

Chesterfield County Committee on the Future

March 2011

PROVIDING A FIRST CHOICE COMMUNITY THROUGH EXCELLENCE IN PUBLIC SERVICE

COVER DESIGN: JON MAYER

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CHESTERFIELD COUNTY

Committee on the Future

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Wendy Austin · Andrea Brown · Liu-Jen Chu · Ed DeGennaro · Richard Jacobs · Dianne Mallory · James McClellan · Thomas Miller · Thomas Owens

March 15, 2011

The Honorable Members of the Board of Supervisors
Chesterfield County
Chesterfield, VA 23832

Dear Members of the Board:

It is my pleasure to present to you the latest report of the Committee on the Future, *Preparing Residents to Thrive in a Global Society*. In this report, the committee shares its findings on the influences of globalization on Chesterfield County. These include jobs available to the workforce, lifelong learning systems, the role of the metropolitan region and the necessity for technology. The committee offers recommendations and strategies related to lifelong learning as a guide in affecting these influences positively over the next 20 to 30 years.

Many Chesterfield County residents are already aware that we live in a global society supported by a global economy but others are not, and many do not see the huge impact it will have on them in the future. Some residents realize the importance of lifelong learning to compete in a global workforce, to thrive in a global society and to succeed in a technological world; but many do not. This report focuses on investing in human capital, sustaining lifelong learning, producing social capital and ensuring ICT (information, communication and technology) literacy so that all residents will be prepared to thrive - and not just survive - as our world continues to become more interconnected through globalization.

On behalf of the entire committee, thank you for the opportunity to serve the county.

Sincerely,

Edward L. DeGennaro, Chair
Committee on the Future

ACKNOWLEDGEMENTS

Many county officials, organizations, institutions, agencies and individuals assisted the Committee on the Future during this study. The committee thanks those whom it interviewed, those who provided data, and those who attended the many focus groups and public meetings. Because of their contributions, this report reflects the concerns, opinions and observations of Chesterfield County.

The committee is especially grateful to those who prepared presentations informing members of the various issues challenging the county especially those related to globalization and lifelong learning – Marshall Lewis, quality analyst, Center for Organizational Excellence; Bill Handley, former county demographer; Dianne Pettit, Chesterfield County School Board member; Dr. Jim Schroeder, former Chesterfield County School Board member; Joanne Huebner, past president of Chesterfield Public Education Foundation; Lin Corbin-Howerton, former director of school improvement, Chesterfield County Public Schools; Karen Aylward, project manager, Chesterfield Economic Development; Sterling Hening, vice-president, Capital One; Dr. Gary Sarkozi, former director of technology, VCU School of Education; Dr. Dale Kalkofen, former assistant superintendent of instruction, Chesterfield County Public Schools; J. Michael Rose, principal, Chesterfield Technical Center; Lois Stanton, former president, Chesterfield Education Association; Mark Manasco, former director, Greater Richmond Chamber of Commerce Workforce3; Dr. Daniel Arkin, former executive director, Virginia Society for Technology in Education; Randolph Bell, former president, World Affairs Council of Greater Richmond; Donald King, international department chair, McGuireWoods LLP; D. Mark McGonagle, global business manager, DuPont Advanced Fibers Systems; Dr. Jo Lynne DeMary, director, VCU School of Education Center for School Improvement; Donald Cowles, past executive director, Initiatives of Change/Hope in the Cities; Dr. W. Weldon Hill, dean, VSU School of Education; Peter Blake, vice chancellor, Virginia Community College System Work Force Development Services; Dr. Russell Jamison, dean, VCU School of Engineering; Wendy Wellener, director, Human Resources Dominion Generation; Sal Asad, past customer relationship project manager, Federal Reserve IT; Dr. Muhammad Sahli, VCU adjunct professor and retired industrial chemist.

Finally, the members thank David Goode and Rodney Macklin, Chesterfield County public affairs officers, for editing the final draft and preparing the online slide presentation, Kimberly Conley, government affairs coordinator for supplying special assistance to the committee. Committee members Wendy Austin, Edward DeGennaro, Dianne Mallory, Thomas Owens and Dr. James McClellan, undertook the difficult task of reducing the committee's views and findings – made over four years – to a draft of the report. Without the work of these people, the committee could not have produced this report.

The Committee would like to give special recognition to Mary Kruse for her dedicated support and assistance to the Committee on the Future throughout this reporting cycle. Mary's diligent research, thoughtful analysis, writing efforts and overall commitment to quality have been critical to the successful development and publication of this report.

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CHESTERFIELD COUNTY

Committee on the Future members 2006-2011

Bermuda District

Dr. Walter R. Beam, 2006-2007
Ms. Sarah Eastwood, 2006-2007

Mr. Richard Jacobs, 2008-2011
Mr. Thomas Miller, 2008-2011

Clover Hill District

Ms. Dorothy Hudson, 2006-2009

Ms. Liu-Jen Chu, 2006-2011

Dale District

Mr. Edward DeGennaro^{*}, chair, 2006-2007

Mr. Thomas Owens, 2007-2011
Ms. Andrea Brown, 2008-2011

Matoaca District

Mr. Kevin Salminen, 2006-2007

Dr. James McClellan, 2006-2011
Mr. Edward DeGennaro, chair, 2008-2011

Midlothian District

Mr. Reuben J. Waller Jr., 2006-2007

Ms. Dianne Mallory, vice-chair, 2006-2011
Ms. Wendy Austin, 2008-2011

*Mr. DeGennaro moved from Dale District in December 2007; was reappointed in January 2008 to fill a vacancy in Matoaca District.

BOLD denotes current members

PREFACE

Origins, Purpose and Mission of the Committee on the Future

Chesterfield County uses a unique tool to help meet future challenges. The Committee on the Future is a permanent body authorized by the adoption of the 1987 Chesterfield County Charter. It is composed of 10 county residents, two from each of the five magisterial districts. The committee members serve at the pleasure of the Board of Supervisors. Forty-six different residents have been appointed over the course of 22 years. Some have served later as planning commissioners, school board members and county supervisors.

As authorized in the charter, “the committee shall prepare reports and make recommendations concerning changes in governmental structure, revisions to fiscal and land-use planning, and any other matters concerning approaches to meeting the governmental needs of the people of Chesterfield in the future.” The purpose of the committee, as stated in its bylaws, is: “to forecast comprehensive, long-range conditions in the county; to make recommendations for resolution of issues in the long range; to provide information designed to guide elected officials toward a realistic long-range plan for Chesterfield County in the 21st century; and to expand thinking beyond present-day limitations, presenting a view not necessarily bound by what will be, but embracing what can be.”

The directives require the committee to be visionary. Its recommendations provide ideas of what should be done, not necessarily what can be done with current resources. To accomplish these directives, the committee selects topics that will likely impact the county’s quality of life 20, 30 or more years ahead. The committee researches issues related to the topic and prepares reports. There is public representation and input throughout the process. Past reports have focused on human services and development issues.

The reports follow a seven-step study process beginning with selecting a topic and developing a work plan. The topic is thoroughly researched, and the scope of the report is defined. Issues pertinent to the topic are studied further before recommending strategies to address future challenges. The committee presents the preliminary work to county departments, to residents (through constituency meetings in each of the magisterial districts) and to various special interest groups. The final draft of the report is reviewed by county departments and then edited by the committee. Following acceptance by the supervisors, county administration is asked to determine the short- and long-term feasibility of implementing the recommendations and strategies. The committee is required to review all recommendations annually and report the implementation status to the Board of Supervisors.

EXECUTIVE SUMMARY

Globalization is the process by which regional economies, societies and cultures have become integrated through a global network of communication, transportation, and trade; and over the next 20 to 30 years, it will have an increasing effect on Chesterfield County. This report focuses on the importance of transforming the Chesterfield County community into a population that values lifelong learning in order to prosper in a global society.

The research of the Committee on the Future found four areas particularly are being affected by globalization: jobs available to the work force, learning systems, the metropolitan region and a necessity for technology. The common denominator that influences these areas toward positive outcomes is lifelong learning. Lifelong learning promotes the development of knowledge and competences that enables each resident to adapt to the knowledge-based society, taking more control of one's own future.

Jobs available to the workforce

Skills and knowledge must keep pace with the changing global workforce. Rapid changes in job skill requirements call for workers to have the ability to learn and learn quickly. There are few jobs now available for unskilled labor. Today there are 3½ times more jobs requiring technical training than in 1950 and by 2020, eighty percent of middle-income jobs will require some post secondary education.

This report recommends that the county invest in human capital to improve the collective skills and knowledge gained by a worker through education and experience. There is an economic value to our human skills and abilities. Lifelong learning is an individual desire so the committee suggests establishing policies and programs to assist residents in making it a priority. It also will be important to market the value of lifelong learning within the community. There are many initiatives already in existence so it is suggested that the county assess what is available and to whom, then use existing programs and partnerships to provide a global perspective beyond current scale and accessibility.

Learning systems

Lifelong learning begins with a broad-based early childhood education followed by a core curriculum and specialty training to begin a career. Lifelong learning also is about providing “second chances” to update basic skills and offering learning opportunities at more advanced levels. Career adjustments throughout life demand professional development, experiential learning and retraining. Global understanding, learning about problems and issues that cut across national boundaries and about the interconnectedness of systems, increases the value of a person's abilities. Continual learning in a knowledge-based economy is highly dependent on professors, teachers, school administrators and support staff becoming world-class educators. Cultivating the desire to learn is the beginning of encouraging students to be self-teachers.

