage to their urban counterparts. Lower financial assets make the acquisition of the newest health technology difficult or impossible for rural health providers, including hospitals largely dependent on federal funding. Urban hospitals with more resources are in a better position to purchase this equipment, creating a divide in the quality of care available in urban and rural areas.

This technology deficit is causing health centers in the region to miss out on opportunities for job expansion. Lack of access to technology draws many rural patients to urban areas for more complex procedures. These procedures offer higher compensation than simpler procedures, meaning rural health centers are missing out on financial opportunities that could help support a larger paid staff. Additionally, the purchase of new equipment can create jobs through the need for staff to operate them.

Of particular interest is the emerging field of Health Information Technology (HIT) or electronic recordkeeping. Studies suggest that widespread implementation of electronic recordkeeping could save health centers significant sums of money by improving efficiency and preventing mistakes.⁵⁴ This savings could be put towards the purchase of new equipment and additional staff.

The District must continue to gain better access to this technology. While federal and state efforts have brought the benefit of better technology to many of the region's health centers, the disparity in care must be addressed. With the news of a recent federal grant promising investments of \$25.2 million in health care networks and broadband access in the region, the purchase of updated equipment that can utilize this infrastructure is both timely and imperative.⁵⁵

In November 2007, the Federal Communications Commission announced funding for two telehealth networks that will support the development of technology in this region of Ohio. Under the Rural Health Care Pilot Project initiative, the FCC offers financial support for the development of a nationwide broadband network that will allow information to be more easily exchanged between health centers in America's rural areas. Two of these networks significantly impact the District:

⁵⁴ A study from the Rand Corporation, "Health Information Technology: Can HIT Lower Costs and Improve Quality," suggested savings approaching \$80 billion, while a study from the Center for Information Technology Leadership, "The Value of Computerized Provider Order Entry in Ambulatory Settings," projected savings of \$44 billion.

⁵⁵ Ohio Supercomputer Center press release, November 2007

- The Southern Ohio Healthcare Network (SOHCN) will receive \$13.9 million for the development of a network in Adams, Athens, Fayette, Gallia, Highland, Hocking, Jackson, Meigs, Morgan, Perry, Pike, Ross, Scioto, Vinton, and Washington counties.
- The Northeast Ohio Regional Health Information Organization will receive \$11.3 million to expand and upgrade an existing network offering connections in Ashland, Ashtabula, Carroll, Columbiana, Coshocton, Cuyahoga, Erie, Geauga, Holmes, Huron, Lake, Lorain, Mahoning, Medina, Portage, Sandusky, Seneca, Stark, Summit, Trumbull, Tuscarawas and Wayne counties.

Additional federal funding has recently been obtained for equipment upgrades in regional hospitals. The Knox Community Hospital Cancer Center and the Twin City Hospital (Dennison) received support for the purchase of new equipment under existing programs through the Department of Health and Human Services, while Genesis Hospital in Zanesville received support for the development of a telemedicine project with Nationwide Children's Hospital.

Many initiatives are underway without governmental support. Using its own capital, Licking Memorial Hospital has generated an electronic medical records system used by all doctors and health professionals within its network. The system offers instantaneous access to care and has on multiple occasions prevented the harmful mixing of prescription drugs in patients.

Proper development of technology does not end with the purchase of equipment. Use of this equipment must be coordinated with regional training efforts to ensure it is properly utilized and its capacity maximized.

Recommendations:

- **Offer Support for the Purchase of New Equipment** – Federal, state, and other resources should be pledged to health care providers for the purchase of new technology.
- **Develop Regional Coordination to Ensure Maximization of Resources** – New resources brought to the region should be shared and made available to as wide a spectrum of entities as possible. For example, usage of the new Southern Ohio Health Care Network must be maximized through coordination with regional health centers.
- **Ensure Health Care Regulations Reflect Evolving Technology Opportunities** – As technology changes, so should regulations dictating what government and private health care plans will support. Of particular concern are Medicare and Medicaid regulations with respect to coverage of new telemedicine opportunities.
- **Encourage Adoption of Health Information Technology** – For reasons ranging from costs to privacy concerns, the permeation of health information technology into rural areas has been slow. Federal and state

programs that encourage hospitals to purchase and implement this technology should be implemented. Financial incentives and patient protections should be included in any efforts.

- **Make Technology Advances Available to Rural Ohio** – As health technology continues to evolve, ensuring that rural hospitals and health centers with fewer resources have access to technological updates will help to make the region's hospitals more attractive and efficient. Initiatives that improve communication between industry and providers on this issue will enhance opportunity for all parties.
- **Standardize Electronic Health Records, Quality Reporting, and Medical Billing Forms Nationally** – While implementation of electronic medical records and health information technology allows for enhanced efficiency within one facility, creating systems that are compatible with others outside the facility better maximizes the potential of these systems. Congress and the federal government should work to generate policies that improve collaboration and a streamlined system of electronic medical record keeping.

