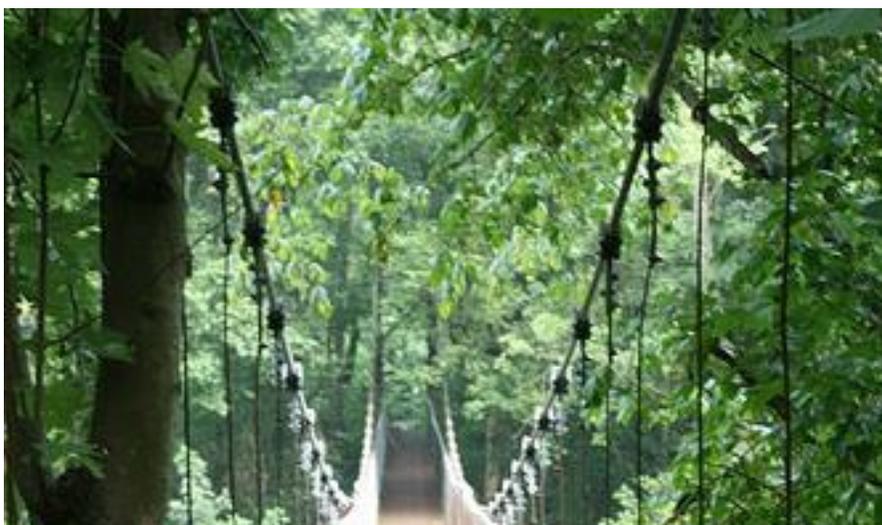
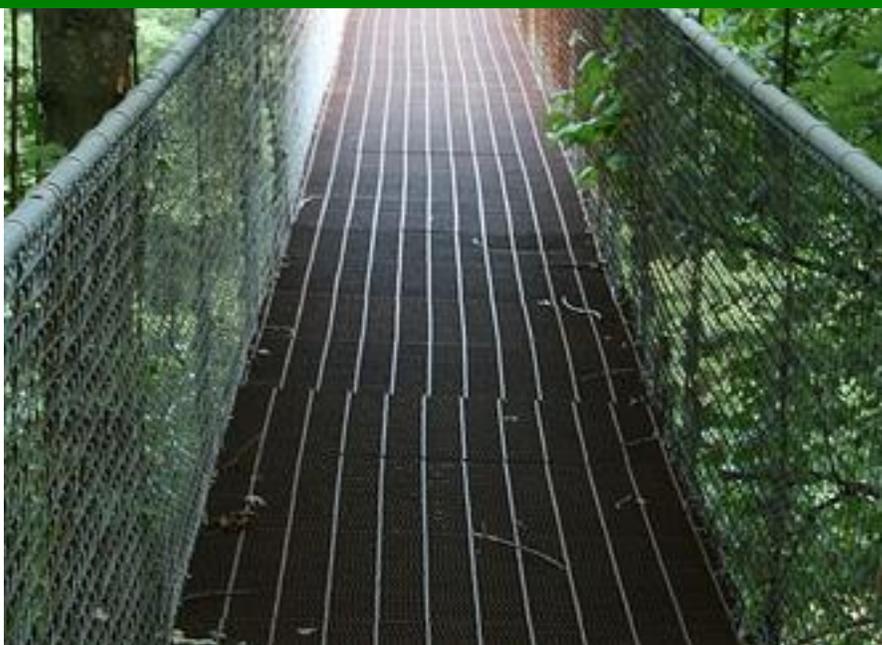


2009-2013



# Appalachia Tomorrow



## **Introduction**

The Commonwealth of Kentucky, under the administration of Governor Steven L. Beshear, submits its four-year development plan for the 54 county Appalachian Region in accordance with Section 5.3 of the Appalachian Regional Commission Code.

The plan was created with the input of various stakeholders throughout the region, Hazard, KY, native and Lieutenant Governor, Daniel Mongiardo, and of course Governor Beshear, his staff, and multiple employees of the administration. Representatives from the Area Development Districts were key resources for several of the themes in the plan, as were groups and organizations such as the East Kentucky Leadership Foundation, and the Appalachian Universities and Colleges Presidents' Association. Multiple resources were referenced for data and historical context, including the State Data Center, the U.S. Census Bureau, Beshear administration plans and related resources, noted Appalachian historians, and at least one former Governor.

Understanding the daunting, complex history of combating economic distress in Appalachian KY counties, Governor Beshear commissioned a four-year plan that was not a simple recitation of the strengths and weaknesses in the region, or another recitation of the latest economic data showing the region's comparable deficits. Instead, along with a discussion of strengths and weaknesses, and a presentation of demographic data, the plan will serve as the opening conversation piece about what the Beshear administration thinks have been shortcomings of previous investment strategies, an acknowledgement of legitimate growth and connectedness in the region over the last four decades, and what foundations from the past have been laid firmly enough to develop the region sustainably for the long term. The plan will also lay out three centerpieces of Governor Beshear's statewide initiatives: Early Childhood Education, Adventure Tourism, and future Energy Technology-related industries that hold the possibility of transforming the economy of Appalachian KY for generations to come.

Governor Beshear's regional development plan is designed to complement his administration's overall objectives for the entire Commonwealth, focus them on opportunities within Appalachia, and put Appalachian Kentucky on a path to realize the four general goals of the Appalachian Regional Commission. The Governor recognizes the goals of the ARC to be universally essential in the development of economically distressed communities.

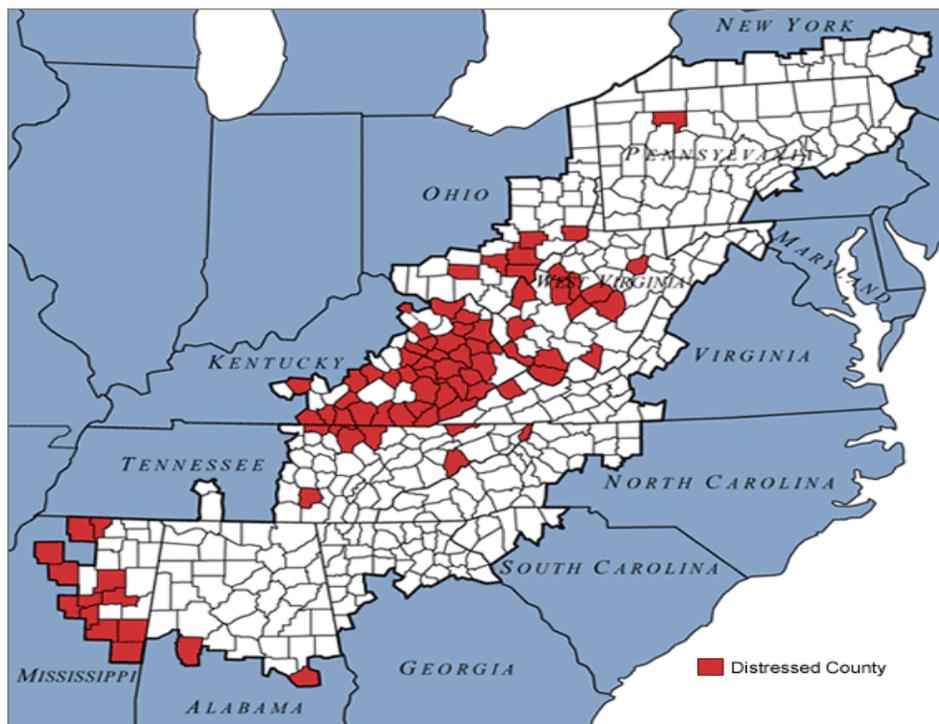
Matt Sawyers

State Alternate

## APPALACHIA TOMORROW

Since the founding of the Appalachian Regional Commission in 1965, Appalachian communities and their people have inarguably narrowed the educational attainment and poverty gaps with the rest of the nation. Federal, state and local programs have combined with private investments and periods of dramatic economic growth in the U.S. to improve infrastructure, educational systems, access to healthcare, and career opportunities in a place once known as “a region apart.” Kentucky’s 54 ARC counties have made significant progress in these areas as well. Appalachian Kentucky residents have better roads, better schools, greater access to public drinking water, increasing access to decent healthcare, and more diverse job opportunities than ever before. Each resident provided access to clean, safe public drinking water for the first time is an achievement. Every young person whose advanced educational attainment level (comparative to previous generations) has multiplied his or her options for a career of his or her choice is another individual more likely to be contented, productive, and live longer. Yet, Appalachian Kentuckians, in many ways, have not achieved the same type of dramatic rise toward parity with the rest of the nation as other regions in Appalachia. The number of distressed ARC counties in Kentucky for fiscal year 2009 is 38 out of 54. Projections for 2010 are for that number to increase to 40.

*ARC-Designated Distressed Counties, Fiscal Year 2009*



*Prepared by the Appalachian Regional Commission*

*Data Sources:  
Unemployment data: U.S. Department of Labor, Bureau of Labor Statistics, 2004–2006  
Income data: U.S. Department of Commerce, Bureau of Economic Analysis, 2005  
Poverty data: U.S. Department of Commerce, Bureau of the Census, 2000*

This four-year development plan, offered by the administration of Governor Steven L. Beshear, will detail several persistent social and economic disparities manifest throughout Appalachian Kentucky. It will attempt to describe and reconcile major

dichotomies in the ways that Appalachian Kentuckians and their political representatives think about and address those disparities. The development plan, along with annual strategy statements, will serve as a navigational roadmap for the Governor’s investment agenda within the Commonwealth’s 54 ARC counties, and how those strategies and investments dovetail into the broader goals the Governor has outlined for all Kentuckians. Lastly, this document will describe, in detail, three specific agenda items the Beshear administration believes can provide the cornerstone to successful, sustainable, long-term Appalachian development: Early Childhood Development, Adventure Tourism, and opportunities resulting from an anticipated Energy Technology Revolution.

**Uneven Progress**

Clearly, significant progress has been made in bringing more Appalachian Kentuckians out of poverty, increasing high school graduation rates, increasing college and post-secondary school enrollment, and decreasing infant mortality rates (a significant disparity when the ARC was formed).

In 1980, the poverty rate in Kentucky’s ARC region was 17.6% compared to 14.1% through all of Appalachia, and 12.4% nationwide, 141.9% of the U.S. average. After the 2000 census, the number in ARC Kentucky was 15.8%, against 13.6% across the broader region, 12.4% nationally, resulting in a poverty rate 127.8% of the national average <sup>1</sup>.

<b>1980</b>	Persons for Whom Poverty Status is Determined	Persons Below Poverty Level	Poverty Rate	Percent of U.S. Average
<b>United States</b>	220,845,766	27,392,580	12.4%	100.0%
<b>Appalachian Region</b>	20,145,630	2,847,042	14.1%	113.9%
<b>Kentucky</b>	3,559,034	626,240	17.6%	141.9%
<b>2000</b>				
<b>U.S.</b>	272,882,232	33,899,812	12.4%	100.0%
<b>Appalachian Region</b>	22,212,416	3,030,896	13.6%	110.2%
<b>Kentucky</b>	3,927,047	621,096	15.8%	127.8%

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<sup>1</sup> [www.arc.gov](http://www.arc.gov).

It is worth noting that despite an increase in population (however slight, which will be discussed later), Kentucky’s ARC region witnessed a slight drop in the total number of persons living in poverty. As a percentage of the regional and national averages, Kentucky’s Appalachian poverty statistics made relative improvements.

A similar story of incremental success can be told with a look at ARC data comparing high school and college graduation rates after the 1980 and 2000 census results. A significantly larger number of people in Appalachian Kentucky held high school and college diplomas at the end of the 1990s. In the “New Economy” and “New Appalachia,” Governor Paul Patton’s administration referenced in the 2000 Appalachian Development Plan<sup>2</sup>, the educational attainment level of a state’s working population becomes all that more important when competing for economic development opportunities. With as much progress made in the two decades prior to the new millennium, however, Appalachian Kentuckians still lagged behind the region and nation in high school completion rates, and significantly behind national averages in college graduation rates.

<b>1980</b>	Population 25+	Percent Completed High School	Percent Completed College	HS Completion % U.S. Average	College Completion, % U.S. Average
<b>United States</b>	132,835,687	66.5%	16.2%	100.0%	100.0%
<b>Appalachian Region</b>	1,365,592	57.3%	11.2%	86.2%	69.0%
<b>Appalachian Kentucky</b>	2,086,692	53.1%	11.1%	79.9%	68.3%
<b>2000</b>					
<b>United States</b>	182,211,639	80.4%	24.4%	100.0%	100.0%
<b>Appalachian Region</b>	15,294,680	76.8%	17.7%	95.5%	72.7%
<b>Appalachian Kentucky</b>	2,646,397	74.1%	17.1%	92.2%	70.2%

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<sup>2</sup> “Pursuing the Potential of Appalachian Kentucky.” November, 2000.

It will be interesting to see what type of progress has been made this decade when new census results are researched, sometime around the time of Kentucky's next four-year gubernatorial term. Currently, a snapshot of some arbitrary data sets are available that provide more up-to-date estimates than the last census research. The portrait painted by demographic data new and old craft a similar tale for the residents of Appalachian Kentucky; in historical comparative context, sheer numbers depict a region closing the gap with the rest of the nation in several respects, but the undeniable fact remains that Appalachian Kentucky metaphorically treads water somewhere behind the rest of Appalachia, and even further behind the U.S. as a whole.

Despite clear movement in the right direction, the 25 poorest counties in terms of median household income in Kentucky are in the ARC region; a staggering 47 of the 50 (out of 120) counties with the lowest median household income levels are Appalachian counties.<sup>3</sup> The Commonwealth as a whole ranks 47<sup>th</sup> in the most recent three year average of state median household income levels.<sup>4</sup> In a 2007 report, the Kentucky Institute of Medicine ranked all 120 counties, across 25 variables, according to the health status of the residents relative to the other counties. All 10 of the "Least Healthy Counties" are Appalachian.<sup>5</sup> In a state behind the national average in terms of household income, Appalachian counties lag behind the rest of the state. In comparison to other counties in Kentucky, Appalachian residents face growing health disparities.

The challenge for any administration is to determine what, if anything, can be learned by previous efforts at development in distressed communities, then how to expand upon those successes, avoid repeating mistakes, at the same time augmenting an administration's own agenda for a state, and more narrowly defined regions within. This unique challenge is made even more daunting by the global economic downturn facing the state and nation at the end of the first decade of the 21st Century.

Governor Beshear first and foremost recognizes several guiding principles that frame decision-making regarding the Commonwealth's 54 ARC counties:

- ✚ Appalachian Kentucky is a unique, complex region with a historically significant culture, bountiful local assets, multiple long-term challenges, and diverse economic development opportunities.

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<sup>3</sup> U.S. Census Bureau. Small Area Income and Poverty Estimates, 2007.

<sup>4</sup> **Source:** U.S. Census Bureau, Current Population Survey, 2006 to 2008 Annual Social and Economic Supplements.

<sup>5</sup> Kentucky Institute of Medicine. *The Health of Kentucky: A County Assessment*. Lexington, KY, 2007. <http://www.kyiom.org/healthky2007a.pdf>.