This report recommends that the county sustain lifelong learning with systems that offer learning opportunities to all residents on an on-going basis. The content of learning, the way learning is accessed, and where it takes place may vary depending on the learner and their learning requirements. New systems can fill gaps and current systems can be made even better.

EXECUTIVE SUMMARY

Refocus what we have around innovation and global understanding at all levels from pre-K to gray. Provide incentives so teachers truly feel accountable. Provide the tools and incentives to maintain educational expertise. Work with current teachers and schools of education to ensure proficiency in instructional material, technology and the changing ways and methods of learning.

The metropolitan region

Communities must be the best places to learn as well as live. Building the region into a learning community strengthens the economy and generates global understanding. Strong metropolitan areas attract research and development institutions that call for a skilled global workforce. The shift toward living in strong learning centers also invites global relationships between metropolitan areas worldwide.

The report recommends that the county support a learning community by producing valuable social capital, the human relationships and supportive networks that sustain the norms of a community. This will strengthen the investments in human capital. Chesterfield County's diverse population demographics can be an opportunity to lead the region in a united goal of being a vibrant learning community recognized throughout the world. Strong social capital ensures a safe and healthy community. Used collectively, opportunities like schooling, libraries and community centers can expand the network of resources that supports residents thriving in a learning community.

Literacy in communication, information and technology

Knowledge is now recognized as the driver of productivity and economic growth leading to a new focus on the role of information, communication and technology. Available information is growing and communication methods are changing rapidly. Technology is everywhere, quickly closing the separation between the physical world and digital devices. Places and objects are now embedded with digital information and linked into various media applications. This necessitates incorporation of more technology into learning environments.

This report recommends that all residents have information, communication and technology literacy. This means having the ability to use the wealth of information and all the latest technology and communication tools to define a need or problem; find, use, and evaluate relevant information; create new information or knowledge; and, be able to communicate this information to others. Make sure technology is as integral a part of the instructional delivery system as it has become an integral part of our lives. Require that faculty be proficient in current widely-used technology as well as that specific to their subject matter. Expand the wireless Internet access to increase applications for lifelong learning. The county is well-connected to its residents, it should now become connected with its residents by transitioning them from informed citizens to interactive networkers.

Recognizing the influences of globalization on Chesterfield County residents and raising awareness of the importance of lifelong learning is the way to prepare them for this highly globalized future. It also is the way to reach the vision of competing in a global workforce, thriving in a global society and succeed in a technological world.

Two major forces, a global demographic explosion and a new world economy, were identified in 2002 by economist and World Bank Vice-President Jean-Francois Rischard as the forces that will change the world in the next couple of decades.¹ He points out the advantage of global reach already held by both business and civil society when stressing the importance of partnerships between the two and thirdly, government.

The Vision for Chesterfield County

This report envisions Chesterfield County in 2030 as a responsible and active partner of the international community where residents enjoy a high quality of life, live harmoniously in an ethnically rich and culturally diverse environment, and prosper in the global economy.

Chesterfield County faces a significant challenge to preserve and enhance the economic and social stability of its residents in a global, knowledge-based economy. This challenge is made more complex by an accelerating rate of change in information and communication technology. The global recession that began in 2008 has profoundly changed the way we live, think and work. The rapid rate at which technology is changing creates a social paradox of bringing people together while simultaneously isolating them from a sense of community.

The purpose of this report is to make recommendations and provide strategies to the Board of Supervisors to help them take a proactive approach toward addressing the challenges and opportunities of living in the global society.

The rapid rate of change brought on, in part, by global interdependence and technology innovations is the reason residents need to embrace lifelong learning. As J.F. Rischard emphasizes, “Education is key to building the sense of global citizenship that global problem-solving requires.”²

Lifelong learning to prepare all residents to thrive in 2030 is the focus of this report. It stresses the importance of transforming the whole community into a population that values lifelong learning in order to prosper in a global society.

¹ Rischard, Jean-Francois. *High Noon: Twenty Global Problems, Twenty Years to Solve Them*. New York NY: Basic Books., 2002. p. 4

² Ibid. p. 102

INTRODUCTION

Globalization is affecting Chesterfield County now and will continue to do so over the next 30 years. It is a process by which regional economies, societies, and cultures have become integrated through a global network of communication, transportation and trade.³ The research of this committee found four areas will be particularly influenced by globalization: jobs available to the work force, education systems, metropolitan region and necessity for technology. The common denominator that will positively influence these areas is lifelong learning for all residents to sustain the county as a FIRST CHOICE community.

Lifelong learning is about acquiring and updating all kinds of abilities, interests, knowledge and qualifications from the preschool years to after retirement.⁴ It promotes the development of knowledge and competences that will enable each resident to adapt to the knowledge-based society and actively participate in all spheres of social and economic life, taking more control of one's own future.

Also, lifelong learning is about valuing all forms of learning, including: formal learning, such as a degree course followed at a university; nonformal learning, such as vocational skills acquired at the workplace; and informal learning, such as intergenerational learning, for example, when parents learn to use technology through their children or learn from friends how to play an instrument.

Lifelong learning is the process necessary to compete on an international scale. The global economy of the 21st century is knowledge based and fueled by a work force possessing the required human capital (skills and knowledge). Supplying the human capital means having a myriad of systems that support lifelong learning including the social capital (relationships and networks) that sustain innovation and creativity.

Learning systems for a global education promote achieving the American dream. Improvement from one generation to the next long has been the standard for quality of life in the United States. The founding of this country and the advent of the industrial revolution brought about for the first time in human history a unique prospect for economic progress—generational betterment. In a nutshell, this is the American dream sought by the founding fathers, the waves of immigrants and refugees who reach this country's borders, and the residents of Chesterfield County, a FIRST CHOICE community. While the American dream is alive and well, global forces and trends are redefining what that dream means to future generations.

³ *Wikipedia*. August 26 2010. <<http://en.wikipedia.org/wiki/Globalization>>

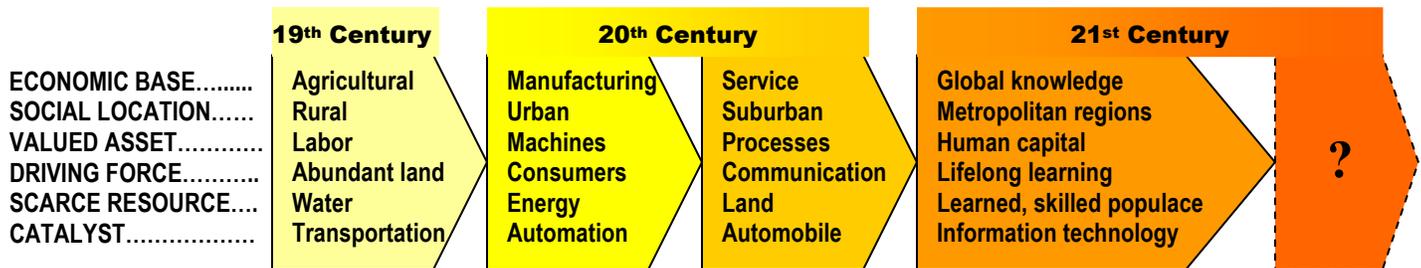
⁴ Harvey, L., 2004–9. August 11 2010. *Analytic Quality Glossary*. Quality Research International. <<http://www.qualityresearchinternational.com/glossary/>>

INTRODUCTION

The graphic below shows how life in America and Chesterfield County has changed over the last 200 years. From a rural agrarian society to urban manufacturing areas to an automobile-driven life in the suburbs, lifelong learning now is the driving force in a knowledge-based economy. The scarce resource of the 21st century is a ready supply of workers with the ability to continue learning and applying ever-changing skills and technologies. Ideally, our systems of education, adult literacy and work force development will

Generating and transporting ideas is the human capital of a global work force. By 2030 a robust local economy that provides the best opportunities for prosperity will be built on generating and transporting ideas. This knowledge-based economy requires early and continual learning throughout every resident’s lifetime. With many countries competing for the production of goods and services, a high-wage paying country like the United States must continuously develop new technologies and applications. A 2008 National Intelligence

HOW LIFE HAS CHANGED OVER 200 YEARS



serve as effective pipelines for producing knowledge workers.⁵ “Knowledge workers in today’s work force are individuals who are valued for their abilities to act and communicate with knowledge within a specific subject area.” It has been said that in this new environment only 2 percent of workers work on the land, 10 percent in industry, and the remaining are knowledge workers.⁶

Council report on global trends states, “By 2025 the United States will find itself as one of a number of important actors, albeit still the most powerful one, on the world stage.”⁷ Chesterfield County residents are seeing themselves redefined as global citizens. Continual learning assures that the buying power of the individual wage earner will increase, that all wage earners who want to work will have employment, and that the local economy will grow.