Market Forces

Maximizing opportunities in the health care industry will be largely dependent on the ability of government and interested actors to manage the market forces of the health care industry. As discussed earlier in this paper, the demand for health services will continue to grow with the aging of the baby boomer population. However, properly channeling assets and policies to spur economic growth will require an investment in policy and other action that will ensure the industry continues to appear attractive to new investors.

No discussion of the health care industry would be complete without addressing the role of health insurance. While this paper will not explore health care reform in depth, it must be stated that the current system is wrought with inefficiencies that cause missed opportunities for actors in the system. Especially as the retirement wave of the baby boomers begins, maximizing the effectiveness of the American system of care is critical to ensuring that the medical profession of the District thrives.

There are actions that can be taken that do not require major policy shifts and ensure more efficient use of existing health care resources. Improving collaboration between different actors within the industry can improve the efficiency of the allocation of care by establishing simple lines of communication.

Genesis Hospital and Quality Care Partners are in the process of implementing a regional initiative to bring health care providers in the hospital's service area together to improve the regional coordination of care. By assessing the region's health care needs through a comprehensive perspective, the Genesis proposal can help to efficiently allocate the resources of all those involved in administering care to the region. These actions are designed to reduce health care costs, which, in turn, make the entire region more attractive for economic development.

A task requiring more aggressive policy investment is the stabilization of health insurance payments. Government health care plans and support programs are known for fluctuations in payments triggered by a variety of factors.⁵⁶ A lack of stability inhibits long-term planning and can act as a disincentive for medical professionals to enter certain fields. In rural areas, where higher percentages of residents utilize government programs, this disincentive is particularly harmful.

Additional initiatives to encourage an expansion of the health care industry through traditional outreach are also important. Working with regional entities designed to promote commerce in the region is critical to drawing new industry to the region.

⁵⁶ An important example is the Medicare physician payment issue. This payment system follows a fee schedule found by many doctor groups to be fundamentally flawed. As such, each year, Congress must vote to block scheduled cuts to the reimbursement rate. Recently, Congress overrode a Presidential veto to block a 10.6% cut to Medicare reimbursement rates scheduled to take effect July 1, 2008. There is no guarantee that Congress will block these cuts each year, creating a disincentive for doctors to pursue careers involving high levels of Medicare patients.

Recommendations:

- **Encourage Development of Regionalized Best Practice Initiatives** – Regional initiatives to maximize efficiencies create localized solutions to health care coordination. By including pharmacists, independently licensed practitioners, nurses, and physicians in horizontally integrated networks, chronic disease management can be addressed for the benefit of patient and provider alike. community health clinics, nursing homes and long-term care facilities must also be included in these conversations.
- **Stabilize Medicare and Medicaid Reimbursements** – Frequent debates on reimbursement policies at the federal and state level inhibit long-term planning initiatives and cause instability in health care networks. By solidifying rates and policies, government actors can contribute to long-term success for providers.
- **Encourage Collaboration Between Employers and Health Care Providers** – Communication between employers and health care providers helps to identify areas for improved efficiency in existing systems. Again, the Quality Care Partners example emphasizes the potential for improving the effectiveness of resource allocation in a region's system of health care.
- **Promote the Health Care Industry as a Regional Economic Contributor** – Creating a reputation for the health care industry as one wrought with opportunity for economic development will encourage new investment and exploration. However, this perception may not exist amongst the public at large. Encouraging entrepreneurship and small business development through education and promotion of the sector's opportunity through regional business education programs will help to generate new interest in the field.

Conclusion

The health care sector is unique in that its growth is guaranteed. The aging baby boomer population offers concrete evidence of a future increase in demand that will need to be met through expanding the availability of health care services.

There is, however, no equal guarantee that Ohio will be prepared to meet the demands of a rapidly growing industry. Ohio will struggle to fill vacancies in the health care industry without significant investment into an expansion of workforce training infrastructure or talent recruitment. A failure to meet this demand would represent a missed opportunity for economic growth in the region.

Additionally important is improving access to health technology for the region. The expense of current health technology makes its acquisition difficult in rural areas, leaving the region at a disadvantage and forfeiting economic opportunities. Advances must be made to improve this access.

Lastly, a variety of other market factors could be influenced through the implementation of policies and initiatives that can curb the inefficiencies of the industry. By encouraging collaboration within the industry and stabilizing payments known to fluctuate rapidly, the opportunities presented by the health care industry can be radically improved. Lower costs and better care will serve as an economic engine in attracting new non-health care related business.