- ✚ The relative success of any new initiatives and the Commonwealth in general are directly linked with the relative success of such initiatives within Appalachian Kentucky communities.
- ✚ Public and private investments have made advancements in many areas possible in Appalachian Kentucky, and will drive future advancement as the region moves increasingly toward economic and social parity with the rest of the nation.
- ✚ The most productive and enduring efforts for community advancement are those originating at the local level.<sup>6</sup>

### **Building on a Foundation**

Across the decades, each administration has implemented its own initiatives aimed at addressing disparities within distressed communities in Appalachia. The previous Governor, Ernie Fletcher, created a pilot program, Prescription for Innovation, in 6 ARC counties designed to ultimately increase rural broadband access. The Fletcher administration also began supporting, with ARC funds, a burgeoning Adventure Tourism industry in Appalachian Kentucky. Governor Paul Patton (1995-2003), a former Judge Executive from Pike County, implemented numerous innovative strategies pursuing economic parity for his fellow Appalachians. Among the concerted efforts made during the Patton administration were the development of regional industrial parks in coal-producing areas, the expansion and influence of the Kentucky Appalachian Commission, and the Community Development Initiative beginning in Hindman and Jenkins. At least two statewide Patton initiatives also had a tremendous, lasting impact on ARC counties: the Governor's 2020 water infrastructure plan and the reformation of the state community college system into the KCTCS, the Kentucky Community and Technical College System. The 2020 plan made possible innovative planning and funding efforts to substantially increase the number of Kentuckians with access to public drinking water. The post-secondary education reforms gave the community college system the independence it needed to provide better community-based services and workforce training opportunities.

It is notable that right now in Appalachian Kentucky, major stakeholders are organizing themselves in ways that will allow the voices of many to present their own ideas to political leaders and each other regarding what future investments need to be made to move the region forward at a more hastened pace than the past. In June of 2008, the East Kentucky Leadership Foundation presented Governor Beshear a detailed document of priorities for the region titled "The East Kentucky Initiative." The draft document was the result of foundation members presenting workshops open to the public at the annual East Kentucky Leadership Conference in the areas of Economic Development/New Age Technology, Education, Health,

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<sup>6</sup> Final bullet reprinted from "Pursuing the Potential of Appalachian Kentucky."

Eastern Kentucky presence and voice within every state administration, and the Environment.<sup>7</sup> Many recommendations provided in the initiative are either being implemented by or are being considered by the administration. Some outstanding ideas have been put on hold due to the economic crisis.

An important development stemming from the working groups that formed the East Kentucky Initiative is the foundation of a coordinated effort between college and university presidents in the region determined to address the first Educational priority, as defined by the Initiative, to “Build a shared vision among all regional stakeholders from preschool level through college.” The guiding principles of the presidents’ desire to improve the region as whole include bringing a *collaborative* focus to the areas of education, healthcare, and economic development. Collaboration and sharing of resources toward a common goal by such an influential group is an encouraging development for the future of Appalachian Kentucky.

Similarly, there are nearly too many non-profit organizations, community action groups, faith-based organizations and other concerned stakeholders furthering community development in Appalachia to name. These entities, and each individual affiliated with them, are assets to their communities. These are the types of organizations that policy makers can learn from, work with and build upon. These are the types of people that will be sparkplugs within distressed communities.

From the cornerstones laid by the initiatives of previous administrations to the positive impact regional stakeholders have every day within their own communities, the Beshear administration has inherited foundations from which a more sustainable, developed region can be built. The most perplexing of questions to reach a conclusion then becomes, with all of the worthwhile investments made in the region over the years, and increasing activism at the local level, why will there be as many distressed counties (40 out of 54) in 2010 as there were at the beginning of this decade (40 out of 49)?<sup>8</sup>

A discussion to that question can be had by historians. The intent of this document is to focus on what direction investments and development initiatives should proceed in the future. Governors have little luxury to work in absolutes or to ever say never. That is why although Governor Beshear understands more targeted investments need to be made in developing human capital and taking advantage of local resources, the administration must also keep its options flexible enough to take advantage of opportunities when they arise.

If Appalachian Kentucky is ever to move into parity with the rest of the Commonwealth, the rest of the Appalachian Region, the rest of the U.S., the expectations must be to equip a workforce with skills that are translatable to high-

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<sup>7</sup> East Kentucky Initiative. Memo to Governor Beshear. June 20, 2008.

<sup>8</sup> Appalachian Regional Commission, 2009.

paying careers, not hourly wages in manufacturing plants of corporations without roots in the region. But an administration must also be pragmatic enough to position itself to bring jobs to distressed communities in Appalachia whenever possible given the high unemployment and poverty rates across the region. It is this dichotomy that every administration must reconcile. Other seemingly incompatible concepts that need reconciled include:

- ✚ Continued investment in large scale infrastructure projects vs. smaller investments designed to generate more civic involvement.
- ✚ Concentrated investment in distressed communities vs. expanding opportunities in growth areas with the hopes success might spread and backslides may be avoided.
- ✚ Recognition of the ultimate importance of locally grown initiatives vs. exporting centralized concepts that have had proven positive impacts.

The conclusion, ultimately, is that all of the above concepts have merit and must be pursued when unique opportunities present themselves.

What an administration can and should do is to promote more heavily, investments in areas that it believes will have the longest-lasting developmental impact. The Beshear administration recognizes that the most effective investments will be made within the framework already provided by the stated goals of the Appalachian Regional Commission.<sup>9</sup>

1. Increase job opportunities and per capita income in Appalachia to reach parity with the nation.
2. Strengthen the capacity of the people of Appalachia to compete in the global economy.
3. Develop and improve Appalachia's infrastructure to make the Region economically competitive.
4. Build the Appalachian Development Highway System to reduce Appalachia's isolation.

Governor Beshear's administration is committed to continuing to build infrastructure in Appalachian communities. Several million dollars in American Recovery and Reinvestment Act stimulus dollars at this time have been offered to Appalachian communities for water/sewer infrastructure improvements. Governor Beshear also intends to continue to make major federal and state grant and loan programs available for infrastructure development in Appalachia, including ARC funds. In comparison to neighboring states, a greater percentage of Kentuckians have access to clean, public drinking water. Unfortunately, too many of the

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<sup>9</sup> Moving Appalachia Forward: ARC Strategic Plan 2005-2010.  
<http://www.arc.gov/index.do?nodeId=2296>

residents without live in Appalachia, in part due to more sparsely populated service areas and cost prohibitive construction due to the geography.

Governor Beshear also recognizes the importance of the completion of the Appalachian Development Highway system to reduce isolation and increase economic opportunities in Appalachia. As of late September, 2008, 426.3 ADHS miles were eligible for federal funding in Kentucky, 395.2 of those miles had been completed.<sup>10</sup> Kentucky has completed a higher percentage of eligible ADHS miles than any other Appalachian state. The Commonwealth remains committed to completing and improving transportation infrastructure of all types in Appalachia, providing needed access to some of the nation’s most distressed areas.

Although continued investment in transportation and infrastructure are essential to develop competitive economies in Appalachia, Governor Beshear recognizes that new strategies and opportunities must be pursued if Appalachian Kentucky is ever to reach parity with the rest of the nation. That is why such a large portion of the development plan is devoted to an elaborate description of the three main initiatives the Governor feels will have the greatest impact on sustainable development in Appalachia: Early Childhood Development, Adventure Tourism, and a changing Energy industry. Each of these three primary initiatives, if successful, will directly contribute to realizing the first two general goals of the ARC (listed previously).

**Demographic Data**

To provide an overview of some of the challenges facing Appalachian development in the 54 ARC counties in Kentucky, following are recent data regarding population estimates, educational attainment-related statistics, and health-related information. Much of the more recent estimates compared to 2000 census data, are divided for Kentucky by Area Development Districts. Kentucky’s 54 ARC counties are represented by 9 Area Development Districts.

Geographic Area	July 1, 2008	Census 2000	Population Change Number	Population Change Percent
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<sup>10</sup> [ARC | Status of the Appalachian Development Highway System as of September 30, 2008](#)

United States	304,059,724	281,421,906	22,637,818	8%
Kentucky	4,269,245	4,041,769	227,476	5.6%
<b>ADD</b>	<b>July 1, 2007</b>	<b>Census 2000</b>	<b>Population Change Number</b>	<b>Population Change Percent</b>
Barren River	273,879	255,225	18,654	7.3%
Big Sandy	156,407	160,532	-4,125	-2.6%
Bluegrass	744,937	686,003	58,934	8.6%
Buffalo Trace	56,546	55,229	1,317	2.4%
Cumberland Valley	242,276	238,270	4,006	1.7%
FIVCO	136,636	135,849	787	0.6%
Gateway	80,379	76,237	4,142	5.4%
Kentucky River	117,032	120,656	-3,624	-3%
Lake Cumberland	201,151	193,452	7,699	4%

**Population Estimates<sup>11</sup>** – Provided for each Area Development District with ARC counties, Kentucky itself, and the nation.

It should be noted that the two Area Development Districts with the highest percentage positive change in estimated population between the 2000 Census and 2007, Bluegrass ADD and Barren River, have more counties outside the ARC designation than within. The two ADDs with a net loss in population, Big Sandy and Kentucky River, represent the most interior Appalachian counties within the Kentucky portion of the region. They also represent the counties most dependent on coal mining and related income.

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<sup>11</sup> Info provided by Kentucky State Data Center. U of L.



**Educational Attainment for the Population Over Age 25<sup>12</sup>**

Geographical Area	High School Degree or Higher (Number)	(Percent)	College Degree or Higher (Number)	(Percent)
United States	167,218,926	84.5	54,333,511	27.5
Kentucky	2,275,783	80.1	568,138	20.0
Barren River	144,359	77.7	30,861	16.6
Lake Cumberland	99,309	72.1	17,794	12.9
Cumberland Valley	155,396	69.1	27,486	12.2
Kentucky River	54,246	65.3	8,692	10.5
Big Sandy	73,086	66.8	12,883	11.8
Bluegrass	414,337	84	137,028	27.8
Buffalo Trace and Gateway <sup>13</sup>	62,918	69.7	10,981	12.2
FIVCO	74,593	78.7	12,816	13.5

Again, all Area Development Districts with primarily Appalachian counties fall short of state and national averages in educational attainment data.

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<sup>12</sup> 2007 American Community Survey – 1 yr estimates. Compiled by State Data Center.

<sup>13</sup> Statistician could not compute individual data for these two ADDs, so they were combined.

### **Recent Poverty Data**<sup>14</sup>

<b>Geographical Area</b>	<b>Past 12 Months Income Below Poverty Level (Number)</b>	<b>(Percent)</b>
United States	38,052,247	13.0
Kentucky	714,080	17.3
Barren River	50,570	18.7
Lake Cumberland	41,305	21.2
Cumberland Valley	68,607	29.8
Kentucky River	36,177	31.0
Big Sandy	38,268	24.6
Bluegrass	121,313	16.8
Buffalo Trace and Gateway	32,208	24.4
FIVCO	20,007	15.3

### **Health Data**

\*The following statistics are taken from the Kentucky Behavioral Risk Factor Surveillance System Report published by the Kentucky Department for Public Health in the Cabinet for Health and Family Services. The latest report by Area Development District is from 2002.

### **Lack of Health Care Coverage**

National Median	14.1%
Total Kentucky	18.2%
Barren River	21.8%
Lake Cumberland	25%
Cumberland Valley	26%
Kentucky River	27.1%
Big Sandy	30%
Bluegrass	16.2%
Buffalo Trace	28.5%
Gateway	19.4%
FIVCO	24%

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<sup>14</sup> 2007 American Community Survey – 1 year estimates. Compiled by the State Data Center.

General Health is Fair or Poor

National Median	14.8%
Total Kentucky	23.8%
Barren River	25.7%
Lake Cumberland	37.3%
Cumberland Valley	35.2%
Kentucky River	37.9%
Big Sandy	37.7%
Bluegrass	21.2%
Buffalo Trace	29.9%
Gateway	27.5%
FIVCO	31.4%

Frequent Mental Distress

National Median	8.7%
Total Kentucky	18.7%
Barren River	19.9%
Lake Cumberland	23.8%
Cumberland Valley	21.6%
Kentucky River	23.9%
Big Sandy	29.3%
Bluegrass	15.5%
Buffalo Trace	17.8%
Gateway	17.7%
FIVCO	21.3%

### No Professional Dental Cleaning in Past Year

National Median	31.1
Total Kentucky	29.8
Barren River	29.4
Lake Cumberland	36.7
Cumberland Valley	38.2
Kentucky River	41.6
Big Sandy	31.9
Bluegrass	24.8
Buffalo Trace	47.9
Gateway	34.0
FIVCO	37.0

As is so often noted, Appalachian communities typically have higher incidences of poverty, lower levels of educational attainment, and poorer overall health than the rest of the nation. These general statements are even more exaggerated when looking at data regarding Kentucky's 54 ARC counties. Even though the data presented is not comprehensive, it provides anecdotal evidence of long-existing challenges facing Appalachia. Poverty, low-education, and poor health are the three primary components of a cycle that continues to hold rural Appalachian Kentucky communities in economic distress. Any effective comprehensive development strategy must pursue funding for and development initiatives targeting these three components simultaneously. Both the goals of the ARC and Governor Beshear's development programs targeting the region are compatible with such efforts.

### **Closing**

The second half of the development plan will precisely detail what Early Childhood Development, Adventure Tourism, and new Energy technologies are and what initiatives and investments in those areas can mean for the future development of Appalachian Kentucky. The document up to this point has been written to provide an update of where Kentucky's 54 ARC counties stand in comparison to the rest of the state, the rest of the Appalachian region, and the rest of the nation in several critical measurements. The assessments are not comprehensive with respect to every component Governor Beshear's administration must address and be concerned with involving disparities in distressed areas, particularly Appalachia. It

is important to note that Appalachian Kentucky continues to battle substance abuse problems, a lack of safe, affordable housing, and an economy too dependent on transfer payments. These challenges, and more, greatly affect the strength of the workforce and the potential for long-term development in Appalachian Kentucky in a negative way.

Governor Beshear is committed to setting the goals that will ultimately elevate the standard of living and improve economic opportunities for all Kentuckians, and then pursuing them. The Beshear administration has already proven its dedication to moving Appalachian development forward and strengthening distressed and rural communities through programs it has already encouraged and funded. The Governor has continued to support the Recovery Kentucky program that provides recovery and rehabilitation assistance, ultimately hope, for individuals in Appalachian counties battling substance abuse. The Governor has openly embraced continued research and funding for substance abuse issues by the ARC. These actions hold positive ramifications, not just for the workforce, but for the social fabric of struggling communities. Investments have been made in low-income home rehabilitation, alternative energy research, and with the help of ARC funds, children's literacy programs, and even an Appalachian Health Disparities Summit hosted by the Kentucky River Area Development District.

In a research paper submitted to the Partnership Board for the Cabinet for Economic Development in January 2008, the Center for Business and Economic Research at the University of Kentucky proclaimed that "the slow growth in income in Kentucky is almost exclusively due to the slow growth in income in rural areas of Kentucky."<sup>15</sup>The authors suggest that Kentucky is behind in the stock of knowledge and skill of the workforce. Previously mentioned data measurements are evidence that Appalachian Kentucky is indeed behind in many ways, and the Center's research suggests that in order for Kentucky itself to become more competitive, rural Kentucky, specifically Appalachian Kentucky, must develop a more competitive workforce and economy.