⁵ Wikipedia. August 26 2010. <http://en.wikipedia.org/wiki/Knowledge_worker>

⁶ Savage, Charles. *Fifth Generation Management*, Second Edition: Dynamic Teaming, Virtual Enterprising and Knowledge Networking <<http://www.amazon.com/Fifth-Generation-Management-Second-Enterprising/dp/0750697016>>

⁷ National Intelligence Council. *Global Trends 2025: A Transformed World*. Washington DC: U.S. Government Printing Office. November 2008. p.xi

INTRODUCTION

Metropolitan areas provide social capital to generate innovation and creativity. The global economy is supported by large regional metropolitan areas where the exchange of ideas flourishes. A 2009 article in the *Atlantic Monthly* stated that the best opportunities for prosperity will be “places ... with the highest velocity of ideas, the highest density of talented and creative people, the highest rate of metabolism ... driven by key urban areas.”⁸ It is the strong metropolitan areas that can best support lifelong learning because they attract and keep talented and creative people, the valued asset of a knowledge-based economy. “Knowledge economies are stimulated and driven by creativity and ingenuity.”⁹

Just as the world is approaching and solving problems differently than it did decades ago, Chesterfield County is finding its future closely aligned with the place the Richmond metropolitan region takes on the global stage and the opportunities presented by the diverse demographics of the population. County residents are interacting with citizens of other countries in many ways. Conference calls are placed with coworkers in Tokyo; many clothing items are made in the countries of Asia, Central America, eastern Europe and northern Africa; service

representatives located in India discuss local U.S. sports scores; social networking routinely connects peers living on other continents; and raw materials mined in Australia are made into automobiles in Japan then shipped by Norwegian freighter for sale on Midlothian Turnpike.

Chesterfield County has opportunities to be a leader in the global economy. Not only do people continue to immigrate to the county, increasingly residents travel, work and live abroad. Diversity brings opportunities to learn and understand different cultures and ethnicities. Thriving in a global society

means living, working, playing and learning with people from other parts of the world.

Literacy in communication technology is vital. Communication in a global environment is fueled by technology. No longer dependent on a few media channels for information, much of the population of the world has the ability to communicate with each other when they choose, where they choose, and on their own devices at faster speeds. To compete in a global economy and thrive in a global society requires a high level of information, communication and technology, or ICT, literacy. Essentially this means an understanding of new technologies and how to generate innovative and creative applications. To assure this competency for all residents, it is imperative that opportunities for lifelong learning be in place.

“For a baby born this year, his future is not going to be only in Chesterfield County; it’s not going to be limited to Richmond or Virginia or the United States. It is going to be anywhere in the world.”

Muhammed Sahli, retired industrial research chemist, DuPont and Allied Chemical

⁸ Florida, Robert. “How the Crash Will Reshape America” in *The Atlantic Monthly*, Vol. 303, No. 2 March 2009, New York NY: Atlantic Media Company, p. 55

⁹ Hargreaves, Andy. *Teaching in the Knowledge Society: Education in the Age of Insecurity*, New York NY: Teachers College Press, 2003, p. 1

INTRODUCTION

In the following report, the committee addresses how to prepare residents to thrive in the global society and economy of 2030 by emphasizing the importance of lifelong learning. Sections of the report focus on job skills and knowledge to compete in a global work force (Global Work Force); systems to sustain lifelong learning (Global Education); networks and relationships to create a lifelong learning environment (Global Relationships); and literacy to communicate globally (Global Communication).

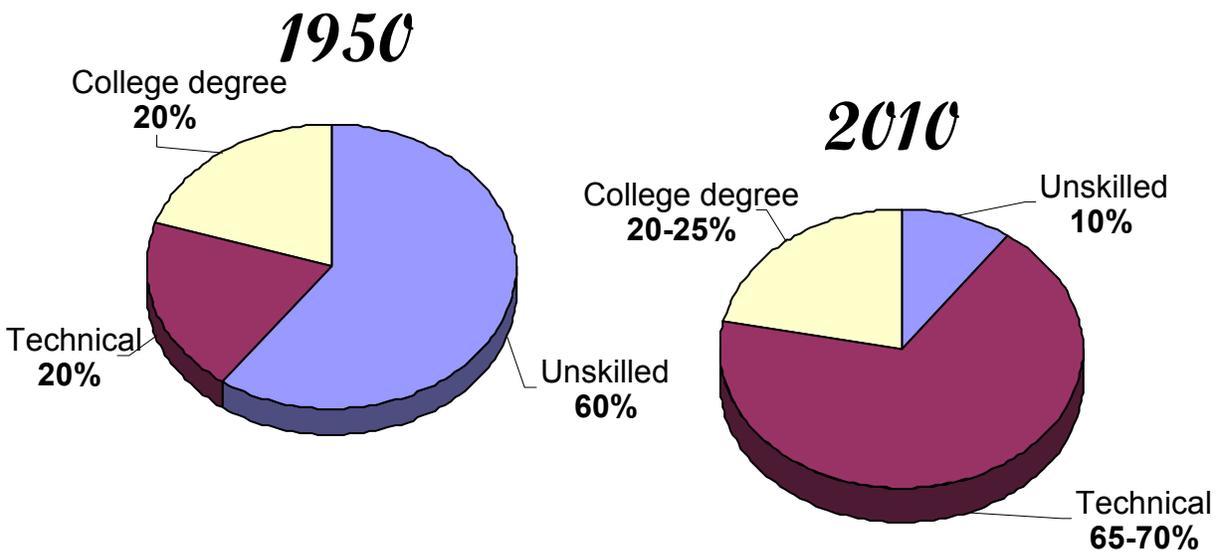
“We will discover along the way to 2030 that every decision we make has to be directly and rationally related to economic development. ...and there are three aspects of that development which I think people will focus on: one is transportation, one is infrastructure and the third is human capital—which pertains directly to education.”

Randolph Bell, World Affairs Council of Greater Richmond and former ambassador and special envoy with the State Department

GLOBAL WORK FORCE

“The best employers the world over will be looking for the most competent, most creative, and most innovative people on the face of the earth and will be willing to pay them top dollar for their services. This will be true not just for the top professionals and managers, but up and down the length and breadth of the work force. Those countries that produce the most important new products and services can capture a premium in world markets that will enable them to pay high wages to their citizens.”¹⁰

Human capital is the economic value of our human capacities. It is “the [collective] skills and knowledge gained by a worker through education and experience”¹¹ that increase that employee’s value in the marketplace. An employee’s skill set must keep pace with the demands of the job market. As illustrated in the graphic below, over a period of 60 years (1950-2010), the percentage of jobs requiring some degree of skills and knowledge changed markedly.¹² In 1950, only 20 percent of U.S. jobs required some technical training. By 2010, that percentage had more than tripled. Conversely, 60 percent of jobs were available to unskilled workers in 1950 but dwindled to only 10 percent of the total U.S. jobs by 2010.



Changes in the Skill Level Required for Jobs in the U.S.

Data Source: U.S. Bureau of Labor Statistics

¹⁰ National Center on Education and the Economy. *Tough Choices or Tough Times: The report of the new commission on the skills of the American Work force*, San Francisco CA: Jossey-Bass, 2007, p. xviii.

¹¹ O’Sullivan, Arthur. Steven M. Sheffrin. *Economics: Principles in action*. Upper Saddleback NJ: Pearson Prentice Hall, 2003, p. 5.

¹² U.S. Department of Labor. October 15, 2010. *Occupational Outlook Handbook*, U.S. Bureau of Labor Statistics <<http://www.bls.gov/oco/home.htm>>

The ability to learn and learn quickly is the sought-after skill in the 21st century work force. As technology and the job market evolve, so do career choices.

Examples of fields that hardly existed 10 years ago include online media journalism, homeland security, nanotechnology, organic agriculture, biotechnology, e-business and e-marketing, computer game design, forensic accounting, and

human computer interaction. This is a trend that is not going away. Today's learner is being prepared for jobs that do not yet exist, requiring technology that has yet to be invented to solve problems that have yet to be realized. What is

important today, and more so in the future, is the fact that it is not enough to be educated; one must be educable. In other words, one must have the curiosity and ability to learn for the rest of one's life.

Lifelong learning sustains knowledge-based economies. Knowledge-based economy is "an expression coined to describe trends in advanced economies toward greater dependence on knowledge, information and higher skill levels, and the increasing need for ready access to all of these by the business and public sectors."¹³

Lifelong learning sustains knowledge-based economic growth through continual

¹³ OECD. May 2009. *The Measurement of Scientific and Technological Activities: Guidelines for Collecting and Interpreting Innovation Data: Oslo Manual, Third Edition*, Paris: Organization for Economic Cooperation and Development, 2005, para. 71. <<http://stats.oecd.org/glossary/>>

improvements in worker skills, i.e., increasing the value of human capital. In a knowledge-based economy, Chesterfield County residents, like those of the entire United States, are facing stronger competition for employment.

The value of human capital is now viewed on a global scale. Employees must match

the educational attainment of their global peers and exceed them in creativity and ability to learn quickly. Until the late 1970s, the United States exceeded every other nation in the percentage of working adults age 25-64 who held high school diplomas.¹⁴

That level of educational attainment is no longer sufficient. Unfortunately, the percentage of the U.S. population graduating from high school has not risen much over the last three decades, while progress in many other countries has met or exceeded that level.¹⁵ Only 66 percent of the Chesterfield County population 25 years and older has some level of post-secondary education.¹⁶ The need for more people with increased skill levels is worldwide and a

¹⁴ Uhalde, Ray and Jeff Strohl, with Zamira Simkins, *America in the Global Economy: A Background Paper for the New Commission on the Skills of the American Work force*, Washington DC: National Center on Education and the Economy, 2006, p. 9.