The impetus for this work rests largely with federal and state actors. Much of the needed investment requires monetary resources that, because of the level of funding, depend on government. Channeling those resources to the proper entities will be a responsibility for government officials.

However, there also exists an important role for non-government actors. Community initiatives and regional collaboration can help to maximize efficiency in the system by improving communication. Additionally, private sector entities play a role, in terms of providing investors and entrepreneurial guidance.

Strategies for implementing these recommendations will evolve over time, as will the recommendations themselves. The relationships fostered by the RENEW initiative can serve as a gateway to this end.

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CONCLUSION

This report is intended to outline a blueprint for the economic revitalization for the 18th Congressional District of Ohio. The recommendations in the report are a reflection of the work of the four Working Groups under the guidance of their chairmen. These recommendations should serve as a path forward to all those interested in bringing economic success to our region.

The opportunities of broadband and technology are a part of a national trend toward a knowledge-based economy. As traditional sectors such as manufacturing continue to decline, employment in technology and computer-based industries has shown increased opportunity for growth. Critical to seizing on these opportunities is expanding access to broadband service throughout the region. Federal and state policies that support this expansion are critical, as are local initiatives that demonstrate aggregated demand for more service. Additionally, consumer awareness of broadband benefits and improving education rates in the region are critical to making the region more attractive to new employers.

Agriculture has been a consistent part of the economy of Ohio as it undergoes significant economic changes, but the rising role of renewable fuels and biomass in discussions about advanced energy also suggests the opportunity for significant growth. Federal and state mandates for the use of agricultural byproducts in energy production will expand opportunities for the agricultural sector to grow. Maximizing this potential requires carefully crafted legislation that will foster this growth without harm to the industry.

Similarly, the advanced energy industry at large shows significant opportunity for growth. The implementation of federal and state policies that both mandate and foster increased production of energy from advanced sources offer an opportunity for the District to grow. Such policies will create a more concrete demand that can drive the industry. Creating a workforce trained in the production of these advanced energies and creating policies that ease the financial burden of the necessary infrastructure investment will make the region attractive for new industries in this field.

The health care industry is certain to expand in Ohio. The aging of the baby boomer generation guarantees an increase in the demand for health services. Worker-training initiatives that prevent shortage of any health care profession are critical to maximizing the opportunities for job growth in the field. Attracting new physicians to the region, enhancing technology opportunities for health centers, and capturing market forces are also critical to this process.

Each of these sectors offers unique opportunities for expansion and growth in the District. With proper support from federal and state governments and participation from community actors, this potential can be maximized.

Common Threads

While each industry has unique challenges in its development, there are some common threads between the recommendations for each sector that can be helpful in implementing broader policies and initiatives for economic development.

In each instance, ensuring that a national demand exists for the particular industry is of the utmost importance. Mandates for renewable power and energy production ensure that there will be a demand for biomass, ethanol, and other advanced energy components, making the industry attractive for investment. The aging of the baby boomers creates a concrete demand that serves as impetus for the expansion of relevant workforce training programs. Similarly, improving consumer awareness of broadband opportunities creates a broader market for the expansion of broadband service.

Workforce training is also an issue in the expansion of each sector discussed in RENEW. The presence of a workforce skilled in a particular sector makes the possibility of the development of new industry far more likely and easily executed. Regional institutions of higher education and training programs are important to this development.

Investment in infrastructure is a critical component to economic development in each of the sectors discussed. Particularly in the instance of broadband and technology, deployment of broadband service is a costly, yet necessary, investment for future economic development. In the instance of advanced energy and agriculture, the production of equipment and facilities that produce advanced energy are critical building blocks for industry growth. The purchase of technology is also a component of the expansion of the health care industry.

Finally, enhancing awareness for consumers is also a key component of economic development in many of the sectors. In the case of broadband and advanced energy, improving consumer education of the potential benefits of the relevant products will enhance the likelihood of an expansion in those industries. A similar case can be made for ethanol.

It is also worth noting that each of these sectors impacts the others in some ways. An upgraded broadband and technology sector will attract new advanced energy industries, help farmers sell their products, and enhance distance learning opportunities for health care professionals. A stronger advanced energy sector can help to lessen energy costs for many of the region's industries. Finally, improved access to health care services creates a stronger, more productive workforce and can make regions more attractive to all types of industry.

Understanding these commonalities can help with the creation of broader policies and initiatives that can impact these sectors and others that might have opportunities to emerge in the district. Developing initiatives that will improve all of these aspects of economic development can permit even greater growth in the region.

The Way Forward, Revisited

The recommendations offered in this report provide a blueprint for future economic success in Ohio. As stated in the Introduction, this blueprint can and should change over time, as conditions and circumstances facing the region will undoubtedly change. Groups similar to the RENEW summit should continue to meet to keep the blueprint timely and up to date.