The nation is entering a period of transition. A deep recession is crippling job opportunities for people all across America. The poorest communities are always among the hardest hit in tough times. This is no exception. With unemployment reaching near 20% in many Appalachian Kentucky counties, the future seems cloudy. At the same time, however, the federal government is making unprecedented domestic investments in the hope that they will positively impact the entire nation for generations to come.

Appalachian Kentucky is also entering a turbulent period of transition. Strong economies nationally have already moved away from old manufacturing bases.

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<sup>15</sup> Economic Growth in Kentucky: Why Does Kentucky Lag Behind the Rest of the South? CBER. University of KY. January 2008.

Proposed carbon cap legislation potentially threatens growth opportunities in the coal industry. At the same time, carbon capture and sequestration technologies offer hope for a cleaner burning domestic fuel that can continue to positively impact the Appalachian economy decades into the future.

Governor Beshear plans on continuing investments in critical infrastructure and transportation needs to promote growth in Appalachia. The administration also recognizes, however, that progress in Appalachian Kentucky has been uneven and a willingness to rethink public investment is necessary to move Appalachia into parity with the rest of the nation. Now is the time for fresh ideas, not a time to be afraid of failure. Now is the time to embrace a renewed commitment to development that is based on local assets and designed to enhance long-term sustainability. For these reasons, Governor Beshear is putting forward a development plan for Appalachia that is pragmatic enough to recognize that there are some strong cornerstones in place that need to be built upon. The Beshear plan also recognizes that the strongest, most innovative ideas, the most durable ones will necessarily come from the residents of Appalachia themselves. The Governor recognizes the hardest development work is yet to be done. Leaders must emerge in distressed communities who encourage civic participation. Residents must cast aside corruption and support locally based opportunities.

The objective of the administration is the same as it has been for previous administrations, to leverage areas in which progress has been made to promote future successes that will help bring Appalachian Kentucky into parity with the rest of the nation. The vision is unique. Governor Beshear will encourage the development of the human capital of the region through Early Childhood Development initiatives; the growth of a sustainable industry based on the beautiful natural assets in the region, Adventure Tourism; and exciting economic opportunities in new Energy technologies with the belief investments in these areas will serve as the catalyst that sparks an economic engine driving Kentucky's Appalachian counties out of economic distress.

### **Program Management**

*Methods used to measure the relative financial resources of project applications:*

Kentucky's ARC program is managed within the Department for Local Government (DLG), which is responsible for approval of all Kentucky counties' annual budgets and processing of required annual financial reports from all Kentucky counties, cities and special districts. DLG also manages the Coal Severance Tax Accounts for all coal-producing and coal-impact counties in the state, both single county and multi-county accounts, and has approval authority for most projects submitted for use in the coal counties. The DLG involvement in local government financial accountability establishes a well-informed knowledge of the financial resources of the majority of ARC eligible applicants.

*Methods used to ensure an equitable allocation of (non-ARC) state contributions for projects to its Appalachian area.*

DLG is part of the General Government Cabinet and reports to the Office of the Governor. Also included in this cabinet is the Governor's Office for Policy Management, including the State Budget Office. GOPM works with all State agencies in budget planning to ensure equitable resources are provided to all areas of the State including the Appalachian region.

The nine Appalachian Area Development Districts prepare Regional Comprehensive Economic Development Strategies, coordinate regional transportation planning, coordinate workforce development planning programs, etc., that work to ensure that equitable state contributions are available for needed economic development progress within the combined Appalachian region.

## **STATE POLICIES**

### **A. Project Review and Selection Process**

Kentucky utilizes the following system for evaluation and selection of projects for ARC funding assistance.

#### **1. Pre-Application Solicitation Methods**

Pre-applications are solicited via a mailing from the ARC Program Manager to the nine ARC area development district (ADD) executive directors. Pre-applications are directed to be mailed to the ARC Program Manager. The boards of directors of the ADDs are composed of all county judges/executive, and mayors of 1<sup>st</sup> through 3<sup>rd</sup> class cities of these Appalachian regions. Staff from the ADDs communicate this solicitation to all local agencies including not-for-profit groups within the region. The ARC Program Manager also maintains a list of individuals and agencies such as consultant groups, higher education contacts, etc. requesting notification of the ARC pre-application process.

#### **2. Project Pre-Application Screening Process**

All pre-applications are screened initially by the ARC Program Manager and staff to determine if they are eligible for funding consideration. This screening process determines the following:

- a. Application completeness, accuracy and project feasibility
- b. Eligibility under the ARC Code and Guidelines
- c. Project consistency with ARC strategic goals and state strategies

#### **3. Project Evaluation/Prioritization**

Pre-applications determined to be complete, eligible and feasible are then evaluated and prioritized by an evaluation committee consisting of the following:

- State ARC Alternate, Committee Chair
- Commissioner, Governor's Office Department for Local Government (DLG)

Note: if Commissioner is designated Alternate, Deputy Commissioner of DLG will be designated a member

- DLG Office of Federal Grants Executive Director
- ARC Program Manager

The following criteria are utilized in evaluation of ARC projects for prioritization:

- a. Degree of Need – Projects that address a severe and immediate problem, such as imminent health threat or loss of jobs, or that capitalize on job creation will be given higher priority than those that do not.
- b. Project Scope and Cost Effectiveness – The number of beneficiaries to be served by the project and the cost per person or household served will be considered in funding level determination.
- c. Degree of Distress – Projects that benefit communities in ARC designated distressed counties will be given priority consideration in the evaluation process.
- d. Degree of Non-ARC Funding Commitment – Projects are evaluated individually as to the degree of non-ARC funding commitments and those projects that contain commitments of other federal and/or state/local funds that reduce the ARC share below the maximum level will receive higher prioritization than those that do not.
- e. Project Readiness – The degree of readiness of a project for implementation if funded (i.e., other funding sources committed, firm cost figures, preliminary or detailed engineering completed, and administrative/organizational responsibilities defined) will be considered in project prioritization.

Prioritization recommendations will be completed for two levels. Priority I projects are those which rank highest in the prioritization process and appear to have non-ARC funding committed. Priority II projects are those which rank high enough in funding priority but which lack complete non-ARC funding commitments or complete project readiness. Priority II projects could be elevated to Priority I if other funds are deemed to have potential to be committed and other Priority I projects fail to achieve approval.

Priority I applicants are asked to submit full applications for submission to ARC for approval. Kentucky's nine Area Development Districts (ADDs) within the Appalachian Region assist local communities and applicants with application preparation and project development throughout the application selection process.

## **B. State Matching Requirements and Assistance Limits**

ARC participation costs will be limited to 50 percent of project costs, with the following exceptions:

- 1) For projects located in ARC designated distressed counties, the maximum grant will be 80 percent of project costs.
- 2) For projects located in ARC designated at-risk counties, the maximum grant will be 70 percent of project costs.
- 3) ARC assistance for multi-county projects in which at least half the counties are distressed may be increased to as much as 80 percent of project costs; if at least one, but less than half, of the counties are distressed, ARC assistance is limited to the higher of 50 percent or the average percentage applicable to the counties in the project.
- 4) ARC assistance for housing site development projects under Section 207 of the ARDA is limited to 10 percent of project costs.

In addition to meeting the requirements of the ARDA of 1965, all projects for which approval is requested under the Area Development Program must be supported by a demonstration that they will contribute to achievement of one or more of the Commission's strategic goals, except that the state may request, in accordance with Section 7.3 of the Code, approval of a project or projects without such supporting demonstration to take advantage of special development opportunities or to respond to emergency economic distress.

## **C. Project Monitoring and Progress Evaluation**

All ARC projects will be monitored by staff on a semiannual basis to assess progress in meeting scheduled milestones and to identify and resolve any problems that may have occurred in project performance. On-site inspections may be done at midpoint and at project completion to ensure compliance with approved project scope. Interim monitoring will usually be done by telephone. These monitoring reports will be incorporated into a computerized project management system to generate semiannual project status reports on all ARC funded projects.

## **D. Project Cost Under run Policy**

When project cost under runs occur, ARC funds will generally be de-obligated and made available for other eligible projects. A request for proportional reduction will be given consideration in projects with under runs.

# Early Childhood Development

## Kentucky's Current Early Childhood Development Programs

The future strength of the Commonwealth of Kentucky is contingent upon the healthy development of our children. The first three years of a child's life are vital. A recent study that tracked participants from infancy to age 21 found that: 1) Children who received quality early childhood care outperformed their peers who did not receive the quality early childhood care on academic and cognitive tests, 2) Children who received quality early childhood care were more likely to attend college and obtain and keep higher skill level jobs, 3) These children were less prone to teenage pregnancy, and 4) Children who received quality early childhood care were less likely to be enrolled in a special education curriculum.<sup>16</sup> It is the vision of the Department of Education, Early Childhood Development Division that "all children in Kentucky are healthy and safe, possess the foundation that will enable school and personal success, and live in strong families that are supported and strengthened within their communities."<sup>17</sup> In order to accomplish this mission, Kentucky has taken many steps to develop and strengthen Early Childhood Development and Early Childhood Education programs in this state.

The first step towards this end was the creation of the Governor's Early Childhood Task Force by Governor Patton in March 1999. In October 2000, the Early Childhood Development Authority voted to adopt the Early Childhood Development Task Force's report, entitled KIDS NOW Kentucky Invests in Developing Success, as the Authority's plan. This plan is a twenty year comprehensive strategy, recognizing that the key to future economic development is integrally related to quality early childhood education and development. The four chief goals of the KIDS NOW report are: Assuring Maternal and Child Health, Supporting Families, Enhancing Early Care and Education, and Establishing the Support Structure. This comprehensive approach to early childhood development encompasses all of the elements of a successful initiative: health care, family assistance, education, and community involvement.<sup>18</sup>

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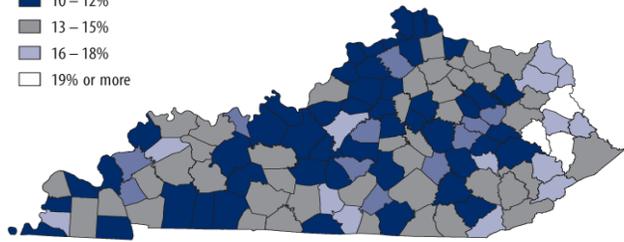
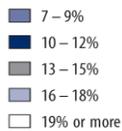
<sup>16</sup> Abecedarian Project, November 1999. Frank Porter Graham Childhood Development Center, Chapel Hill, North Carolina.

<sup>17</sup> "Early Childhood Development," Kentucky Department of Education: <http://education.ky.gov/KDE/Instructional+Resources/Early+Childhood+Development/> Dec. 3, 2008.

<sup>18</sup> KIDS NOW Kentucky Invests in Developing Success, A Report from the Governor's Early Childhood

Task Force: November 1999. Frankfort, Kentucky.

Percent of Babies Born Preterm, 2004-2006



Source: Kentucky Cabinet for Health and Family Services, processed by Kentucky Population Research at the University of Louisville Urban Studies Institute.

Assuring Maternal and Child Health is vitally important to the Commonwealth of Kentucky, especially its Appalachian regions. Healthy babies are more likely to grow into healthy adults. Low birth-weight babies are at an increased risk for future health problems and learning problems. “Children born at a low birthweight face increased risk for serious

health problems as newborns; poor educational outcomes; long-term physical, behavioral, and developmental disabilities; and even death. They are also 26 times more likely than those born at normal weights to die within the first year of life.”<sup>19</sup> Kentucky has made slight progress since enacting the KIDS NOW plan, moving our rank to 39<sup>th</sup> from 41<sup>st</sup> nationally in the percent of low birth weight babies born. This small increase in rankings, however, is not enough. Kentucky still had a 9.1% low birth weight rate in 2005, and that had increased from the five years prior. In 2001, the rate was 8.3%.

Preterm births are on the rise nationally, and in Kentucky more than 15% of babies are born prematurely. As shown in the chart above, the highest rates of preterm babies born in the state of Kentucky were in ARC counties. In Lawrence, Floyd and Magoffin counties, the pre-term birth rates exceed 19%. Furthermore, 11 of the 14 counties with pre-term birth rates between 16 and 18% were ARC counties.<sup>20</sup> Preterm babies are more likely to suffer from learning and behavioral problems than full-term babies. Two factors that play a central role in preterm births is lack of insurance, which leads to a lack of prenatal care, and smoking during pregnancy. The national average of women who smoke during pregnancy is estimated at 17%.<sup>21</sup> In Kentucky, this rate is much higher. Statewide in 2000, 23.4% of pregnant women smoked.<sup>22</sup> In Appalachian Kentucky, the rates get even higher. For example, in

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<sup>19</sup> “2008 Kentucky KIDS COUNT Data Book,” *Low and Very Low Birthweight Babies*, p. 66.

[http://www.kyyouth.org/KIDS\\_COUNT/documents/08pub\\_CountyDatabook\\_lowbirthweight.pdf](http://www.kyyouth.org/KIDS_COUNT/documents/08pub_CountyDatabook_lowbirthweight.pdf)

<sup>20</sup> “2008 Kentucky KIDS COUNT Data Book,” *Preterm Births*, p. 68.

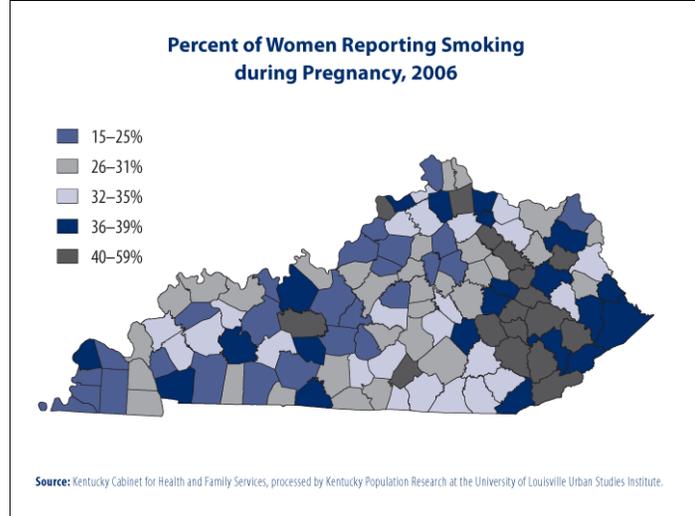
[http://www.kyyouth.org/KIDS\\_COUNT/documents/08pub\\_CountyDatabook\\_preterm.pdf](http://www.kyyouth.org/KIDS_COUNT/documents/08pub_CountyDatabook_preterm.pdf)

<sup>21</sup> “Report Urges States to Tackle Preterm Baby Crisis,” Lauren Neergaard, AP Medical Writer. Lexington Herald-Leader: November 12, 2008.

<sup>22</sup> Kentucky Annual Tobacco Control Plan, 2002-2003: Smoking During Pregnancy, 1996-2000.

<http://www.mc.uky.edu/tobaccopolicy/KentuckyDataReports/Pregnancy/SDPpdf/Little%20Sandy.pdf>

2002, 45.3% of pregnant women in Owsley County smoked. In Breathitt, Carter, and Wayne counties, the percentages were 34.5, 30.8, and 32.1% respectively.<sup>23</sup> By viewing the graphic, it obvious that while Kentucky's overall rate of women smoking during pregnancy is a problem, in Appalachia, it is an epidemic. Smoking during pregnancy and breathing secondhand smoke during pregnancy causes preterm births, low birth weight babies and higher rates of infant mortality.