¹⁵ National Center on Education and the Economy. op.cit. p. 13.

¹⁶ U.S. Census Bureau. October 19, 2010. *2009 The American Community Survey: American Factfinder: Chesterfield County, Virginia, Selected Social Characteristics in the United States: 2009* <<http://www.census.gov/acs/www/>>

GLOBAL WORK FORCE

different demographic is emerging in all levels of the work force.¹⁷

The work force in developed and developing countries such as Brazil, Russia, India and China are becoming more educated. The advances of these emerging nations are tied directly to advances in their educational institutions, particularly in the fields of science and technology. Numerous articles over the last few years state that India, China and other developing countries are producing increasing numbers of young people with top mathematical and analytical skills. The United States still trains more engineers per capita than either China or India, however, the fact remains that competition is rising with more professionals available on the world market in a wide range of fields.

Globalization means stronger competition for wages. Companies are sending workers to, and hiring workers from, many parts of the world. Often, job seekers from other countries will work for less than their American counterparts, especially if businesses relocate to their native lands

where the cost of living and doing business is lower. Experts believe that some businesses do not have a choice; they can either import qualified people or relocate to places where people with the necessary human capital reside. Studies in 28 low-wage countries indicate the number of new young professionals suitable for work with multinational companies is growing annually at a much faster rate than in the United States.¹⁸

Over the next 20-30 years the work force will need lifelong learning to adapt to rapid changes. It has been said that “education, training and health are the most important investments in human capital.”¹⁹ This concept recognizes that the quality of employees can be improved by investing in them. In short, there is an economic value to an employee’s education, experience and abilities. Studies show that the greater the level of competency required, the higher the proportion of more highly educated workers.²⁰ Those in the work force without the needed competencies and skills are seeking opportunities to learn them or falling behind.

¹⁷ Peter Blake, VCCS Work force Development Services. From a presentation to the Committee on the Future. February 25, 2008.

¹⁸ McKinsey Global Institute, October 15, 2009, The Emerging Global Market, June 2005 (3-part series), <<http://www.mckinsey.com/mgi/>>

¹⁹ Becker, Gary S. June 7 2010. *Human Capital*, The Concise Encyclopedia of Economics, Library of Economics and Liberty, <econlib.org/library/Enc/HumanCapital.html>

²⁰ Uhalde, Ray and Jeff Strohl. op. cit. p. 9

RECOMMENDATION 1

Invest in human capital that prepares residents to compete in a global work force.

The committee recommends that Chesterfield County invest in opportunities to improve the skills and training that prepare residents to be part of a global work force. This would reinforce economic growth in the community and assist economic development in bringing more international companies to the area. The following objectives support this important investment in human capital so that by 2030 Chesterfield County residents are ready to compete in a global work force.

OBJECTIVE 1.1
Establish policies and programs that develop lifelong learning and global understanding as priorities for all residents.

First, it is important to establish policies and programs that develop lifelong learning and global understanding as priorities for all residents. The county has long encouraged lifelong learning through the Adult Education program in the county school system, the use of materials and programs at county libraries, and the multitude of courses offered to the public by various other departments, including Parks and Recreation, Mental Health Support Services, Social Services, Public Health, Police and Fire and EMS. The majority of these courses focus on health, safety and welfare issues. The county supports educational institutions that promote professional development for the public and private sector work force. It has partnered with many organizations and nonprofits to bring learning opportunities to the county. The committee applauds these efforts while at the same time noting that lifelong learning still is not a priority for many residents in Chesterfield County.

According to recent census data, one-tenth of county residents over 25 years old do not have a high school diploma, and another 24 percent only have a high school degree or equivalency. That leaves only two-thirds of the population having some level of post-secondary training.²¹ Learning beyond K-12 is necessary, particularly to improve skills and training in a changing work environment.

Educational Attainment For Chesterfield County			
Population 25 years old and older	196,547	100%	
Less than 9th grade	7,336	3.7%	10.5%
9th to 12th grade, no diploma	13,285	6.8%	
High school graduate (includes equivalency)	47,298	24.1%	24.1%
Some college, no degree	44,719	22.8%	
Associate's degree	12,144	6.2%	65.5%
Bachelor's degree	47,201	24.0%	
Graduate or professional degree	24,564	12.5%	

STRATEGY 1.1.1 Form a team of existing leaders representing county government, schools, educational institutions and businesses to recommend policies that continually assess the condition of lifelong learning and global understanding in Chesterfield County.

Part of the process in establishing policies and programs that develop lifelong learning and global understanding is assessing the current level of

²¹ U.S. Census Bureau. op. cit.

opportunities and usage among county residents.

The committee suggests forming a team of existing leaders that represent all areas of lifelong learning and the work force to work together in drafting policies. This includes representatives from county government, schools, libraries, educational institutions and businesses.

The committee advises that the research and findings of this report be used in drafting policies that invest in human capital. During the process of revalidation of county, school and library strategic plans, staff should find more specific ways to prioritize and measure the lifelong learning and global understanding of county residents, particularly the work force. Considering the evolving focus of the public and private work force, any policies that are established must be assessed yearly to determine how well they are meeting the needs and the quality of life issues of the residents.

Economic, demographic and cultural shifts within the population that affect residents' livelihoods may require updates to the policy. Most importantly, this team brings together all aspects of the community to be part of

defining and developing the educational programs. Local and state adult continuing education boards, education advisory councils, work force investment boards and community colleges are all valuable assessment resources.

STRATEGY 1.1.2 Implement procedures aimed at building skills and knowledge about the world and access to lifelong learning.

Once the guiding principles are established in policies, the committee suggests implementing procedures aimed at building skills and knowledge about the world, and access to lifelong learning.

By definition, lifelong learning means “start at an early age and continue through all stages of life.” With more than 85 percent of brain development occurring before the age of 5,²² a stronger emphasis must be put on early childhood education. For example, Smart Beginnings,²³ a joint project of the United Way and Greater

Richmond Chamber, in connection with more than 180 public and private organizations, agencies and businesses, provides tools and support so that every child can be healthy, well-cared-for, and have the skills and experiences needed to succeed in kindergarten and beyond.

“What is needed to position Chesterfield County for the 21st century is a strong leadership aligning the diverse industries, organizations, community groups and professional organizations to share a common purpose.”

Dr. James Schroeder, former Chesterfield County School Board member

Based on the committee’s findings, extending daily and annual time allotted to student learning within innovative K-12 environments is beneficial to accommodating more topics and skill development. This, in turn, serves to increase knowledge retention and reduce the cost of remedial classes. Adult Continuing Education classes are now held 11 months of the year with plans to increase to year-round scheduling.

²² *Smart Beginnings*. June 3 2010.

<http://www.smartbeginnings.org/>

²³ *Ibid.*

Research leads the committee to believe that a longer school year for K-12 classes would set the stage for continuous lifelong learning.

The school system offers international curriculum opportunities to a limited number of high school and middle school students. Foreign-language classes include a broader knowledge of other cultures. Several schools participate in travel and live-abroad exchange programs for students and teachers. The committee advises these programs be expanded, and others like them offered, with a goal to provide global understanding to the entire school population.

Just as an eighth-grade education became inadequate in the 20th century, ending one's education at the 12th grade is becoming inadequate in the 21st century. More jobs require at least the equivalency of two years post-secondary learning. Students and parents must set goals to reach this benchmark. The community has to find more ways to support these goals to achieve higher learning. Scholarship and tuition reimbursement programs are two ways for financial support. Other types of support are also needed. For example, the Wallace Foundation Knowledge Center "offers credible, useful knowledge that can help policymakers, practitioners, researchers and concerned citizens make progress in the fields in which they work. It is at the core of Wallace's effort to share ideas and practices that can help organizations expand opportunities for people."²⁴

Business and industry demand a well-trained work force and realize the benefits of continuous learning opportunities. As the largest employer in Chesterfield County, the local government and school system are no different with regard to their employees. The Center for Organizational Excellence has offered resources to county

departments for almost 20 years. Recognizing excellence in learning opportunities that provide global understanding could be factored into career and employee development programs. It is important that professional development opportunities be encouraged and access to the most beneficial sources be provided.

OBJECTIVE 1.2 **Make all Chesterfield residents aware of the value of lifelong learning and a global perspective.**

The second objective for investing in human capital is making all Chesterfield residents aware of the value of lifelong learning and a global perspective. This will take leadership. Not all residents attach the same importance to learning and global understanding. Its priority varies among cultures and among economic levels within the community. Information must convey that to thrive in a global society means acknowledging the significance of global understanding and to thrive in a global economy means acknowledging the significance of lifelong learning.

STRATEGY 1.2.1 Assess public awareness of the need for lifelong learning in a global economy.

The committee suggests an assessment be made to determine public awareness of the need for lifelong learning in a global economy. This may be done in any number of ways using both technology and face-to-face meetings. Focus groups representing all economic, geographic and cultural demographics in the community could be targeted for feedback. Another example is to include awareness questions on the Citizen

²⁴ The Wallace Foundation. June 4 2010.
<<http://www.wallacefoundation.org>>

Satisfaction Survey and the Business Survey, as both reach a significant sampling of county residents. District community meetings are obvious avenues to disseminate information and to garner feedback about awareness of the value of lifelong learning to thriving in a global society.