Additionally, implementation of the blueprint will require the participation and support of interested parties throughout the region and the state. No one person or group is responsible for the future of the region, nor can one entity implement the changes this paper prescribes. Collaboration between industry, educational institutions, and governmental officials will be crucial for our success. Steps to foster partnerships among these groups will more efficiently maximize the potential for vibrant economic growth throughout the region.

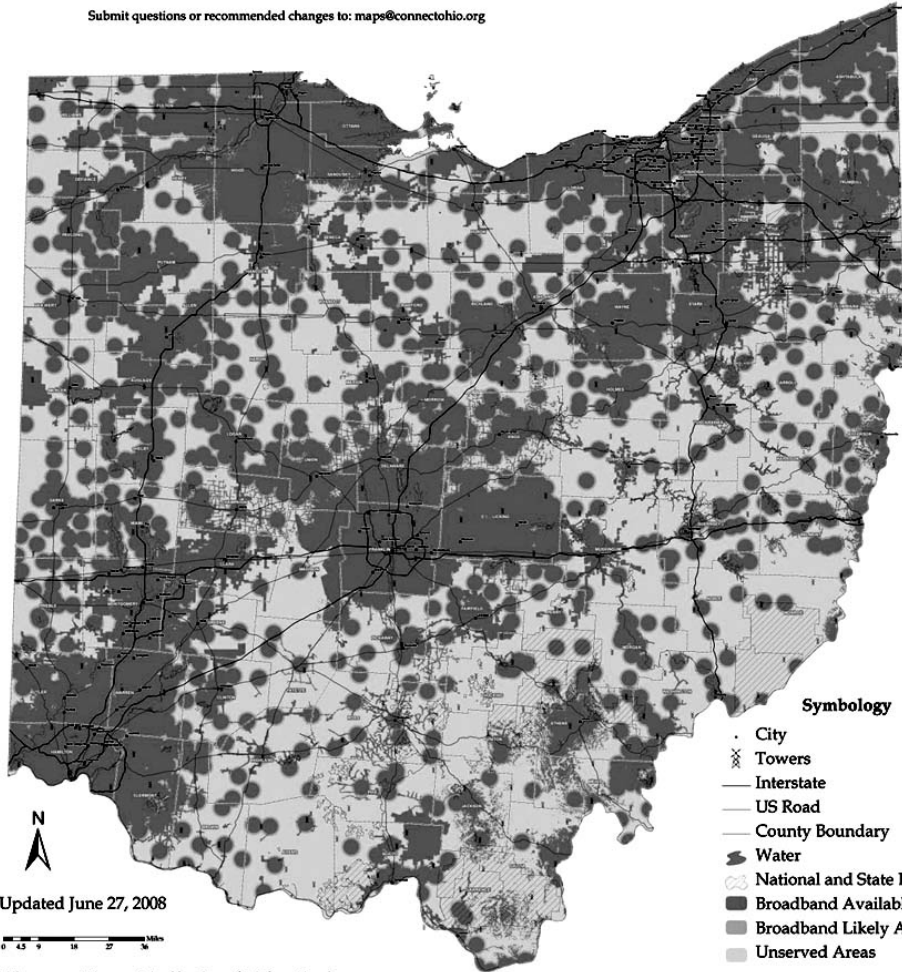
A brighter economic future for Ohio's 18th Congressional District is possible only with the continued persistence and interest of all those with a vision for economic opportunity in a region that has lost so much of it. Congressman Space is committed to maintaining the dialogue created by this report, and committed to move forward to help bring about economic success.

Appendix A

Broadband Service Inventory for the State of Ohio



Submit questions or recommended changes to: maps@connectohio.org



Symbology

- City
- ⌘ Towers
- Interstate
- US Road
- County Boundary
- Water
- National and State Lands
- Broadband Available
- Broadband Likely Available*
- Unserved Areas

Updated June 27, 2008

The representations contained herein are for informational purposes only. Best efforts are undertaken to insure the correctness and accuracy of this information. However, all warranties regarding the accuracy of this map and any representations or inferences derived therefrom are hereby expressly disclaimed. Connect Ohio and its partners neither assume nor accept any liability for the accuracy of these data. Those relying upon this information assume the risk of loss exclusively for any potential inaccuracy. All errors and omissions brought to the attention of Connect Ohio will be promptly corrected.

This map does not depict satellite broadband service.

*In these areas, there is a strong likelihood for broadband availability; however, technology limitations in select areas may limit service to some homes.

Connect Ohio has worked with broadband providers throughout the State to identify the gaps in broadband service - the first step in a statewide effort to "fill the gaps" for 100% broadband availability.

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