Kentucky has a high but improving rate of teen pregnancy, or births to females between the ages of 15 and 19. In 2001, there were 52 births per 1,000 females between the ages of 15 and 19. However, by 2005 this number had dropped to 49 births per 1,000 females in this age range.<sup>24</sup> In Appalachian Kentucky, the birth rate to teenage mothers is also dropping. However, the teen birth rate to mothers age 15 to 19 is still disproportionately high. While Kentucky's Appalachian region population makes up 28% of the state's total population, in 2004-2006, 33% of all births to teens in Kentucky occurred in the Appalachian region.<sup>25</sup>

However, Kentucky's rate of pregnant women receiving prenatal care is much higher than the national average, with 85% of Kentucky women receiving prenatal care compared to 75% nationally. Kentucky has made great strides in improving our infant mortality rates and we are now at par with the national average, at seven deaths per 1,000 live births. This improvement can be attributed to a higher percentage of pregnant women receiving prenatal and neonatal care. Further, Kentucky's immunization rate of babies 19-35 months is 80%, which is very close to the national average of 81%.<sup>26</sup>

In order to ensure that Kentucky babies are born healthy, several strategies were developed by the task force. One of these strategies was to provide preconceptional

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<sup>23</sup> "Tobacco Use and Policy Fact Sheets by County," Kentucky Center for Smoke-Free Policy. <http://www.mc.uky.edu/TobaccoPolicy/KCSP/>

<sup>24</sup> "Kids Count Data Center," The Annie E. Casey Foundation: <http://www.kidscount.org/datacenter/>. December 9, 2008.

<sup>25</sup> "2008 Kentucky KIDS COUNT Data Book," *Teen Births*, p. 71. [http://www.kyyouth.org/KIDS\\_COUNT/documents/08pub\\_CountyDatabook\\_teenbirths.pdf](http://www.kyyouth.org/KIDS_COUNT/documents/08pub_CountyDatabook_teenbirths.pdf).

<sup>26</sup> Kentucky Institute of Medicine. *The Health of Kentucky: A County Assessment*. Lexington, KY, 2007. <http://www.kyiom.org/healthky2007a.pdf>.

and prenatal vitamins to local health departments and develop a statewide public awareness campaign. This strategy has been implemented by the Healthy Babies Campaign in Kentucky and the results are telling, as Kentucky's infant mortality rate is now at the national average.<sup>27</sup> In spite of this, Kentucky was given a failing grade of 'F' by the March of Dimes on our Premature Birth Report Card. In response to this, Kentucky lawmakers have formed a Healthy Babies Caucus to reduce the number of premature births in Kentucky and ensure that Kentucky mothers and babies are healthier.<sup>28</sup> The Kentucky Legislature also invested \$3 Million in the Folic Acid/Healthy Babies Campaign to help fund education, counseling, and folic acid supplementation in the health departments throughout our state.<sup>29</sup> Other strategies developed by the task force to ensure that babies are born healthy include providing regular screenings, encouraging women of child-bearing age to get regular health screenings, and prevention of tobacco, drug, and alcohol use prior to and after conception.

The KIDS NOW plan for Assuring Maternal and Child Health is devoted to ensuring the following: babies and families have a supportive environment at home, parents and caregivers know where they can go to obtain help and that children's basic physical and health needs are met. In order to achieve these goals, Kentucky is working on many strategies, including: heightening awareness of the Women, Infants and Children (WIC) program, increasing new parents knowledge about the birth process and early development, and giving new babies comprehensive health and developmental screenings/examinations. The Early Childhood Development Division is also intent upon ensuring that babies identified in the screenings as high-risk or as having problems receive follow-up evaluations and that all children receive regular developmental and health screenings.

The second part of Kentucky's KIDS NOW plan emphasizes Supporting Families. Many families have a difficult transition to parenthood. The challenges are exacerbated however, when the families live in poverty, have low education levels, are single parent households, or experience unemployment.<sup>30</sup>

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<sup>27</sup> KIDS NOW Kentucky Invests in Developing Success, A Report from the Governor's Early Childhood

Task Force: November 1999. Frankfort, Kentucky.

<sup>28</sup> State Lawmakers Form Caucus to Promote Healthy Babies, Lexington Herald-Leader: [http://polwatchers.typepad.com/pol\\_watchers/2008/11/state-lawmakers-form-caucus-to-promote-healthy-babies.html](http://polwatchers.typepad.com/pol_watchers/2008/11/state-lawmakers-form-caucus-to-promote-healthy-babies.html) November 12, 2008.

<sup>29</sup> Center for Disease Control and Prevention, *Folic Acid Local Campaigns*. January 24, 2007. <http://www.cdc.gov/ncbddd/Folicacid/campaigns.htm>

<sup>30</sup> KIDS NOW Kentucky Invests in Developing Success, A Report from the Governor's Early Childhood

In 2007, 29% of Kentucky's children under the age of five lived in poverty, ranking Kentucky 44<sup>th</sup> nationally in this category.<sup>31</sup> However, only 24% of children under 18 in Kentucky were living in poverty in 2007.<sup>32</sup> Thus, a disproportionate number of younger children are living in poverty. In the Appalachian region of Kentucky, the percentage of all children living in poverty is 34%, or 89,972 children. According to 2008 Kentucky KIDS COUNT Data Book, "child poverty levels increased in all but seventeen counties [from 2000 to 2005], increasing by more than 10 percentage points in McCreary, Martin, and Nicholas counties. The number of counties with one quarter or more of children living in poverty also increased over the five-year period, from 51 in 2000 to 67 in 2005."<sup>33</sup>

33% of Kentucky children live in single parent homes. In 2006, 15% of Kentucky children lived in homes where the head of the household was a high school dropout. A parents' lack of education is directly tied to children living in poverty and only 26% of Kentucky children lived in a home where the head of the household had a bachelor's degree or higher. With the vast majority of Kentucky's children living in homes where the head of household has not finished college, our children are in danger of continuing this cycle of poverty, low education levels, and unemployment. Finally, Kentucky ranks 45<sup>th</sup> in the nation for the percentage of children that live in homes where no parent has full-time, year-round employment, with a percentage of 37%.<sup>34</sup> It is obvious from these numbers that there are many children whose parents are struggling with extra burdens in addition to raising a family. Kentucky has to help and support them in order to break this cycle and so that Kentucky children can achieve more.

In order to help these struggling families, the KIDS NOW plan focuses on ensuring that families have access to the proper resources to promote a higher standard of living. This strategy includes developing and supporting local family literacy

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Task Force: November 1999. Frankfort, Kentucky.

<sup>31</sup> "Kids Count Data Center," The Annie E. Casey Foundation: <http://datacenter.kidscount.org/data/acrossstates/Rankings.aspx?ind=49>, May 19, 2009.

<sup>32</sup> "Kids Count Data Center," The Annie E. Casey Foundation: <http://datacenter.kidscount.org/data/acrossstates/Rankings.aspx?ind=43>, May 19, 2009.

<sup>33</sup> "2008 Kentucky KIDS COUNT Data Book," *Children Living in Poverty*, p. 8. [http://www.kyyouth.org/KIDS\\_COUNT/documents/08pub\\_CountyDatabook\\_childpov.pdf](http://www.kyyouth.org/KIDS_COUNT/documents/08pub_CountyDatabook_childpov.pdf)

<sup>34</sup> "Kids Count Data Center," The Annie E. Casey Foundation: <http://www.kidscount.org/datacenter/>. December 9, 2008.

programs, book give-away programs, and increasing child support collections. The KIDS NOW plan also intends that all parents have the information and support that they need to provide the best start for their children in the home. To achieve this, Kentucky is working to implement a family education curriculum in high schools. Kentucky is also striving to offer parenting and family issues courses for teenagers in community settings, offer a continuum of parenting classes, and raise public awareness on the importance of early childhood issues and the importance of these issues. In order to ensure that all parents receive this community support, Kentucky is working to develop a network of agencies and trained professionals that would conduct in-home visits for children with special health care needs, develop new models for home visitation programs for at-risk parents, and encourage employers to adopt family-friendly policies.

A 1999 RAND study concluded that every \$1 spent on early childhood education programs saves \$7 in remedial education, welfare, and incarceration costs down the road. The Governor's Early Childhood Task Force recognized the importance of these programs and made Enhancing Early Care and Education a tenet of its KIDS NOW plan. The task force recognized that Kentucky needs to work to increase the compensation of childcare staff and also improve quality, availability, and affordability of high-quality childcare for children under three.<sup>35</sup> Currently, an estimated \$400 Million in State and Federal funds go to early childhood development in Kentucky. Further, the Kentucky Department of Education estimates that 89% of all at-risk four year olds are served by either state funded pre-school or federal Head Start programs.<sup>36</sup> With all of this money and so many of the population served, our children should be advancing rapidly. However, Kentucky has not made notable advancements, economically or otherwise. In 2007, 32% of Kentucky fourth-graders scored below the basic reading level and 21% scored below the basic math level on the National Assessment of Educational Progress. While we are serving such a large portion of the at-risk four-year-old population, Kentucky still lags behind the national average of children enrolled in nursery school, preschool, or kindergarten. The national average for three and four-year-olds enrolled in nursery school, preschool, or kindergarten is 46% and for three through five-year-olds, 58% are enrolled. In Kentucky, the rates are 41% and 55% respectively.<sup>37</sup>

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<sup>35</sup> KIDS NOW Kentucky Invests in Developing Success, A Report from the Governor's Early Childhood

Task Force: November 1999. Frankfort, Kentucky.

<sup>36</sup> "Strategic Plan Worksheet," Bill Buchanon, Early Childhood Development, Department of Education: November 20, 2008. Frankfort, Kentucky.

<sup>37</sup> "Kids Count Data Center," The Annie E. Casey Foundation: <http://www.kidscount.org/datacenter/>. December 9, 2008.

## Benefits of Early Childhood Development

Nationally, 19.8% of all children five years old and under fall below the federal poverty line.<sup>38</sup> In Kentucky, the percent of children of the same age below the poverty line increases to 29%.<sup>39</sup> In Appalachian Kentucky, however, those numbers skyrocket. For example, in the Kentucky River Area Development District, which includes Letcher, Knott, Perry, Leslie, Breathitt, Owsley, Lee, and Wolfe counties, the percent of children under five that live in poverty is 41.1%. In the Big Sandy Area Development District, encompassing Johnson, Martin, Magoffin, Floyd, and Pike counties, the poverty rate for children under five is 40.5%.<sup>40</sup> In addition to the suffering that comes along with poverty, “poor children grow up into adults who are more likely to engage in crime, use illegal drugs, abuse alcohol, neglect and abuse their children, and suffer from poor physical health and a variety of mental illnesses. They are also less likely to be gainfully employed and, thus, less likely to contribute to the growth of our economy.”<sup>41</sup> Quality early childhood development programs can combat some of the long-term effects of poverty in Appalachian Kentucky.

Many long-term benefits to children participating in high-quality early childhood development programs have been shown:

- higher scores on math and reading achievement tests;
- greater language abilities;
- being better prepared to enter elementary school;
- more likely to pursue secondary education;
- less grade retention;
- less need for special education and other remedial coursework;
- lower dropout rates;
- higher high school graduation rates;
- higher levels of school advancement;
- improved nutrition;
- better access to health care services;

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<sup>38</sup>Lynch, Robert G. Exceptional Returns, Economic, Fiscal, and Social Benefits of Investment in Early Childhood Development, Economic Policy Institute: Washington, D.C., 2004.

<sup>39</sup> “ Kids Count Data Center,” The Annie E. Casey Foundation: <http://www.kidscount.org/datacenter/> . December 9, 2008.

<sup>40</sup> Kentucky State Data Center, based on 2000 census.

<sup>41</sup> Lynch, Robert G. Exceptional Returns, Economic, Fiscal, and Social Benefits of Investment in Early Childhood Development, Economic Policy Institute: Washington, D.C., 2004.

- higher rates of immunizations;
- better health;
- experience less abuse and neglect;
- less likely to be teenage parents;
- more likely to have higher employment rates as adults;
- higher earnings as adults;
- greater self-sufficiency as adults;
- lower welfare dependency;
- lower rates of drug use;
- showing less-frequent and less-severe delinquent behavior;
- engaging in fewer criminal acts both as juveniles and adults;
- fewer interactions with the criminal justice system; and
- lower incarceration rates.

Parents of children who participate in high-quality early childhood development programs benefit as well. For example, mothers of children in these programs:

- have fewer additional births;
- have better nutrition and smoke less during pregnancy;
- are less likely to abuse or neglect their children;
- complete more years of schooling;
- have higher high-school graduation rates;
- are more likely to be employed;
- have higher earnings;
- engage in fewer criminal acts;
- have lower drug and alcohol abuse; and
- are less likely to use welfare.

<b>Unhealthiest Kentucky Counties</b>	
<b>County</b>	<b>Rank</b>
Owsley	111
Powell	112
Hart	113
Knott	114
Lee	115
McCreary	116
Perry	117
Harlan	118
Clay	119
Wolfe	120

An investment in any type of government project may be justified if the benefit-cost ratio exceeds 1-to-1. In an analysis of four widely renowned early childhood development pilot programs, Perry Preschool, Prenatal/Early Infancy, Abecedarian, and Chicago Child-Parent, the benefit-cost ratios varied from 3.78-to-1 to 8.74-to-1. Furthermore, it is noted that the costs of these programs were fully accounted for, while the benefits that came from these programs were understated.

In addition to the numerous positive effects of quality early childhood development programs on children and their families, there are also beneficial budgetary effects for governments. Education expenses are lower. Participants in early childhood development programs fail fewer grades and are less likely to require enrollment in special education programs. Costs linked to criminal justice are lower for participants in early childhood development programs because participants and their families are less likely to perpetrate criminal acts or be delinquents. Tax revenues increase because taxable incomes for participants and their parents increase. Finally, because the participants and their families are less likely to participate in the welfare system, governmental expenditures in public welfare benefits also decrease.

The general public also benefits from investments in high-quality early childhood development programs. “In fact, 19.8% of the estimated total benefits found for the Prenatal/Early Infancy program, 59% for the Chicago Child-Parent Centers program, and 81.4% for the Perry Preschool program went to groups aside from the government.” Examples of this include lower crime rates, productivity gains for the future workforce, more people paying into Social Security, and higher GDP levels.<sup>42</sup>

How Early Childhood Development Can Help Appalachian Kentucky

Appalachian Kentucky continues to lag behind the rest of our state and the rest of our nation. Thirty-eight out of the 54 ARC counties are still labeled economically distressed. In order to progress, our population must be healthy and well educated. Economic development and education are the keys to advancement.

<b>Healthiest Kentucky Counties</b>	
<b>County</b>	<b>Rank</b>
Oldham	1
Boone	2
Jessamine	3

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<sup>42</sup> Lynch, Robert G. Exceptional Returns, Economic, Fiscal, and Social Benefits of Investment in Early Childhood Development, Economic Policy Institute: Washington, D.C., 2004.

Anderson	4
Woodford	5
Fayette	6
Spencer	7
Daviess	8
Calloway	9
Clark	10
<i>Kentucky Institute of Medicine</i>	

Health, education, and economic status are interrelated. Healthy children achieve higher education attainment, which leads to prosperity for future generations. All of Kentucky is lagging behind the nation, but our ARC counties are in far worse shape. Development and implementation of quality early childhood development programs statewide can help reduce our problems in health, education, and economic status.