STRATEGY 1.2.2 Provide leadership to help all sectors of the community embrace lifelong learning and a global perspective.

Once the scale of awareness has been determined, leadership can focus on filling the gaps. The committee suggests that the county provide the leadership to help all sectors of the community embrace lifelong learning and a global perspective. As the largest employers in the county, government and schools should strive to have their work forces be best-practice examples of a lifelong learning community. After setting this standard, it will be essential for leaders to create a sense of urgency about preparing all residents for competing and thriving in a global world. Interactive technology is one tool available for use to increase global understanding. To support county efforts beyond its borders, leaders ought to convene a regional annual summit to raise awareness of the importance of lifelong learning and education with a global perspective.

**OBJECTIVE 1.3
Strengthen the network of international programs to support a global perspective in lifelong learning.**

The third objective of investing in human capital is to strengthen the network of international programs to support a global perspective in lifelong learning. This objective runs parallel with the second objective (1.2) to raise residents'

awareness of the value of lifelong learning. Ways to increase awareness often include international programs that support a global perspective in lifelong learning.

STRATEGY 1.3.1 Set up an International Learning Center using the county school and library systems.

The committee suggests setting up an International Learning Center using the county school and library systems. Research found numerous programs and activities in the county with a global perspective. The issue is not a lack of international programs, it is their limited scale and availability. For example, few students are served by the international programs offered in the schools and many residents are unaware of other programs offered in the community. A learning center that brings together all available resources and then markets them to the community would strengthen existing programs and foster new ones to build skills and knowledge about the world. It supports the school system's long-range plan for an adult learning center and career development facility. It provides career counselors access to resources and assessment tools to assist individuals in planning post-secondary learning in an ever-changing global society.

STRATEGY 1.3.2 Build international partnerships and exchanges in countries of strategic importance to the Richmond region.

A support network for lifelong learning and a global perspective builds on external relationships as well as internal resources. The committee suggests building international partnerships and exchanges in countries of strategic importance to the Richmond region. The Economic Development department works with the Greater

GLOBAL WORK FORCE

Richmond Partnership building business and industry partnerships with many countries around the world. These relationships might lead to pairing schools with companies doing business abroad or with foreign companies doing business in the county. Similar contacts are possible with area universities matching schools with students studying abroad.

Just as students learn from contact with people and places around the world, members of the work force benefit from professional and personal

international exchanges. Teachers, through train-the-trainer clusters of exchange initiatives, gain first-hand knowledge of the world. Many companies and employees in county departments network with peers in this country and around the world through professional organizations. The committee advises that these practices continue and be encouraged in order to build and sustain ongoing knowledge of the world.

“The role of business in K-12 education can range from coordinating a mentoring program to programs focused on fundamentally improving the school system. Fundamental change is an involved process that requires the commitment of business leaders and the willingness of business and education leaders to work together.”

Sterling Hening, vice-president Capital One

“It is about learning to learn, about becoming independent thinkers and learners. It is about problem solving, teamwork, knowledge of the world, adaptability, and comfort in a global system of technologies, conflict, and complexity. It is about the joy of learning and the pleasure and productivity of using one’s learning in all facets of work and life pursuits.”²⁵

Knowledge workers are the scarce resource of the 21st century. When Peter Drucker first coined the term “knowledge worker” in 1959, he was referring to people in the information technology fields, academic professionals, researchers, lawyers, and scientists. Fifty years later, the employee “who works primarily with information or one who develops and uses knowledge in the workplace,”²⁶ describes a majority of the work force worldwide. A more current definition of knowledge workers is that they are individuals who possess postsecondary educational credentials, technical aptitudes, the ability to learn rapidly, and an entrepreneurial approach to employment.²⁷

Demand for jobs requiring postsecondary credentials continue to increase. Postsecondary educational credentials are not necessarily a bachelor’s degree. Technical aptitudes are part talent, part training and part experience. The ability to learn rapidly is achieved with the assistance of quality education systems that lay a strong foundation early and build on lifelong learning.

“There are huge opportunities and indications to deal with the over-50 population, coming back to increase their skills, perhaps someone who has just been laid off or an industry that has gone overseas—textiles, furniture, tobacco. Other sectors are asking for new employees so there is a real responsibility and opportunity for the non-traditional age of over-50 worker to give them some skills.”

Peter Blake, vice-chancellor, Workforce Development Services, Virginia Community College System

Learning opportunities should be available to all citizens on an ongoing basis. In practice this should mean that residents each have individual learning pathways, suitable to their needs and interests at all stages of their lives. The content of learning, the way learning is accessed, and where it takes place may vary depending on the learner and his or her learning requirements.

Lifelong learning also is about providing “second chances” to update basic skills and offer learning opportunities at more advanced levels. All this means that formal systems of provision need to become much more open and flexible, so that such opportunities truly can be tailored to the needs of the learner or the potential learner.

²⁵ Fullan, Michael. Peter Hill, Carmel Crevola. *Breakthrough*, Thousand Oaks, CA: Corwin Press. 2006. p. 3

²⁶ Drucker, Peter. *Landmarks of Tomorrow*, London: Heinemann. 1959.

²⁷ McCauley, Brian. October 20, 2010. “Ohio’s Career Pathways Program: Workers gain skills to succeed,” *KnowledgeWorks*, <<http://knowledgeworks.org/>>

The potential to thrive in the 21st century is strongly tied to lifelong learning and a global education. Continual learning begins with a broad-based early childhood education followed by a core curriculum and specialty training to begin a career. Career adjustments throughout life bring professional development, experiential learning and retraining. Woven through every stage are the lessons needed to sustain personal and community standards within the framework of a global society. While this process may have been encouraged in prior times, now it is imperative that all ages have access to opportunities for lifelong learning.

Global education has been defined as “learning about those problems and issues which cut across national boundaries and about the interconnectedness of systems— cultural, ecological, economic, political, and technological. Global education also involves learning to understand and appreciate our neighbors who have different cultural backgrounds from ours; to see the world through the eyes and minds of others; and to realize that other people of the world need and want much the same things.”²⁸ Chesterfield County residents have connections reaching beyond county borders and population. Increasing global relationships demand global education systems that prepare residents to thrive personally and professionally within this new environment.

²⁸ Tye, Kenneth A. (ed.). *Global Education: From Thought To Action*. Alexandria, VA: Association for Supervision and Curriculum Development, 1991, p. 5.

“If we want a world-class education system in the United States then we have got to put the “world” in world-class education.”

Dr. Jo Lynn DeMary, director, Center for School Improvement, Virginia Commonwealth University

Education systems must prepare all residents to be lifelong learners. The current vision for instruction, according to the Partnership for 21st Century Skills,²⁹ balances time in core subjects with training in life, learning and thinking skills. All of these areas strive to ensure a competency in information, communication and technology. Underlying this vision are goals of providing updated content in all subject areas and individualized assessments. What the model does not adequately address is the idea that “learners have different motivations to learn, different starting points, different strengths on which to build and different areas of weakness that inhibit learning.”³⁰

Nearly 40 percent of U.S. high school graduates feel unprepared for college or the workplace.³¹ Up to 55 percent of college freshmen entering two-year and four-year institutions are underprepared for college-credit courses and must enroll in remedial courses in reading, writing and math.³² Eighty-four percent of employers say K-12 schools are not doing a good job of preparing students for the workplace.³³ For many decades, the basic premise of school systems has been to provide access for all to a basic education and access for a relatively small elite to university education. To provide

²⁹ *Partnership for 21st Century Skills*. May 14 2007. <<http://www.21stcenturyskills.org/route21/>>

³⁰ Fullan, Michael. ob cit. p. 30.

³¹ Partnership For 21st Century Skills. *Results that Matter: 21st Century Skills and High School Reform*. Tucson, AZ. <www.21stcenturyskills.org> March 2006. p. 5

³² Ibid.

³³ Ibid.

residents with a global education that equips them to be lifelong learners requires a new mission of assuring opportunities to all learners to meet high standards of education.

Early childhood education is a key to success in later life. A preschool policy brief published in April 2006³⁴ highlights the importance of

language and literacy in preparing children to succeed in school.

The authors state, “Early literacy plays a key role in enabling the kind of early learning experiences that research shows are linked with academic

achievement, reduced grade retention [not repeating grade level], higher graduation rates and enhanced productivity in adult life.”³⁵ Other research goes beyond the importance of language, showing that instruction in the first seven years of life is important to acquiring effectively some facets of learning.³⁶ These areas include language, concentration, work attitude, coordination, body parts, counting and colors.

Investing in early childhood education programs also makes good economic sense. In the short term, quality early education is an economic sector whose businesses employ teachers, pay wages, purchase supplies and

generate receipts. In the long term, quality early education has a positive effect on future residents and the future economic picture. A report by the Committee for Economic Development states, “For every dollar spent on preschool, states are projected to recoup 50 to 85 cents in reduced crime costs and 36 to 77 cents in school savings [K-12 education].”³⁷

“It is critical that we get more creative and more advanced with the innovation of technology and focus on those types of areas starting early in elementary school and building up skills on-going through secondary education.”