In a county assessment published by the Kentucky Institute of Medicine, the ten healthiest and least healthy counties were named. Of the 10 least healthy counties in Kentucky, every single county was an Appalachian county: Owsley, Powell, Hart, Knott, Lee, McCreary, Perry, Harlan, Clay, and Wolfe. Only one of the 10 healthiest counties in Kentucky, Clark County, was an ARC county. Kentucky is above the national average in the prevalence of adult and youth smokers, obesity, percent of adults missing six or more teeth, drug arrests, and occupational fatalities. Our disability rate, cancer death rate, total mortality rate, and premature death rate are higher than the national average. Finally, Kentucky exceeds the national average in prevalence of diabetes and cardiovascular disease in our population.

Healthy individuals have higher productivity, economic viability, and quality of life in the Appalachian region and all of Kentucky. A viable means to improve the health of people in the Appalachian area is through quality early childhood development programs.<sup>43</sup> Because of enhanced health and educational opportunities, participants in quality early childhood programs are more likely to receive preventative health screenings, dental examinations, and better overall health care. Preventative screening and health care lead to better health status as children and as adults.<sup>44</sup>

“Better educated individuals are more likely to have access to preventative healthcare and to engage in behaviors that benefit their health.” However, in 2005, Kentucky ranked 48<sup>th</sup> out of 50, for the percentage of the population over the age of 25 who have obtained a high school diploma or the equivalent. Kentucky also ranked 47<sup>th</sup> in the percentage of the population with a bachelor’s degree.<sup>45</sup>

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<sup>43</sup> Kentucky Institute of Medicine. *The Health of Kentucky: A County Assessment*. Lexington, KY, 2007. <<http://www.kyiom.org/healthky2007a.pdf>>

<sup>44</sup> “The Effectiveness of Early Childhood Development Programs,” *Am J Prev Med* 2003;24(3S) 2003 American Journal of Preventative Medicine, published by Elsevier.

<sup>45</sup> Kentucky Institute of Medicine. *The Health of Kentucky: A County Assessment*. Lexington, KY, 2007. <<http://www.kyiom.org/healthky2007a.pdf>>

Appalachian Kentucky falls well below the national average of 83.9% of adults ages 25-43 completing high school. However, Kentucky's ARC counties are improving in high school graduation rates: 74.9% of the population ages 25-34 completed high school compared with 62.2% of adults between the ages of 45 and 59, and 38.1% for adults 60 and older. As for college graduation rates, the national average for adults ages 25-34 is 27.5%, while in Appalachian Kentucky, the rate is only 10.6%. Appalachian Kentucky's college graduation rate and high school graduation rates are the lowest of all ARC sub-regions.<sup>46</sup> Kentucky, and especially Appalachian Kentucky, must do better.

### Strengths, Weaknesses, Opportunities and Threats for Kentucky's Early Childhood Development

The Commonwealth of Kentucky is committed to improving our early childhood programs and providing our children with the best start possible. Because Kentucky was trailing national averages in most measures of childhood well-being, Governor Paul Patton made programs for our youngest citizens a focus of his administration in the late 1990's. His Early Childhood Task Force articulated desired outcomes and developed strategies to improve our early childhood development system. It built on programs offered by Head Start and the public preschool system, established as a part of the Kentucky Education Reform Act of 1990, which made free early learning experiences available to all three and four year olds with identified disabilities and to all four year olds whose family income is less than 150% of the poverty level. In its report "Enhancing Early Childhood Development and Education" the task force set as a goal that early child care and education programs work together with school programs within communities.

A heavy emphasis was placed on improving the quality of early child care programs. Kentucky developed a four-star rating system for child care facilities. STARS for KIDS NOW evaluates programs based on the following criteria:

- staff/child ratios
- group size
- curriculum
- parent involvement
- training/education of staff
- regulatory compliance
- personnel practices

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<sup>46</sup> Source: 2000 Census Public Use Microdata Sample, PRB analysis. State Data Center, Louisville, KY.

Subsidy rates for such programs are tied in part to STARS for KIDS NOW rankings.

Over the years Kentucky has maintained its commitment to our early childhood programs. The Commonwealth invests approximately \$400 million of state and federal funds in early childhood initiatives each year.

Health initiatives are leading to steady improvements in measures, but the most recent publication of Kids Count still ranked Kentucky 41<sup>st</sup> for the overall well-being of our children, a ranking which has remained virtually the same since 2001-02. We have, however, seen small improvements in some factors which affect the well being of our children. Child support collections have increased. High School graduation rates are rising. There has been a decrease in teen birth rates. Unfortunately, in many instances where the state is making progress, the Appalachian region is still far behind. For example, across Kentucky teen births declined by more than 23% between 1992 and 2000 but in most Appalachian counties teen birthrates are still exceedingly high – ranging from 63 – 101 births per 1000 girls aged 15-19.

On the early education front, Kentucky has many good programs in place: Early Head Start, Head Start, public school pre-schools and many excellent private care providers. Approximately 89% of at-risk four year olds (those whose family income falls below 150% of the federal poverty level) take advantage of our voluntary federal and state funded programs. In school year 2006-2007 13,362 eligible four year olds attended the state-funded preschools and another 8,523 were enrolled in Head Start.

Budgetary shortfalls have precluded the expansion of early childhood programs in Kentucky. We also have not as yet made recommended legislative changes which would enhance the licensing requirements for early childcare providers. But perhaps our greatest weaknesses lie in the lack of coordination and collaboration among all the programs which serve young children and the virtual absence of articulation between early learning programs and our elementary schools.

### Governor Beshear's Early Childhood Development Policies

Ten years after Governor Patton first focused state attention on programs for young children, Governor Steve Beshear has made improving early childhood development and education a priority of his administration. Understanding the far reaching benefits of high quality early childhood learning experiences, his goal is to make them available to every child in Kentucky.

Budget shortfalls have forced Governor Beshear to temporarily place on hold the most ambitious of his plans, that of expanding access to publicly funded preschool programs to all three and four year olds whose family income is below 200% of the federal poverty level. The budget crisis has also delayed his plan to implement a

sliding-scale payment system for families above 200% of the federal poverty level to make high quality early learning programs more affordable for struggling families.

Even during this time of scarce fiscal resources, however, Governor Beshear is pushing for improvements in Kentucky's early childhood programs. In February 2009 he announced the formation of a new Task Force on Early Childhood Development and Education. Composed of 25 leaders drawn from both public and private program providers, higher education and the business community, the task force is co-chaired by the Secretary of the Cabinet for Health and Family Services and the Secretary of the Education and Workforce Development Cabinet. The Governor charged the group to "develop a system wherein every child can participate in a high quality program." Child care providers, health program leaders and early childhood educators have been challenged to see their efforts as part of a coordinated system which contributes to the success of each child. The task force will focus on the ambitious goals of "greater collaboration among providers of services to young children, quality at all levels from early childcare through kindergarten, agreement on what really constitutes school readiness, reliance on accepted early learning standards and assessments, and a structure which facilitates the development, funding coordination and oversight of early childhood development and education programs." In addition to the Head Start program centers and the state's preschool program, there are more than 2,105 childcare centers and 900 family childcare homes in Kentucky. The Governor believes that a unified effort among these providers on issues of policy and service delivery will help to prepare Kentucky's children for success in the 21<sup>st</sup> century.

In Kentucky we know that education is the key to economic advancement – particularly for low income students. Children who attend early childhood development programs are more likely to graduate from high school and college. Without an educated workforce, new business does not want to locate in Appalachian Kentucky. Higher educational attainment and higher earnings as adults are two benefits of quality early childhood development programs.

The 2000 poverty rate in Appalachian Kentucky far exceeds the poverty rate in the US and even Kentucky as a whole: Appalachian Kentucky's poverty rate is 24.4%, the US rate is 12.4%, and Kentucky's rate is 15.8%. Per capita market income for 2006 for the US was \$26,420, for Kentucky was \$20,721, but for Appalachian Kentucky was \$13,668. Unemployment rates in the US and Kentucky as a whole were close to even, being 5.5% and 5.7% respectively, however Appalachian Kentucky's unemployment rate was 7%. Over one-third of all transfer payments made to Kentuckians go to those living in ARC counties. Early childhood programs can help curb all of these systemic problems.<sup>47</sup>

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<sup>47</sup> ARC Regional Data and Research, "County Economic Status, Fiscal Year 2006: Kentucky".

Governor Beshear chose early childhood development as one of his focal points because he knows the importance of such an initiative. He sees early education as the foundation for higher education attainment, better health for Kentucky's citizens, and economic prosperity for our great state.

## Adventure Tourism

### Vision

"The vision is for eastern Kentucky to be recognized as one of the great destinations of the United States – with a celebration of Appalachian heritage and life; innovative and quality trail systems; world-class adventure recreation venues; authentic frontier culture and art amenities; a rich blend of retail, restaurants, accommodations and businesses supporting the tourism economy; and special event activities – all in a setting of rugged Appalachia that offers both active and passive recreation."<sup>48</sup>



### Kentucky's Current Adventure Tourism Programs

In order to advance Kentucky's economy and therefore the welfare of her people, we need to find new ways to utilize our strengths. One of Kentucky's greatest assets is the beautiful land, from lakes and rivers, to mountains and rolling farmland, Kentucky has scenery and activities to suit every outdoorsman's taste. Adventure tourism is a high-

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<sup>48</sup> "Kentucky Adventure Terrain: Eastern Kentucky Comprehensive Adventure Tourism Plan," Pros Consulting, LLC.

growth industry and growth relating to such tourism is primarily in the rural areas of the state, where economic development is needed the most. Some of Kentucky's most beautiful and appealing areas to adventure tourists are in ARC counties, more specifically the southeastern mountain region and the lakes of southern Kentucky. Kentucky, and especially southeastern Kentucky, is making great strides in developing adventure tourism programs. Nearly 10,000 ATV riders came to Harlan County between October 2004 and November 2005. In Knott County, a private landowner allowed the use of 43,000 acres of forest land and coal mining areas for horseback riding trails. After gaining permission to develop this land for adventure tourism use, Knott County Adventure Tourism hosted its first Ride-A-Thon in 2006. 600 people and 400 horses participated from states as far away as Florida and Mississippi. In addition, small businesses have sprung up offering guided tours, wagon rides, and riding lessons.<sup>49</sup> Almost two-thirds of Americans participate in some type of outdoor activity and in 2005; outdoor recreation was a \$33 Billion industry in the United States. Further, two-thirds of the US population is within a one-day drive of Kentucky. Though a few other states have already implemented adventure tourism programs, Kentucky has more to offer, especially for ATV riders, hikers, hunters, spelunkers and horseback riders, and is set to become the premier adventure tourism destination in the country.

In the past three years, Kentucky's tourism industry has increased almost 24% and has generated more than 6,000 new jobs. Tourism in Kentucky is now a \$10.1 Billion industry and employs 176,840 people. The *Kentucky Unbridled Spirit* brand is the uniform marketing campaign across the state and a recent study showed that our brand is more recognizable to people in contiguous states than their own state's brand.<sup>50</sup> To keep the brand of Kentucky unified, Adventure Tourism in the Commonwealth will use the *Kentucky Unbridled Adventure* Brand. This uniform signage system will be used statewide to help alert highway travelers of trail systems and other outdoor recreational activities. Further, the signage will be used on trails to keep users on the route and signal sudden changes in the trail.

The Kentucky Recreational Trails Authority was created in the previous administration and was governed by a 13 member board. Recent legislation has expanded this board to include more user groups and interested parties. The KRTA mission is "to enhance Kentucky's economy by expanding tourism opportunities for motorized and non-motorized off-road trail activities, including hiking, cycling, horseback riding, and off-highway vehicle riding." Governor Fletcher created this

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<sup>49</sup> "Horses, Elks, & ATVs" Knott County Adventure Park System, Knott County Adventure Park System, released October 20, 2006.

<sup>50</sup> Kentucky Tourism, Arts, and Heritage Cabinet Accomplishments, <http://commerce.ky.gov/facts/>, December 14, 2008.

authority because of the voiced demand by Kentuckians and visitors for a place to ride, hike, and participate in other outdoor recreational activities in the Commonwealth of Kentucky. Governor Beshear has realized the importance and the opportunities for economic growth surrounding trails and other types of adventure tourism and made it a main initiative for his administration.

Currently, many adventure tourism projects are receiving financial support through the Kentucky Flex-E Grant Program. The Flex-E Grant Program is funding Comprehensive Adventure Tourism Plans for economically distressed ARC counties. These short-term, small grants provide financial assistance for communities to implement the Comprehensive Adventure Tourism Plan for Eastern Kentucky. Many ARC counties are using these grants to develop master plans and do feasibility studies for their counties, such as Letcher, Perry, and Floyd Counties. In addition, Knott County Tourism Commission, Inc. received a grant to initiate a pilot program and network of assistance for entrepreneurs starting businesses relating to adventure tourism. In Harlan County, these funds are also going to purchase GPS mapping equipment and hand-held channel radios for safety.

The Comprehensive Adventure Tourism Plan for Eastern Kentucky, funded by ARC, was commissioned and created to develop a vision and recommended course of action for development of the adventure tourism industry in Appalachian Kentucky. The plan intends to aid economically distressed counties in Appalachian Kentucky in order to maximize the economic impact of the burgeoning adventure tourism industry in the area.

Though Kentucky chose not to use the suggested branding campaign, entitled "Adventure Terrain – Nature's Playground," many of the recommendations set forth by the plan have been taken to heart. For example, Kentucky's *Unbridled Adventure* slogan is a unified marketing campaign; many counties are working to develop a Master Plan in keeping with the Comprehensive Plan, and focusing on the core program markets (paddle sports, rock climbing and repelling, trail venues, lake sports, and wildlife viewing).<sup>51</sup>

Development of a statewide trail system is the current focus of the Adventure Tourism initiative. One of Governor Beshear's goals is that an approximately 2,000 mile contiguous multi-use trail system be in use from East to West Kentucky by 2010. In order to facilitate the development of such a trail system, the state has developed a *Kentucky Unbridled Adventure* website<sup>52</sup> to connect users with trails and activities and encourage users make suggestions for the statewide trail system.

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<sup>51</sup> "Kentucky Adventure Terrain: Eastern Kentucky Comprehensive Adventure Tourism Plan," Pros Consulting, LLC.

<sup>52</sup> <http://www.kentuckytourism.com/outdoors/>

The Cross Kentucky Trail Network is featured on the website and allows users to upload GPS data files representing a mapped trail that they wish to be included in the network. Also, the user can search for trails that suit his or her interests. The user may search by activity, including: equine, ATV, motorcycle, biking, hiking, or trail areas, and then can hone in on the area of the state that he or she is interested in and the interface shows corresponding trails.

Development of a statewide trail system and recreation centers in Kentucky, and especially Appalachian Kentucky, provides the state with opportunity for tremendous economic growth. Trails lead to economic development. Entrepreneurial citizens can develop related industries, such as a Barn and Breakfast, craft stores, guide services, or trail-side cafes. The development of a trail-system also allows Kentucky to capitalize on our abundant natural resources in a responsible manner, as we are not depleting a non-renewable source. The trail-system gives Kentucky the opportunity to grow in an environmentally conscious and green manner

Governor Beshear's administration is currently taking stock of public lands and existing trails, in order that the state-wide trail system takes advantage of what is already in place. All existing trails are being examined to determine the best use and ensure that the trails are employed in an environmentally sound and responsible manner. The Commonwealth is now working to develop a GIS map of the best possible route for a multi-use trail system across the state, while taking the available trails and lands into account. This map will identify which type of users, meaning ATV riders, horseback riders, hikers, etc... may use that particular portion of the trail and offer alternative routes to satisfy all users. In addition, the Commonwealth has contracted with Morehead State University to perform a study on ATV trespassing on private lands and forbidden public lands. Kentucky's General Assembly will use these findings to determine ways to prevent future trespassing and to enforce current regulations.

Because Governor Beshear understands the importance of tourism to our Commonwealth, he elevated the Department of Tourism, which was a part of the Commerce Cabinet, to Cabinet level, creating the Tourism, Arts, and Heritage Cabinet. This gives the tourism industry more input in economic development of the state, allocation of the state's resources, and other important decisions affecting the industry. The Tourism, Arts, and Heritage Cabinet was successful in creating and passing a 1% Transient Room Tax, which will raise funds for advertising and promotion for Kentucky's tourism industry.<sup>53</sup> Kentucky led the way in passing legislation, termed the Tourism Development Act, which provides a state sales tax incentive program for tourism development projects. This Act gives developers of new or expanding tourism projects the ability to recover up to 25% of project

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<sup>53</sup> KRS 142.400.

development costs over a 10-year span for new tourism development project. The Act also allows developers to recover up to 50% of project development costs over a 20-year span if the project is located in a state park, federal park or national forest.<sup>54</sup> New legislation, Senate Bill 196, was passed in the 2008 regular session regarding adventure tourism. This legislation expanded the Kentucky Recreational Trails Authority's Board from 13 members to 23 members in order to involve more user groups. The legislation also provides for land use agreements between private owners of land and any governmental entity of the Commonwealth for a recreational purpose. Allowable recreational uses include, but are not limited to: ATV riding, public hunting, nature conservation, biking, rock climbing, hiking, and horseback trail riding, but the uses may be limited by the scope of the agreement. This legislation also limits a private owner's liability, which has been the primary obstacle in persuading owners of private lands to open those lands up for public use. An owner of land that enters into a land use agreement with a governmental entity is not liable for injuries received on that land when users go onto the land for recreational purposes. Owners are not liable for injuries so long as the owner does not willfully or maliciously fail to guard or warn against a dangerous condition or charge the user a fee to enter the land.<sup>55</sup>



In the development of our trail system, we are building on what we have in place. We need to do the same in all areas as we work to create this new industry in Appalachian Kentucky. Kentucky's state park system is one of the best in the nation. We have 24 state recreational parks and 17 resort parks, which offer overnight accommodations. Kentucky has the most resort parks of any state in the nation and offers visitors the opportunity to bike, hike, camp, golf, fish, go off-roading, go horseback riding, boat or swim. Kentucky's Unbridled Adventure campaign is pairing up with the state parks system and offering organized activities for those with a more adventurous spirit. For example, several state parks are offering overnight canoe excursions, overnight backpacking trips, guided hikes, caving expeditions, mountain biking trips, and wildlife viewing trips to look for eagles and elk. Our state parks are located in areas of the state where adventure tourism is

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<sup>54</sup> KRS 139.536 and KRS 148.851 to 148.860 are known as the Kentucky Tourism Development Act.

<sup>55</sup> KRS 148.795, as amended by Senate Bill 196.

expected to grow, such as Pine Mountain State Resort Park in southeastern Kentucky, Carter Caves State Resort Park in northeastern Kentucky, and the Jenny Wiley State Resort Park in eastern Kentucky. Because many of these parks are equipped with lodging and restaurant facilities, adventure tourists have a place to sleep, eat, and relax that is already established. Adventure tourism will increase state revenues as the economy grows stronger, but it also increases the state's revenue because of the increased use of the state parks.

Visitors to Appalachian Kentucky will need a place to stay and will desire to immerse themselves in the culture of the area that they are visiting. As adventure tourism develops, our small towns must develop as well. Not development in terms of urban development, but by promoting the small town charm and hospitality that Kentucky is known for. Adventure tourists will need sleeping accommodations and restaurants and will want shopping opportunities. Residents of these small Appalachian communities must take advantage of these tourist dollars by opening bed and breakfasts, cafes, and craft shops. If we are to be successful in creating economic opportunities for Kentuckians, part of the focus must be on that which makes Kentucky unique. Adventure tourists are not visiting Appalachian Kentucky wanting and expecting to stay in the same hotels, eat the same food, and buy the same goods as they would in a large city.

The preservation and development of our rich cultural and historic assets promotes downtown and residential districts, helping stabilize and invigorate local business conditions. While the beauty of our natural environment is going to be the basis for promoting adventure tourism, we must not forget that our small towns, many of which still have intact downtowns, can provide the quaintness or charm that folks are seeking for as they look to spend their vacation



*Downtown Pikeville*

Governor Beshear understands that hunting and fishing are a large part of Kentucky's economy. Kentucky experiences a \$4.8 Billion annual economic impact from hunting, fishing, boating, and wildlife watching. Over 60,000 people are employed in related jobs. Kentucky has the one of the greatest black bear populations in the country and has the largest herd of elk east of the Rocky Mountains, with 6,500 elk.<sup>56</sup> The elk were released and populate a 16 county elk restoration zone in the heart of Appalachian Kentucky. In 2006, 26,000 people paid

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<sup>56</sup> Kentucky Tourism, Arts, and Heritage Cabinet Accomplishments, <http://commerce.ky.gov/facts/>, December 14, 2008.

\$10 to be part of a lottery to participate in the first Fall Elk Hunt. Only 200 names were drawn and all were asked to participate in a survey following the hunt, of which 103 did. Hunters spent an estimated \$23,723 scouting before the hunt and an estimated \$42,000 was spent during the hunt, the majority of which was spent in southeastern Kentucky. Of the surveyed hunters, 84 people said that they plan to come back to the area and only one said that they did not plan to enter the lottery for 2007.<sup>57</sup>

### Strengths, Weaknesses, Opportunities, and Threats of Adventure Tourism in Kentucky

In Kentucky, adventure tourism is a primary initiative of Governor Beshear and is very strongly supported by Lieutenant Governor Mongiardo and First Lady Jane Beshear. Kentucky has some of the most beautiful and diverse land in the United States; Kentucky's landscape varies from mountains to rolling hills, from forest-land to lakes. Virtually any type of outdoor activity can be found in our picturesque Commonwealth. Kentucky, especially Appalachian Kentucky, is a land of strong culture. A vital part of Kentucky's culture is outdoor activities, including hunting, fishing, ATV riding, and horseback riding. With the support of Governor Beshear's administration and the support of Kentuckians, the adventure tourism program will thrive and foster Kentucky's, especially Appalachian Kentucky's, economy.

A positive economic impact has shown already in Harlan County, where adventure tourism has been flourishing for several years. According to Black Mountain Adventure Tourism Park Economic and Visitor Report, in a voluntary survey conducted between July 2004 and July 2006, the park had between 28,000 and 31,000 visitors per year. Those visitors spent an average of \$202.79 per person per day when they visited the park. The majority of the park visitors, 73%, were from Canada, New York, Indiana, Illinois, Ohio, Wisconsin, Massachusetts, and Michigan. The rest of the park visitors came from Florida, North Carolina, South Carolina, Tennessee, Texas, Georgia, and Alabama. The further US visitor was from California and there was one group visiting from Spain. 86% of the off-road riders lived within a five-hour drive of Harlan County. Since the boom of adventure tourism in Harlan County, three franchise name ATV shops, two local ATV shops, 14 new log cabins, four new RV/camp sites, 31 rental homes/apartments, three new restaurants, two new car washes, and ATV rentals have all been added, with 61.5 new jobs being



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<sup>57</sup> "Elk in Kentucky: Preliminary Survey Results for the 2006 Elk Hunt," <http://www.trailsrus.com/elk/2006hunt.html>. December 15, 2008.

created in the area.<sup>58</sup> Harlan County's Adventure Park was selected as the number one ATV destination in the US for three years in a row.<sup>59</sup> In 2006, Evarts, located in Harlan County, broke the world record for "longest parade of ATVs" with 1,138 ATVs in a single parade.<sup>60</sup>

Because land is not readily available and the adventure tourism initiative has very little funds to work with, Kentucky has not seen rapid growth in trail development. One of the major hindrances to trail development was the liability issue. With the passing of Senate Bill 196, many owners are more willing to enter into a contract with a governmental entity to allow recreational use of their land. This is particularly beneficial in Appalachian Kentucky, where single owners have large tracts of forestland and cleared mining areas; these areas are perfect for ATV and horseback riding. However, as the liability issue remains untested in a court of law, some owners remain skeptical of whether the legislation will actually protect them. Kentucky is also unable to provide insurance to the landowners entering into agreements with a governmental entity.

Kentucky is committed to promoting safety for all modes of adventure tourism, but especially for ATV's. According to Consumer Product Safety Commission, Kentucky is second in the nation with over 140 total reported ATV deaths from 2003 to 2006. Worse, Kentucky is number one in the nation for ATV deaths of persons under the age of 21. An ATV Training Center was recently opened in Knott County and is one of only a few in the nation. Lieutenant Governor Mongiardo was among the first to receive ATV certification training. The course includes training in proper riding attire, the importance of helmet use, and how to handle potentially tricky situations. In addition, Lieutenant Governor Mongiardo, state Senator Brandon Smith, and First Lady Jane Beshear have joined together to record radio Public Service Announcements promoting ATV safety that air across the state.<sup>61</sup>

With the Alltech FEI World Equestrian Games coming to Kentucky in 2010, there has been an increased interest in horses. Horses are a vital part of Kentucky's culture, long being revered as the "Horse Capital of the World." With the excitement

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<sup>58</sup> "Black Mountain Adventure Tourism Park Economic and Visitor Report," Evarts, Kentucky. July 2004-July 2006, as presented to the KRTA Board at their January 2008 meeting in Frankfort, Kentucky.

<sup>59</sup> Selected by [www.atvpathfinder.com](http://www.atvpathfinder.com).

<sup>60</sup> Lee-Sherman, Deanna, "County Breaks ATV World Record." Harlan Daily Enterprise, Harlan, Kentucky. September 16, 2006.

<sup>61</sup> "Lieutenant Governor Daniel Mongiardo Completes ATV Safety Certification," July 22, 2008, Bowling Green, Max Media of Kentucky, [www.wnky.net/news/local/25754354.html](http://www.wnky.net/news/local/25754354.html)

building around the games, Kentuckians are remembering their love for the animals. This translates into greater interest in horseback riding and other adventure tourism activities. There will be an enormous number of horse lovers descending upon Kentucky in 2010, and we need to take advantage of their desire to ride. Kentucky needs to provide these horse owners with trails to ride on and assorted ways for them to spend time and money. Kentucky also needs to present a united and hospitable front to our visitors so that they will come back and bring their friends. If Kentuckians are excited about our great state, our visitors will be as well.

Our neighboring states have opened the door and have shown economic stimulus from adventure tourism, states such as West Virginia and North Carolina. As other states recognize the economic benefits of adventure tourism, Kentucky must act before the visitor base travels elsewhere. With the recent downturn in the nation's economy, people have less money to travel and want to stay close to home. With two-thirds of the nation's population within a one-day car ride of Kentucky, Kentucky has a huge opportunity to provide a fun, family-oriented, economical, adventure vacation to groups that may not have considered such a trip before.

### Benefits of Adventure Tourism

There are numerous studies and articles on the economic benefits of adventure tourism. Every study shows that trail development attracts and restores businesses, generates new jobs, and raises public revenue. But trail development and adventure tourism also lead to increases in property value, provides health benefits, and many other immeasurable advantages. This holds true whether the trails are hiking, biking, ATV riding, or horseback riding trails. Trails increase a community's sense of pride as residents begin to appreciate the area that they had taken for granted for so long.

Nationally, trail-related expenditures, depending upon the mileage covered, range from less than \$1 per day to more than \$75 per day. Further, a trail can generally produce about \$1 Million in annual revenue for a community, so long as the town accepts and supports the trail system. A wonderful example of how a small town has boomed with the development of a trail is Lanesboro, Minnesota, population 800. The difference between pre-trail and post-trail Lanesboro was the addition of "12 B&B's (with year-long waiting lists), 8 restaurants, an art gallery, a museum, and a thriving community theater... The visitors are people who are having a good time, want it to continue, and are willing to spend the money to spend quality time on the trail. This kind of 'impulse' purchase bodes well for retailers along our trails." In

this Minnesota town, the economic impact of the trail is more than \$5 Million per year.<sup>62</sup>

Arizona State Parks conducted a yearlong economic study in 2002 on the economic benefits of off-highway vehicle recreation. The study showed the total economic impact (direct and indirect) from recreational off-road vehicle use was \$4.25 Billion to the state as a whole. This recreational industry alone generated over \$3 Billion in retail sales and added \$187 Million to annual state tax revenue. Further, off-road vehicle recreation supported 36,591 Arizona jobs and generated household income of \$1.1 Billion. 21% of Arizona's population participated in the recreational activity, totaling 1.1 Million people.<sup>63</sup>

“[W]ell-managed trails running through communities can foster substantial, sustainable economic activity through business development and tourism. Trails encourage the establishment of ‘clean’ industries and business, such as cafes, bike shops, and bed and breakfasts in communities along the trail.” The recreational and leisure industry is a \$311 Billion industry and has increased from 6.5% of total consumer spending to 10.5% in 15 years.<sup>64</sup> In a study conducted on the Greenbriar River Trail, it was determined that the average trail user was highly educated with a household income of more than \$60,000 per year and that 60% of trail users were out-of-state visitors. Of those out-of-state visitors, 90% of respondents said that they were highly likely to return to the area. Visitors primarily spent money on food, travel, and lodging when visiting the Greenbriar River Trail. 58% of visitors spent between \$100 and \$500 during their visit. Those who spent less than \$100 all lived within the corridor and the 39% of visitors that spent more than \$500 virtually all lived outside of West Virginia. Of the visitors surveyed, 47% said that they were first-time visitors and the same percentage of visitors said that they were influenced to visit by word of mouth. Also, 48% of the respondents said that they were planning on visiting another recreational area in the West Virginia corridor on that trip.<sup>65</sup> The creation of trails provides new opportunities for small towns, with increased demand for lodging and restaurants. Trails, whether advertised or not, bring out of town visitors. Trail visitors have money and are willing spend it on recreational activities.

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<sup>62</sup> Sjoquist, Gary, “The Economic and Social Benefits of Trails,” February 2003  
[www.americantrails.org/resources/economics/MNecon.html](http://www.americantrails.org/resources/economics/MNecon.html)

<sup>63</sup> “Economic Benefits of Off-Highway Vehicle Recreation in Arizona: Statewide Motorized and Non-motorized Trails Plan” November 2004, Arizona State Parks.

<sup>64</sup> “The Economic Benefit of Trails,” American Hiking Society, Silver Spring, MD.  
[www.americanhiking.org](http://www.americanhiking.org)

<sup>65</sup> “Maximizing Economic Benefits from a Rails-to-Trails Project in Southern West Virginia: A Case Study of the Greenbriar River Trail.” October 2000.