Wendy Wellner, director, Human Resources, Dominion Generation

Core curriculum must be presented in the innovative and changing ways that information is available. Over the next 25 years, a new generation will mature and enter the work force. This large generation, aptly

named “millennials,” currently make up 36 percent of the national population. Information has been universally available and free to them. Their community is both a digital place of common interest and a shared physical space, for example, online social networking in the midst of a gathering of friends at a pizza parlor. In a recent poll³⁸ 81 percent of youths aged 8-17 believed it is “cool to be smart;” 96 percent said that doing well in school is important to their lives; and 94 percent said they plan to continue their education after high school. As such, it appears youths of today, the core work force of 2030, seem receptive to lifelong learning.

³⁴ Strickland, Dorothy S., Shannon Riley-Ayers. November 2 2009. *Preschool Policy Brief*. Rutgers University NJ: National Institute for Early Education Research. April 2006. Issue 10 <<http://nieer.org/resources/policybriefs/10.pdf>>

³⁵ Ibid. p.1

³⁶ *Audiblox*. November 2 2009. *Early Childhood Education: The Key to Success in Life*. <<http://www.learninginfo.org/early-childhood-education.htm>>

³⁷ Committee for Economic Development, “The Economic Promise of Investing in High-Quality Preschool: Using Early Education to Improve Economic Growth and the Fiscal Sustainability of States and the Nation” Washington, DC: Committee for Economic Development, 2006. p. 1

³⁸ Zogby, John. *The Way We'll Be: The Zogby Report on the Transformation of the American Dream*, New York NY: Random House. 2008.

Lifelong postsecondary training is essential. For students starting a four-year technical or college degree program, half of what they learn in their first year of study will be outdated by their third year of study.³⁹ A person cannot hope to absorb all the knowledge available. A person must become adept at seeking out new information, determining the value of that information and assessing how to use that information.

By 2020, eighty percent of the jobs for U.S. middle-class incomes will require some form of post-secondary education.⁴⁰

According to the Aspen Institute, the supply of U.S. workers with post-secondary education is projected to fall short of that by almost 20 percent. As stated earlier (see page 6), only 66 percent of the Chesterfield County population aged 25 years and older has some level of post-secondary education.⁴¹ If the local work force is not prepared and trained to fill available jobs, there is every indication that businesses will move elsewhere, or bring in workers from outside the region or country.

Adult literacy is a challenge to the local economy. While a majority of the current Chesterfield County work force still will be employed in 2030, the ratio of working age

(15-64 years) adults to seniors (65+ years) is forecast to drop from one senior for every six workers in 2010 to one senior for every three workers in 2030. Some of that gap is being filled by employees immigrating from countries with poorer education systems. These workers need systems to raise basic adult literacy and instill the importance of lifelong learning.

“I am very concerned that as we think about strategies for the global economy we leave behind these segments of the population which are so disenfranchised, so ill-equipped, so unprepared that we end up with a nation that is even more abnormal than it is now.”

*Dr. Russell Jamison, dean, School of Engineering,
Virginia Commonwealth University*

World-class educators are the heart of high-quality school systems.

Continual learning in a knowledge-based economy is highly dependent on educators— professors, teachers, school administrators and support staff for

early childhood education through adult learning. These are the role models, the knowledge seekers, who will lead the way. Much has been said about educational reform and the number of proposed models seems endless. Learning in the 21st century must combine developing and implementing innovative strategies of instruction with individual leadership and a desire to learn. Cultivating the desire to learn is the beginning of encouraging students to be self-teachers.

³⁹ Frisch, Karl. modified by Scott MacLeod and Jeff Brenman. “Did You Know 3.0? Globalization and the Information Age.” (official version) 2009 edition <youtube.com>

⁴⁰ Dr. W. Weldon Hill, Virginia State University School of Education. Presentation to the Committee on the Future. January 14, 2008.

⁴¹ U.S. Census Bureau. ob.cit.

RECOMMENDATION 2

Provide and support systems that sustain lifelong learning and prepare residents to attain global understanding.

The committee recommends that the county provide and support systems that sustain lifelong learning and prepare residents to attain global understanding. These include systems of formal education, adult literacy and work-force development. Two objectives provide the direction to put this recommendation into action.

OBJECTIVE 2.1 Develop and implement systems that refocus education around innovation and global partnerships.

In this first objective, putting an emphasis on developing innovative systems prepares students to rise above current thought and embrace new possibilities. This gives them the competitive edge they will need in the 21st century. Global partnerships are tools to broaden the students' experiences.

STRATEGY 2.1.1 Make lifelong learning and international understanding initiatives a priority when implementing the school system's strategic plan.

The committee suggests that lifelong learning and international understanding initiatives be a priority when implementing the school system's strategic plan. Research shows it is necessary to align and continuously update the Chesterfield County Public School curriculum to ensure all students are prepared to engage in lifelong learning and compete globally. The current strategic plan, Design for Excellence, has a primary goal of academic excellence for all

students. The report findings agree with that goal and suggest systems be in place to ensure students are prepared to carry that excellence forward through a lifetime of learning, not just K-12.

The committee applauds the objectives and strategies defined under the Chesterfield County Public Schools strategic plan, including teaching and assessing global literacy, problem-solving and critical thinking skills in all curricular areas. Curriculum designed around the 21st Century Knowledge and Skills model will develop leaders that value social worth and can create healthy regional and global communities. Research also shows a benefit in using capstone projects⁴² to assess individual development at each grade level. Capstone courses give students the opportunity to showcase their knowledge and demonstrate that they have achieved the goals for learning established by their educational institution. They also provide instructors with a unique way to evaluate student learning.

⁴² capstone by definition is "a final touch; a crowning achievement; a culmination." A capstone project focuses on some feature of a student's learning and requires the disciplined use of skills, methodology, and knowledge taught throughout the curriculum. It encourages students to integrate facets of their current learning with important concepts from related disciplines.

Global partnerships serve to strengthen international studies programs in the schools. Currently, two high schools and one middle school in the county offer curricula from the International Baccalaureate Organization of North America. It is essential that all students have the opportunity to participate in various international programs like the International Baccalaureate program and that coursework be developed with broader global content beyond Eurocentric concepts.

The Organization for Economic Cooperation and Development has been administering the Programme for International Student Assessment (PISA) since 2000. Subsequent assessments have been given every three years and the participation has risen to 62 countries in 2009. Tests are typically administered to between 4,500 and 10,000 students in each country. PISA is an assessment of 15-year-old students' capabilities in reading, mathematics and science literacies. PISA does not focus explicitly on curricular outcomes, but on the application of knowledge and skills in a real-life context. In the U.S., students who participated in PISA 2006 (from 236 schools located in 44 states) scored lower, on average, than their peers in Europe, Japan and Canada on the combined science literacy scale and on each of three science literacy subscales. Participating in some type of international assessment like PISA would provide a benchmark for comparison of Chesterfield County students on a global scale.

“We have to make our young people today more comfortable. The more they are able to problem-solve, to be able to communicate with other countries of the world and other cultures of the world the more comfortable they are going to be in sharing big issues that have to be resolved.”

Dr. Jo Lynn DeMary, director, Center for School Improvement, Virginia Commonwealth University

STRATEGY 2.1.2 Provide world language instruction, pre-K through gray, that achieves comprehension and application competencies.

The committee suggests providing world language instruction for all ages that achieves

comprehension and application competencies. This includes emphasizing world language instruction beginning at the preschool level. Parents and schools should encourage and support children being bilingual by the time they complete elementary level coursework. The findings of the

committee support developing partnerships with higher education institutions and business to provide world-languages instruction and cultural learning experiences for nontraditional students. These partnerships may include opportunities that increase exposure to the interactive use of world languages.

STRATEGY 2.1.3 Identify and implement systems that provide opportunities for instruction to all county residents through school year 14.

The 1993 Committee on the Future report, Economic Development: Strategies for Success, encouraged “...students to complete a two-year program at the Technical Center, followed by a two-year associate degree at an area community college.” The findings of this current report again show the importance of increasing the minimum years of required instruction. The committee

suggests that systems be identified and implemented that provide opportunities for instruction to all county residents through school year 14. Partnerships with colleges and businesses, like the Dual Enrollment Program between Chesterfield County Public Schools and John Tyler Community College, should be expanded to integrate school years 10-14 as a continuum of learning.

STRATEGY 2.1.4 Use new and existing systems to prepare more residents to fill expected skilled-work-force shortages.

The committee suggests using new and existing systems to prepare more residents to fill expected skilled-work-force shortages. Although the career and vocational programs offered in the school system and local colleges attempt to continuously identify, alter or expand opportunities, research shows a need to develop tools, metrics, and accountability models for teaching technical skills. The committee heard from numerous experts on the shortage of qualified graduates in the fields of science, technology, engineering and math. These are the subjects to be stressed in the curriculum over the next 20 years.

Experienced workers are assets and their value increases if a system is in place that assists them to adapt to a changing work environment. As the work force ages, it is important to develop ways to retain and retrain skilled and knowledgeable employees.

STRATEGY 2.1.5 Explore and implement new ways of delivering lifelong learning opportunities to all residents.

Transforming Chesterfield into a learning community requires changes in the delivery of education and alternative methods of instruction. The committee suggests that the county explore and implement new ways of delivering lifelong learning opportunities to all residents. The first objective of the Chesterfield County Public Schools strategic plan is to prepare students to become self-directed learners. This, in turn, asks educators to assume the role of facilitators, rather than disseminators of knowledge. Research has shown success in using project teams as an approach to education.