Trail development increases property value and makes the community more appealing. According to the US National Parks Service, the value of property that is located adjacent to trails and greenway increases from 5% to 32%.<sup>66</sup> In a survey conducted by the University of Nebraska, 65% of respondents thought that their home would be easier to market and sell because it was near a trail and 42% said that their home was easier to sell because of its location near a trail. When polling homeowners who purchased their home after the trail was constructed, 63.8% said that the trail positively influenced their purchase decision.<sup>67</sup> When asked to rate the importance of community amenities that would seriously influence your decision to move to an area, keeping in mind that the amenities may increase your costs, 44% of respondents said that highway access would influence their decision. 36% said that walking/jogging/biking trails would sway them, followed by 28% ranking sidewalks on both sides of the street. 26% of respondents wanted parks, 21% wanted playgrounds, 19% wanted shops within walking distance, and only 8% said that amenities such as golf courses, tennis courts, club houses, and baseball/softball fields would influence their decision on moving to the area.<sup>68</sup> Studies show that 70% of landowners believe that an adjacent trail is a “good neighbor” and there are positive effects including being more in tune with nature (64%), recreational opportunities (53%), and health benefits (24%).<sup>69</sup>

The development of trails and spread of adventure tourism will have beneficial effects on the health of the population. Many adventure tourism activities are physically challenging, such as hiking, biking, rock-climbing, canoeing, and kayaking. Studies have shown that participating in activities such as these several times a week can improve a person’s health and lower health care costs. The US National Park Service conducted a study on this topic and compared people who lead sedentary lives with those who exercised regularly. “The exercisers filed 14% fewer healthcare claims, spent 30 fewer days in the hospital, and had 41% fewer claims greater than \$5,000.” For instance, in the United States, each year 1.5 million fractures are associated with osteoporosis. Participation in activities such as hiking results in increased bone mass which slows the osteoporosis deteriorating process, leading to fewer fractures and lower medical costs. “The anticipated national

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<sup>66</sup> Sjoquist, Gary, “The Economic and Social Benefits of Trails,” February 2003 [www.americantrails.org/resources/economics/MNecon.html](http://www.americantrails.org/resources/economics/MNecon.html)

<sup>67</sup> “Omaha Recreational Trails – The Effects on Property Values and Public Safety,” report conducted by the University of Nebraska, June 2000.

<sup>68</sup> “Economic Impact of Trails,” 2002 Consumer Survey by the National Association of Realtors and National Association of Homebuilders.

<sup>69</sup> Sjoquist, Gary, “The Economic and Social Benefits of Trails,” February 2003 [www.americantrails.org/resources/economics/MNecon.html](http://www.americantrails.org/resources/economics/MNecon.html)

benefits of increased participation in physical fitness include reductions in both the direct and indirect costs of illness and disease, improvement in lifestyle and a reduction in geriatric costs.”<sup>70</sup>

### How Adventure Tourism can Help Appalachian Kentucky

As Kentucky searches for ways to stimulate its economy and bring in more revenue, both for the government and for its citizens, an adventure tourism industry represents potential to be unlocked, especially in the Appalachian region. Adventure tourism is a high growth area in which Kentucky has an abundance of natural resources. Appalachian Kentucky’s natural resources will not be destroyed by growth in this area; rather a viable and successful trail system will help ensure the continuation and prosperity of our ecological wonderland.

Adventure tourism is a green industry. Kentucky needs environmentally friendly industries to help make up for high coal usage and our large carbon footprint. Kentucky is the 13<sup>th</sup> highest carbon outputting state in the nation, with the 25<sup>th</sup> largest population.<sup>71</sup> Kentucky’s Golden Triangle has a shockingly huge carbon footprint, when examining the 100 largest metropolitan areas in the US, Lexington, KY was the 100<sup>th</sup> largest city but had the highest carbon footprint of all 100 cities.

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[www.americanhiking.org](http://www.americanhiking.org)

59 “The Economic Benefit of Trails,” American Hiking Society, Silver Spring, MD.

60 “Kentucky Energy Consumption Information,”  
[http://www.eredux.com/states/state\\_detail.php?id=1135&state=KENTUCKY](http://www.eredux.com/states/state_detail.php?id=1135&state=KENTUCKY)

Cincinnati/Northern Kentucky had the 3<sup>rd</sup> largest carbon footprint and Louisville ranked 5<sup>th</sup>.<sup>72</sup>

Adventure tourism is Kentucky's best prospect to boom the Appalachian region's economy. Appalachian Kentucky has the natural resources; the missing link is the investment to build the trail system and the acquisition of needed land. Harlan County and other Appalachian counties are already feeling the economic benefits of their adventure tourism programs, with the influx of new businesses supporting their booming ATV industry.

These jobs would mainly be tourism-centered and therefore mainly service jobs. Service jobs, while not the highest paying, employ a wide range of people, from teenagers to elders. Further, many service-related jobs do not require extensive training or education. According to the Comprehensive Adventure Tourism Plan for Eastern Kentucky, "the potential increase in the work force is 824 to 1,505 full time equivalent laborers." Further, adventure tourism is a stable industry. The jobs that have been and will be created are not temporary, rather they are long-term. There is no way to outsource jobs such as these to other countries with cheaper labor and the jobs are not reliant on an expendable resource. People are always going to want to be outdoors and participate in activities such as hiking, biking, and horseback riding. As urban development increasingly encroaches upon rural areas, there is less and less undisturbed land to enjoy, so the demand for our beautiful state will increase exponentially. Adventure tourism would lead to job growth in Appalachian Kentucky. As more tourists visit the adventure tourism sites, demand will increase for these service related industries, such as lodging, restaurants, and shops to repair and purchase equipment for the tourist's activity of choice.

The Comprehensive Adventure Tourism Plan for Eastern Kentucky also estimates that the total economic impact from adventure tourism in Eastern Kentucky will range from \$54 Million to \$99 Million.<sup>73</sup> With new jobs and businesses coming to Appalachian Kentucky, diversification from coal in economic development will finally become a reality. With economic development comes increased government revenue because of taxes. Taxes in turn fund education and other important programs for Kentuckians.

Governor Beshear has a goal that the statewide trail system will be complete by 2010. In September and October of 2010, the Kentucky Horse Park is hosting the Alltech FEI World Equestrian Games. It is expected that the Games will bring

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61 "Shrinking the Carbon Footprint of Metropolitan America" May 29, 2008, The Brookings Institution.

<sup>73</sup> "Kentucky Adventure Terrain: Eastern Kentucky Comprehensive Adventure Tourism Plan," Pros Consulting, LLC.

500,000 visitors from around the world and have a \$150 Million economic impact on our state.<sup>74</sup> This is a once in a millennium opportunity for Kentucky to promote all that we have to offer. With the abundance of horse enthusiasts that are coming, we want to be able to introduce our visitors to the statewide horseback riding trail system that highlights Kentucky's scenic beauty, so that these visitors will come back.

It has been shown that trails, and the development that trails bring, will make Appalachian Kentucky a more appealing to reside. This is important for two primary reasons. As Kentucky tries to build on Governor Beshear's Energy plan and the development of coal to liquid technologies, there must be an influx of trained people. Secondly, Kentucky is continually trying to bring new businesses into the industrial development parks that are positioned throughout eastern Kentucky.

There are innumerable benefits of the development of a successful adventure tourism industry in Appalachian Kentucky. However, we can not realize these benefits without substantial investments. With government and citizen support, Kentucky can be not only the Horse Capital of the World, but also the Adventure Tourism Capital of the World.

## **Energy**

Energy industry-based economies are nothing new to Appalachian KY. Coal mining has been a major producer of jobs and opportunity for Kentuckians since before the Civil War. Booms and busts in Kentucky's coal industry have shaped the economic landscape in Eastern Kentucky as significantly as the mountains, valleys, streams and forests define the physical landscape. Appalachian Kentucky is also densely wooded and rich in natural gas resources compared with the rest of the state, making the region the Commonwealth's energy-based economic engine. Significant progress has been made in economic competitiveness, educational attainment, certain health indicators, and quality of life issues, owing in part to investments made with revenue from coal and energy-based industries. As noted, Appalachian Kentucky communities in many ways have not progressed at a rate on par with communities in the rest of this state, most of the other ARC states, or nationally.

Governor Beshear's administration believes energy technology advancements can serve as a catalyst to dramatically improve the overall economy of Appalachian Kentucky. Along with a vibrant and dynamic economy based on energy technology and environmental stewardship, Appalachia will see improvements in educational attainment and health and social indicators. As previously discussed, systemic

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<sup>74</sup> Kentucky Tourism, Arts, and Heritage Cabinet Accomplishments, <http://commerce.ky.gov/facts/>, December 14, 2008.

historical challenges facing Appalachian Kentucky are all inter-connected, and one serves as a reason for the other; i.e., poor health factors and education levels being prime reasons for widespread economic distress and vice-versa. Wisely developing and diversifying the region's energy resources will create a productive, sustainable, dependable industry in Eastern Kentucky.

In Governor Paul Patton's 2000 Appalachian Development Plan, the authors warned, "Economic development is the result of sustained efforts comprised of coordinated, strategic tactics keyed to specific outcomes. There are no 'silver bullet' solutions or 'quick fix' resolutions to the region's advancement challenges"<sup>75</sup>. They were absolutely correct. This is why the Energy section of the Beshear administration's plan is only a piece of the larger document.

Generations of political leaders, socially conscious outside interest groups, grassroots organizations, and concerned locals have dedicated immense amounts of time, energy, and thought to the development of central Appalachia into economic parity with the rest of the nation, with limited success. While it won't be a silver bullet, the industry for which Appalachia is perhaps best known, energy, also provides the best and most timely opportunity for a rapid positive economic impact in the region.

There are many reasons to be optimistic for such a future, including:

- 1) The global energy landscape, the need for America to move toward energy independence, and new political realities.
- 2) Eastern Kentucky's abundance of natural resources and political willingness to embrace new energy technologies.
- 3) The bold, forward-thinking, strategic energy plan recently completed and published by Governor Beshear's administration, "Intelligent Energy Choices for Kentucky's Future (Kentucky's 7- Point Strategy for Energy Independence)."

### **The Argument for Energy Independence and Diversification**

The importance of energy independence as a political issue was illuminated during the 2008 Presidential campaign. Our nation's growing dependence on imported oil makes our economy more vulnerable to price volatility in international markets. That much of this oil comes from unstable and sometimes hostile countries heightens our vulnerability.

Just as important as addressing energy security is our need to address issues surrounding global climate change. The debate today is not over the primary cause

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<sup>75</sup> "Pursuing the Potential of Appalachian Kentucky." Governor Paul E. Patton. November, 2000. pg. 29

of climate change—the increasing concentration of greenhouse gases in the atmosphere from fossil fuel combustion and other activities—but rather, how to implement effective policies to reduce emissions of greenhouse gases, especially carbon dioxide (CO<sub>2</sub>). The timing is perfect for an energy technology revolution in this nation. Americans have shown a willingness to embrace energy efficiency and new technology, as evidenced by the decrease in demand of gasoline when the price of a gallon was over \$4.00 nationally in the summer of 2008, the decrease in the purchase of less fuel-efficient, larger automobiles, and the increase in demand for smaller, more fuel-efficient cars and trucks. Politicians from both major parties have not only argued for more energy independence in America for economic reasons, but national security reasons as well. And both parties' Presidential candidates in 2008 supported "green-collar" technologies and efforts to combat greenhouse gas emissions. *"It now seems certain that climate change and energy security are two of the greatest challenges the global community faces in the 21<sup>st</sup> century. Energy policies designed to address one of these challenges alone can have unintended and often negative consequences on the other."*<sup>76</sup>Essentially, the stars are aligning themselves for a transformation of how Americans think about, produce and use their energy.

Many Kentuckians, especially members of leadership in our State Legislature, have proven over the years that they understand the importance of energy independence, combating climate change, and how Kentucky and specifically Eastern Kentucky can play a strategic role in furthering the national agenda in these critical areas. In 2006, both the State House of Representatives and the Senate unanimously passed Kentucky House Bill 299, that is essentially a declaration of the need for American independence from foreign oil, an acknowledgment of the role of Kentucky's natural resources in helping secure our national independence, and what role state and federal government should play in leading the charge, forging partnerships with the public, private and educational sectors.

Other significant steps forward were companion bills sponsored and championed by Elliott County's own State Representative Rocky Adkins and passed in two recent Legislative Sessions. In the special legislative session of 2007, the Legislature passed House Bill 1. HB1 provides economic incentives to companies that propose to build facilities dedicated to alternative energy, particularly liquid fuels derived from coal and biomass. It also mandated that the Commonwealth develop a plan to replace half of the government's fleet of vehicles with alternative fuel vehicles. Among other things, it also established funding for loan forgiveness for certain students who pursued energy-related careers and it provided direct monetary support to the Kentucky Geological Survey and the Center for Applied Energy Research at the University of Kentucky to study carbon capture and sequestration technologies.

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<sup>76</sup> World Resources Institute. 2007

The companion piece of legislation, House Bill 2 passed by Kentucky's General Assembly, was signed into law by Governor Beshear in 2008. This bill establishes high-energy efficiency building standards for state buildings construction and renovation. It also provides residential energy efficiency Kentucky income tax credits, and among other things, appoints a high-performance buildings advisory committee for state government. All provisions were crafted to enhance current energy policies and build on the movement toward efficiency.

In regard to the oncoming energy efficiency and technology revolution, policymakers should be able to envision and embrace the potential positive impacts. However, as the state's recently produced energy plan points out, current concerns and justifications for embarking upon a bold new frontier are not new. *"Many remember the issues we faced in the 1970s when the oil embargo crippled our state and the nation. Those issues are heightened today and affect our economic and energy security. Rising oil and natural gas prices have startled consumers, who are actively seeking solutions."*<sup>77</sup>

The Governor's plan, points out that the difference between today and the 1970s are four key issues.

- Global warming is a known and must be addressed.
- In a global economy, the United States alone controls neither energy prices, nor supply and demand.
- Kentucky's electricity energy infrastructure requires major rebuilding over the next 20 years.
- National security is directly tied to how energy independent we can become.

What possible opportunities exist for Kentucky's 54 ARC counties? As will be detailed in the next two segments, Appalachian Kentucky counties are strategically positioned to benefit from new energy technology industries. Governor Beshear's energy strategy addresses several components of a comprehensive energy plan that could produce "green-collar" jobs, and more important to Appalachia, it calls for diversified uses of the natural resources with which Appalachian Kentuckians are so blessed. And in concurrence with the political realities revolving around the issue of global climate change, the Governor's plan emphasizes the essential need for carbon capture and sequestration technologies, which will also further create economic opportunities for the region.

### **Appalachian Kentucky Assets**

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<sup>77</sup> "Intelligent Energy Choices for Kentucky's Future." Commonwealth of KY. November 2008

Lynch, Kentucky, in Harlan County was a company town established in 1917 by the U.S. Coal and Coke Company. By the 1940s, Lynch had more than 10,000 residents. The economy had been built around coal mining. The community had assets, including a hospital and a movie theater. By the 1960s and 70s, as mining shifted to less labor-intensive methods, the population declined radically. In the 2000 Census, the population was 900. The 2007 population estimate for Lynch was 828.

This is a story that could apply to small mining towns all across Central Appalachia. During the boom times, people would seek out job opportunities in the coal mining industry. Fortunes have been made from the extraction of natural resources from the mountains. But mining success never translated to a broad economic improvement of the population comparative to the rest of the nation, or did much to improve the isolated nature of the region. There are a multitude of reasons that prosperity and progress were limited, but in the 21<sup>st</sup> Century, after the achievements in inter-connectedness, remote isolation is not as big an obstacle for Appalachian Kentucky as it once may have been.

Over the decades, roads and bridges have been constructed and improved. Political will has driven public drinking water infrastructure to places residents would have never dreamed possible two generations ago. And the most obvious advancement to connect Appalachian Kentucky with the rest of the U.S is technology. The wall of isolation, which once might as well have been literal, is now merely metaphorical. Therefore, it should be true that if Appalachian Kentuckians create sustainable, dependable industries, meaning the jobs are something more than here today, gone tomorrow, Appalachian communities could progress at an accelerated rate and move into parity with the rest of the state. Energy-related industries, potentially creating thousands of new jobs and millions of new dollars in tax revenue, could be the lynchpin by which to make such a move.

Appalachian Kentucky is strongly positioned to take advantage of new energy-related opportunities due to the abundant natural resources and workforce expertise in certain energy-related fields. Of the 16,986 direct coal mining related employees in Kentucky in 2007, 14,106 of them were in the Eastern Kentucky coalfields.<sup>78</sup> Kentucky accounts for ¼ of all coal production east of the Mississippi River. Citizens of Kentucky already benefit from low electricity prices, made possible by the fact that over 90 percent of the electricity comes from burning coal. And Eastern Kentucky is home to 11 recently evaluated sites that are amenable to locating coal-gasification facilities.<sup>79</sup>

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<sup>78</sup> Energy Information Administration. U.S. Government.

<sup>79</sup> Kentucky Site Bank Evaluation. Energy and Environment Cabinet. June, 2008. <http://www.energy.ky.gov/NR/rdonlyres/4315493D-B682-4C32-859F-1ED27D9EB320/0/2008SiteBankReport.pdf>

Appalachian Kentucky is not just abundant in coal. A majority of the state's natural gas production comes from the Big Sandy Field in Eastern Kentucky. Within Appalachia also lies the most heavily forested area in Kentucky.

At first glance, one might think it paradoxical to discuss the realities of a carbon-constrained world in one breath, and trumpet the abundance of carbon-based natural resources in the other. But in discussing Governor Beshear's statewide energy plan, it is evident that the state's resources play a key role in helping reduce dependence on oil and diversifying our energy portfolio, thus creating job and economic opportunities for Appalachian Kentuckians. It is a future that can exist, but it will take an immense effort by stakeholders on multiple levels, from the Federal Government to private business partners, to local residents.

### **Intelligent Energy Choices for Kentucky's Future: The Beshear Administration Plan**

In late November 2008, Kentucky Energy and Environment Cabinet Secretary Len Peters presented to Governor Steve Beshear per his commission "*an energy plan that will improve the quality of life for all Kentuckians by simultaneously creating efficient, sustainable energy solutions and strategies; by protecting the environment; and by creating a base for strong economic growth*".<sup>80</sup> In representing the Governor's Appalachian development initiatives, this document will continue to re-iterate the fact that the future of Appalachian Kentucky will be completely integrated into all Beshear administration proposals and initiatives. But in certain matters, Appalachian Kentucky can and must provide leadership. Energy technology and production is the most obvious example of this notion. And for the good of the region, the embrace of the expansion and diversification of the state energy portfolio along with the commitment to environmental responsibility by the major stakeholders should be priority.

Governor Beshear's plan is a 7-point strategy for energy independence.

- *Strategy 1: Improve the Energy Efficiency of Kentucky's Homes, Buildings, Industries, and Transportation Fleet*
- *Strategy 2: Increase Kentucky's Use of Renewable Energy*
- *Strategy 3: Sustainably Grow Kentucky's Production of Biofuels*
- *Strategy 4: Develop a Coal-to-Liquids Industry in Kentucky to Replace Petroleum-Based Liquids*
- *Strategy 5: Implement a Major and Comprehensive Effort to Increase Gas Supplies, Including Coal-to-Gas in Kentucky*

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<sup>80</sup> "Intelligent Energy Choices for Kentucky's Future." Pg. ii.

- *Strategy 6: Initiate Aggressive Carbon Capture/Sequestration (CCS) Projects for Coal-Generated Electricity in Kentucky*
- *Strategy 7: Examine the Use of Nuclear Power for Electricity Generation in Kentucky*

The plan calls for diversification across the sector so that the anticipated growth in the need for electricity by 2025 can be met while at the same time reducing Greenhouse Gas Emissions to a point 50 percent lower than they would be under a business-as-usual scenario, in fact, 20 percent lower than 1990 emissions levels. This bold goal can only be met by embracing energy efficiency and conservation, promoting the advancement and use of renewable resources, utilizing carbon capture and sequestration technologies, and potentially implementing nuclear energy use.

The list of strategies makes apparent what some of the potential for Appalachia could be. But this document will expand on some of the strategies themselves and how they apply to and open opportunities for Kentucky's ARC counties.

**Strategy #1** discusses energy efficiency. The goal is to offset at least 18 percent of Kentucky's projected 2025 energy demand through efficiency measures. *"Energy efficiency improves business competitiveness, household savings and the environment. Green jobs, sometimes called green collar jobs, that result from investments in energy efficiency and renewable energy, can create opportunities for the economy as well"* (Energy Plan).

Appalachian Kentucky will see similar opportunities in energy efficiency efforts as the rest of the state.

**Strategy #2** discusses increasing Kentucky's use of renewable energy. The Beshear administration's plan directly addresses the potential positive economic impact renewables could have on Kentucky's rural communities. This is an area from which the non-coal producing counties in Kentucky's ARC region could really see benefit. *"Examples of renewable energy resources in Kentucky include hydroelectric, landfill gas, biomass, solar and wind energy."* Renewable energy markets would diversify local economies and create employment opportunities for research, manufacturing, and businesses (Energy Plan, p. 31).

Appalachian Kentucky counties, though sharing the all too common similar characteristics of economic distress, are quite diverse geologically and topographically. Although most counties would have limited possibilities for the expansion of solar, wind, and landfill gas energy production on a large scale, some would be much more suited than others to take advantage of hydroelectric technologies. And again, perhaps the greatest opportunity for renewable energy technology implementation could come from woody biomass. And woody biomass is most abundant in Kentucky in the Eastern part of the state and ARC counties in general.

**Strategy #3** involves sustainably growing Kentucky's production of Biofuels. The challenge across the globe with biofuels production is to make sure the pursuit of biofuel does not interfere with continuing to produce safe, abundant, and affordable food, feed and fiber. *"(biofuels) Feedstock materials available in Kentucky include corn, soybeans, switchgrass, corn stover, other crop residues, animal fat, and woody biomass"* (p. 49). Similarly to strategy #2, Appalachian Kentucky would have opportunities to develop biofuels industries. As evidence, In November, 2008, Governor Beshear announced a partnership with Eastern Kentucky University and General Atomics Corporation to develop an algae-based biofuels research facility in Clark County, an ARC county. Governor Beshear has recommended that ARC funds be used to augment the project.

**Strategy #4** really begins addressing the potential rapid economic improvement opportunities for Appalachian Kentucky's coal producing counties in the future. The goal reads: *Kentucky will develop a CTL (coal- to- liquids) industry that will use 50 million tons of coal per year to produce four billion gallons of liquid fuel per year by 2025.* Coal-to-liquids would take Eastern Kentucky's bituminous coal, and through the Fischer-Tropsch process, turn it into liquid transportation fuels. In fact, the United States military has successfully tested a 50/50 blend of coal derived liquid fuel and JP-8 (typical petroleum-based jet fuel) in some of its aircraft engines.

Coal-to-liquids technology is not a new concept. South African company SASOL currently produces about 40 percent of South Africa's liquid fuel demands from coal (p. 64). Impediments for the industry in the U.S. include constructing workable business models that could remain profitable in the face of oil price volatility, financing difficulties given the high costs of constructing such facilities, and potential (widely expected) greenhouse gas emissions cap legislation at the federal level.

Currently the global economic recession has brought oil prices down considerably from their recent highs, but the point is that the nation will always be forced to import more oil than it can produce; therefore, in order to truly take America's destiny into her own hands, Americans need to pursue domestic alternatives. Coal-to-liquids could help meet such a need.

If coal-to-liquids plants are in Kentucky's future, the Appalachian counties, specifically heavy coal producing counties, stand to benefit substantially economically. The concept would offer a more permanent market for our coal mining industry that employs over 14,000 people directly, and one could only imagine what a multi-billion dollar, highly technological facility could do for an ARC county's economy.

Similar statements could be made in regard to **Strategy #5**, the implementation of a major and comprehensive effort to increase gas supplies, including coal-to-gas in Kentucky. The goal is *to produce the equivalent of 100 percent of our annual natural gas requirements by 2025 by augmenting in-state natural gas production with synthetic natural gas (SNG) from coal-to-gas (CTG) processing* (p. 72).

Currently the natural gas industry produces only about 44 percent of the state's energy natural gas needs. The rest is imported. An even easier process than the one that would turn coal to liquid fuel could be implemented to turn coal into a natural gas equivalent. Again, the process would require huge capital investments to build plants that would create thousands of jobs in the construction phase, and hundreds in operation. It would also provide a continued market for Eastern Kentucky coal.

Most of Kentucky's natural gas production comes from ARC Kentucky counties already. New technologies, including horizontal drilling into shale, are improving extraction possibilities. Add to that a potential new industry in coal gasification for technology to produce synthetic natural gas, and clearly the natural gas industry holds a promising future in Eastern Kentucky.

The possibilities of new coal usage technologies in Kentucky face serious hurdles if leaders do not embrace **Strategy #6** of the Beshear administration's plan. It calls for the Commonwealth to initiate aggressive carbon capture/sequestration projects for coal-generated electricity in Kentucky. *Kentucky must recognize the unique challenges we face in a carbon-constrained world, given our reliance on coal-fired power generation. The threats associated with climate change will require Kentucky to make a concerted effort to control emissions of carbon dioxide, while at the same time recognizing that coal will be a vital component of our energy mix. We must find a way to reduce carbon dioxide emissions and meet our energy needs for the future.*

While there are a number of actions, such as increased use of renewable energy and improved energy efficiency that must be undertaken to reduce greenhouse gas emissions, carbon capture and sequestration technologies must be a part of the mix. These technologies have the potential to reduce overall mitigation greenhouse gas reduction costs and increase the flexibility to achieve greenhouse gas emissions reduction goals. More research is needed in this field, especially to make these technologies economical, but the future is promising. President-elect Obama's administration, along with Governor Beshear's administration, seems intent on following through on funding for important clean coal research, the success of which is vital to the future of energy technology-related industries in Eastern Kentucky. Appalachian Kentuckians should, in fact, look upon the need for research as an opportunity for economic development in and of itself.

**Strategy #7** simply calls for an examination of the use of nuclear power for electricity generation in Kentucky. This document will not go into the arguments for and against nuclear power, but it is important to note the technology is increasingly gaining political support. Even President Obama's Energy Secretary, Nobel-prize winning physicist, Dr. Steven Chu is on record saying that nuclear power should "absolutely " be made a bigger part of the nation's energy mix. Nuclear power could allow us to achieve greenhouse gas reduction goals, diversify our energy portfolio, and use our abundant coal, natural gas and biomass resources to enhance energy security.

It is clear that the bold vision of Governor Beshear's energy plan opens up a lot of potential for Appalachian Kentucky to embrace research, new technologies, and new industries, in an effort to drive rapid positive economic advancements to the region.

### **Partnering with ARC**

The Appalachian Regional Commission is an obvious partner for an energy technology based economic future for the region. In October, 2006, ARC produced **Energizing Appalachia: A Regional Blueprint for Economic and Energy Development**.<sup>81</sup> The document discusses a host of identical issues to the Beshear administration's plan. It also lays out **Strategic Objectives for Economic and Energy Development**

- Strategic Objective 1: Promote energy efficiency in Appalachia to enhance the Region's economic competitiveness.
- Strategic Objective 2: Increase the use of renewable energy resources, especially biomass, in Appalachia to produce alternative transportation fuels, electricity and heat.
- Strategic Objective 3: Support the development of conventional energy resources, especially advanced clean coal, in Appalachia to produce alternative transportation fuels, electricity, and heat.

In essence, the ARC and Kentucky have very similar goals, and will be outstanding partners going forward. Kentucky has already had several energy-related projects funded through ARC, such as a Coal-to-Liquids plant feasibility study in Pike County. The Beshear administration expects to continue to pursue the use of ARC grant funds to support energy related initiatives.

### **Impediments to Energy Based Economic Opportunities in Eastern Kentucky**

The potential to dramatically improve Appalachian Kentucky's economy, thereby improving the quality of life for its residents, is real and attainable. But there are also some clear obstacles along the path. Appalachian communities have serious work to do to address workforce limitations, the health of the population, the educational attainment levels of Appalachian students, necessary infrastructure, housing and entertainment opportunities, available land, and other concerns that have historically negatively impacted economic development in Kentucky's ARC counties.

Specifically and immediately what needs to be done in Appalachian Kentucky to unlock the region's potential is to improve the workforce through education and training. There exists the need to pursue in-migration efforts of highly skilled,

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<sup>81</sup> **Energizing Appalachia: A Regional Blueprint for Economic and Energy Development**. Appalachian Regional Commission. October, 2006.

highly educated persons to work in technologically advanced industries. Citizens in Appalachian counties and other Kentuckians alike must move forward together, with the ability to make permitting and funding processes easier to access. We can and must get there, but it will not happen in one administration. Each subsequent administration must remain committed to the possibilities, while evaluating all variables at the time. Much the same way Governor Beshear's administration is committed to promoting the economic possibilities of Governor Patton's Regional Industrial Parks initiative.

### **Conclusion**

Perhaps no possible industry in a very long time has offered the potential to transform the economy of a particularly economically distressed region as the energy technology revolution does for Appalachian Kentucky. Such technologies will allow us to build a sustainable industry in Appalachian Kentucky that can break the cycle of poverty, poor education, and bad health. The nation is desperately seeking opportunities to break our dependence on foreign oil, and combat global climate change at the same time. In Kentucky, we are strategically positioned geographically to disperse new products to the rest of the nation, and Appalachian communities sit on some of the resources the nation will need.

*As the Governor's plan states, The Commonwealth already enjoys many comparative advantages in energy production, including a strong natural resource base, a highly skilled workforce and a strong work ethic, a highly qualified community of educators and researchers, and the commitment of its state government and legislature to achieve energy independence and reduce its carbon footprint. Building on these advantages, while encouraging innovation and ingenuity, will help Kentucky move forward to a secure energy future (p. 7).*

In many of Kentucky's 54 ARC counties, workforce challenges need to be addressed, but the natural resources are there. The world is changing in dynamic and unpredictable ways. Policymakers and stakeholders should embrace the concept, proceed swiftly, but wisely, and recognize the unprecedented economic opportunities Appalachian Kentuckians can have if the fundamental premise that the nation must become energy independent while reducing the carbon footprint is in fact true. The Beshear administration believes it is.