A vast array of educational opportunities for all age groups using both active and passive methods of delivery means there will be a variety of models rather than the traditional school. The committee found some models benefit from the

use of nontraditional teaching and delivery, e.g. online courses, charter schools, flexible scheduling, community-based schools, home-schooling, multiage classrooms, magnet schools, school-within-a-school, accelerated courses, year-round schedules, service learning,

apprenticeships and on-the-job training.

Chesterfield County Public Schools currently uses, or has used, a number of these alternative methods. It was the first school district in the Richmond region to have a charter school, Chesterfield Community High School. It gave up that status in 2005 citing a need for more flexibility than was provided in the charter

“Teaching can not stay inside Chesterfield County; it must expand and reach around the world and into the classroom. A teacher must be a researcher, an inspirer, an advocate, a guide, and an evaluator.”

*Dr. Gary Sarkozi, former director of technology,
School of Education, Virginia Commonwealth University*

agreement. The committee advises the county to reconsider whether charter schools have value at other levels of learning.

Specialty centers or schools-within-a-school, located at most secondary schools, offer a limited number of students optional academic programs. At least four elementary and one middle school use the Expeditionary Learning model, an inquiry-based approach that strives to make the curriculum more relevant thus encouraging the learner to delve deeper into the subject matter. While applauding these initiatives, the committee highlights the limited scale of these endeavors in reaching all students needing these approaches to learning.

Beyond the K-12 curriculum, a broader spectrum of instructional delivery options is available. Many county departments actively support continuous employee development through cross-training practices, peer-to-peer networking, online instruction, flex-schedules to allow pursuit of degrees, and apprenticeships. The committee encourages all departments to make use of these options under the Employee Skills Development Policy.

To transform an entire county into a learning community, it is paramount that parents, families and other residents join educators as partners in learning. Delivery goes beyond the traditional school structure into other physical access points in the community, e.g., libraries, neighborhood centers, and places of worship. Technology continues to provide ever-changing virtual systems of delivery that increase access to more people and increase the value of limited resources.

OBJECTIVE 2.2 Increase the investment in teachers.

The second objective is to increase the investment in teachers. Ideally, every education system will have the best and brightest instructors. A teacher's ability to set the example of lifelong learning is crucial to maintaining systems that prepare residents to do the same.

STRATEGY 2.2.1 Provide resources to teachers for mastering skills and knowledge about the world.

The committee suggests that teachers be provided the resources to continually update their mastery of subject matter, their technology skills and now, in the 21st century, their knowledge about the world. The resource needs of teachers will change as the curriculum, technology and demographics of the area change. This requires a commitment to continual professional learning on the part of teachers and administrators.

It is important that teachers become, and stay, proficient in instructional technology. Section Four of this report goes into detail about the need for information, communication and technology literacy for all residents. It is crucial that teachers are prepared to set the example and be provided with the tools to use state-of-the-art technology.

Society and technology have worked together in the last couple of decades to significantly change the way young people learn. It is expected that these two influences will continue to transform the delivery of education. The committee findings show that advancements in science concerning brain function have altered previously held theories about when, where and how we learn. Investments in lifelong learning opportunities to

prepare teachers to teach the way young people learn benefit the whole community with more efficient delivery systems and higher achievement outcomes. These investments include developing programs that help teachers and guidance counselors understand the myriad of challenges that affect student access to lifelong learning opportunities.

STRATEGY 2.2.2 Develop incentives for training and mastery of skills and knowledge about the world.

The expectation is that educators set the example of being self-directed learners. The committee suggests developing incentives for educators to

seek training and mastery of skills and knowledge about the world. For example, implement a system of accountability that truly measures the level of proficiency with technology tools, subject matter being covered, and its relevance in a global society.

Recognition and rewards can increase the quality and caliber of faculty and staff employed in systems that refocus education around innovation and global partnerships. Accountability measures for educators and administrators are often solely tied to student achievement. More importantly, these measures must also test for competent and effective teachers by assessing continuous improvement in knowledge of subject matter and its relationship to the global environment.

“It is not that the young people cannot learn in new and different ways in the global society but they cannot until we prepare the teachers who understand how to use that technology in new and different ways and teach them to apply that way.”

Dr. Jo Lynn DeMary, director, Center for School Improvement, Virginia Commonwealth University

GLOBAL RELATIONSHIPS

Social capital -- “the human relationships and supportive networks that enrich the cognitive and social development of children and sustain the norms of a good community.”⁴³

Investments in human capital are strengthened by strong social capital. Social capital measures the degree of engagement and unity within a community. It refers to the relationships between people that establish networks, norms and social trust. These relationships facilitate coordination and cooperation to solve common problems. These partnerships and networks can be the conduit that supports lifelong learning communities.

The success of a knowledge-based economy is based, in large part, on relationships that bring forth a vibrant exchange of ideas. “The jostling of many different professions and different types of people, all in a dense environment, is an essential spur to innovation—to the creation of things that are truly new.”⁴⁴ The potentially strong economy and work force of Chesterfield County in 2030 will be centered on a lifelong learning community for Chesterfield residents. Lifelong learning in a global economy must include a focus on the global society and the social capital within a community.



Richmond Metropolitan Statistical Area

Communities are striving to become learning centers to thrive in a global society. They must be the best places to learn not just live. Increasing numbers of people in the United States, and worldwide, are moving toward regional metropolitan areas because that is where the exchange of ideas flourish. This shift toward living in strong learning centers invites global relationships between metropolitan areas throughout the world. At the same time, global relationships are growing within communities as they derive opportunities from the changing face of the population. Chesterfield County must capitalize on its geographic location, its rising demographic diversity and its existing quality standards, to become a strong learning center that attracts additional knowledge workers from around the world while retaining its best and brightest.

⁴³ Grant, Gerald. *Hope and despair in the American city: Why there are no bad schools in Raleigh*. Cambridge, MA: Harvard University Press. 2009. p. 43

⁴⁴ Florida, Richard. ob.cit. p. 49

GLOBAL RELATIONSHIPS

The economic value of Chesterfield County comes from increasing social and human capital within the Richmond Region.

Population density and diversity in large metropolitan areas provide concentrations of differing economic clusters. These sustain the economy over the long term. They attract research and development institutions that require a skilled work force. They also offer arts and entertainment that support and encourage the quality of life to retain highly creative people. According to a recent report from The Brookings Institution, “to prosper, our nation must leverage four key assets—innovation, human capital, quality places, infrastructure—that principally concentrate in metropolitan areas.”⁴⁵ Vibrant exchanges of ideas become the fuel for innovation and

“I think if we have any advantages as a country it is that we are rich in diversity and willingness to integrate those differences in ways that other countries may have a more difficult time doing.”

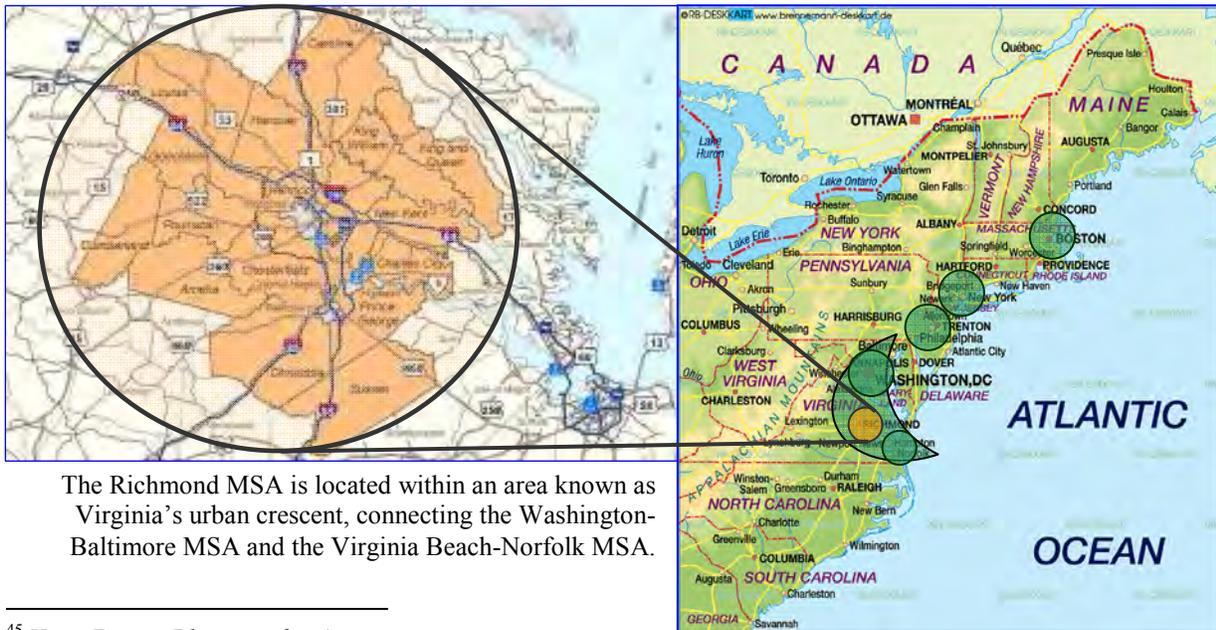
Dr. Russell Jamison, dean, School of Engineering, Virginia Commonwealth University

creativity to solve problems on a regional and global scale.

The Richmond metropolitan statistical area, or MSA, which includes Chesterfield County and 19 other jurisdictions, ranked 46th in population size of the 363 MSAs identified in the 2000 U.S. Census. Population estimates

for 2009 raise the Richmond MSA ranking to 43rd in the nation. More importantly, the Richmond MSA is located within an area known as Virginia’s urban crescent connecting the Washington-

Baltimore MSA and the Virginia Beach-Norfolk MSA. The world’s 40 largest mega-regions produce two-thirds of global economic output and nearly nine in 10 new patented innovations.⁴⁶ Four of the world’s 75



The Richmond MSA is located within an area known as Virginia’s urban crescent, connecting the Washington-Baltimore MSA and the Virginia Beach-Norfolk MSA.

⁴⁵ Katz, Bruce. *Blueprint for American Prosperity: Unleashing the Potential of a Metropolitan Nation*. Washington DC: The Brookings Institution. 2007. p. 17

⁴⁶ Florida, Robert. ob.cit. p. 50

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largest mega-regions, Boston, New York, Philadelphia and Washington, D.C., are located along the East Coast.

Regions must strengthen their global identification just as their residents are increasingly viewing their citizenship within a global context. There is often a perception both inside and outside the region that the Richmond MSA is a small-to-midsize community when in reality it is larger than New Orleans, Raleigh, Salt Lake City or Buffalo.

Some MSAs already have a global focus. For example, Charlotte, N.C., ranked 33th MSA in 2009 population estimates, uses an aggressive marketing approach to attract global partners. Planning strategically, they identify themselves as Charlotte USA. Considering how few people know the name of the state, territory or province of foreign cities, it makes sense for communities with a metropolitan area to collaborate and simplify their name when using it outside the country. “In newly created, substantively focused combinations, the prominence of our nation's parts can be even more extraordinary than it is today. In new groupings, their strengths can be combined to form identities that can compete—and even dominate—globally.”⁴⁷

The economies and societies of countries around the world are increasingly interconnected. The committee heard from several presenters who said human capital does not respect political or jurisdictional boundaries. Economic development organizations like the Chesterfield County Economic Development Department, the Greater Richmond Partnership and local chambers of commerce have promoted

communities within the Richmond metropolitan area as one geographic location for many years. More than 140 foreign-affiliated firms have more than 170 facilities in greater Richmond. Yet the committee heard much concern expressed that the population is not prepared to fully engage and benefit from a global economy, in part because it lacks the human and social capital necessary for global approaches and collaborations.

RANK	METROPOLITAN STATISTICAL AREA	2009 POPULATION
20	Baltimore-Towson, MD	2690886
21	Denver-Aurora, CO /1	2552195
22	Pittsburgh, PA	2354957
23	Portland-Vancouver-Beaverton, OR-WA	2241841
24	Cincinnati-Middletown, OH-KY-IN	2171896
25	Sacramento--Arden-Arcade--Roseville, CA	2127355
26	Cleveland-Elyria-Mentor, OH	2091286
27	Orlando-Kissimmee, FL	2082421
28	San Antonio, TX	2072128
29	Kansas City, MO-KS	2067585
30	Las Vegas-Paradise, NV	1902834
31	San Jose-Sunnyvale-Santa Clara, CA	1839700
32	Columbus, OH	1801848
33	Charlotte-Gastonia-Concord, NC-SC	1745524
34	Indianapolis-Carmel, IN	1743658
35	Austin-Round Rock, TX	1705075
36	Virginia Beach-Norfolk-Newport News, VA-NC	1674498
37	Providence-New Bedford-Fall River, RI-MA	1600642
38	Nashville-Davidson--Murfreesboro--Franklin, TN	1582264
39	Milwaukee-Waukesha-West Allis, WI	1559667
40	Jacksonville, FL	1328144
41	Memphis, TN-MS-AR	1304926
42	Louisville/Jefferson County, KY-IN	1258577
43	Richmond, VA	1238187
44	Oklahoma City, OK	1227278
45	Hartford-West Hartford-East Hartford, CT	1195998
46	New Orleans-Metairie-Kenner, LA	1189981
47	Birmingham-Hoover, AL	1131070
48	Salt Lake City, UT	1130293
49	Raleigh-Cary, NC	1125827
50	Buffalo-Niagara Falls, NY	1123804

Relationships within the region can be the foundation for global understanding. Increasing international travel, advancing technology, job relocations outside this country and a rise in the number and diversity of immigrants are transforming residents’ awareness of other cultures and languages other than English. This country, including Chesterfield County, has seen waves of immigrants assimilate into the white, English-speaking majority, usually within one generation. Today, that model is being

⁴⁷ Miller, Henry. “The Shift to Global Identity Economics” Huffington Post, September 24 2008 <<http://www.huffingtonpost.com>>

remade in the spirit of multiethnic, multicolored diversity, “which no longer aspires toward a single iconic image of style or class.”⁴⁸ Census projections predict a 48 percent increase in the U.S. population from 2005 to 2050, with 82 percent of that increase due to immigrants and their U.S.-born descendants.

The region can invest in existing strong learning institutions. One area where the United States has an overwhelming advantage is the field of higher education. Study conclusions differ slightly but all agree that this

country, with only 5 percent of the world’s population, has the majority of the world’s top universities—seven or eight of the top 10 and 68 percent of the top 50.⁴⁹ The Richmond area has many major institutions of higher education, including Virginia Commonwealth University, University of Richmond, Virginia Union University, Virginia State University, Richard Bland College, John Tyler Community College, J. Sargeant Reynolds Community College and more, including technical institutes and online degree programs. These learning institutions, with campuses and exchange programs in other countries, provide opportunities to build social capital from global relationships.

“The integration of employment and education is one of the biggest issues facing the Richmond region. A regional approach is necessary because human capital knows no political or jurisdictional boundaries.”

Mark Manasco, former director, Workforce3, Greater Richmond Chamber of Commerce

Chesterfield County’s diverse population demographics can be an opportunity to prepare residents to thrive in a global society. Over the last 30 years, there has been a shift in the origins of immigrants to this country with fewer from Europe and Canada and more from Latin America and Asia. The generation that will enter the work force over the next 10

to 20 years is more ethnically diverse than previous generations. One in five has one immigrant parent and one in 10 has one non-citizen parent.⁵⁰ In Chesterfield County schools, there is a 53 percent chance that two students picked at random will

be of different ethnic groups.⁵¹ One fifth of the school children have immigrant parents. Twenty-two percent of the 2009 work force of Chesterfield County government identified themselves in the category “racial or ethnic minority.”⁵²

To illustrate this shift in origins, the July 2008 American Community Survey estimates Chesterfield County’s Hispanic population rose 135 percent over the figures recorded in the 2000 census. Hispanic residents now make up nearly 6 percent of the county population. While in 1990 only 5 percent of Virginia’s population was foreign-born, the

⁴⁸ Hsu, Hua. “State of the Union: The End of White America?” in *The Atlantic Monthly*, Vol.303, No. 1. January/February 2009, New York NY: Atlantic Media Company, p. 50.

⁴⁹ Zakaria, Fareed. “The Future of American Power” in *Foreign Affairs*, Vol. 87, No. 3. May/June 2008, New York NY: Council on Foreign Relations, p. 5

⁵⁰ Howe, Neil and William Strauss. *Millennials Rising: The Next Great Generation*. New York: Vintage Books. 2000. p. 15

⁵¹ The New York Times “Diversity in the Classroom: Chesterfield County” from the series *Remade in America: the newest immigrants and their impact*. March 20, 2009.

<<http://projects.nytimes.com/immigration/enrollment>>

⁵² Chesterfield County Diversity Advisory Committee “19th Annual Report” 2009, p. 2

proportion increased to 8 percent in 2000 and to 10 percent by 2005.⁵³ In addition to immigrants, refugees relocate to this country and in increasing numbers to this region. Currently, Virginia ranks 12th among the states in number of refugee resettlements. The majority of people (72 percent) in the 2010 Virginia resettlements are natives of Iraq, Bhutan, Iran, Ethiopia and Afghanistan.⁵⁴

Learning and exchange opportunities arise from more bilingual, multicultural residents. The committee's research indicates that the English language will remain the dominant form of communication for international business transactions and interaction between groups of people from varying backgrounds. Immigrants still assimilate into the U.S. culture and learn the English language. However, this nation continues to move closer to having no clear race or ethnic majority. There is more interest in being recognized as global citizens.⁵⁵ Groups currently categorized as minorities—those who identify themselves as Hispanic, black, Asian, American Indian, Native Hawaiian, Pacific Islander or mixed race—will increase to the degree that non-Hispanic whites will also be a minority of the U.S. population by the year 2042.⁵⁶ Among children, the demographic change will occur even sooner, by 2023. It has been said that “no other nation in history has gone through

demographic change of this magnitude in so short a time.”⁵⁷ And this change goes beyond distinctions of race or ethnicity. Rising minorities bring stronger awareness of the diversity of language, culture and ethnic values. Without the presence of a majority race or ethnicity in the U.S. population, immigrants more likely will choose to retain their native languages and other ethnic characteristics, and pass them on to future generations as second languages.

Interestingly, the fastest growing minority in this country is the group who identifies itself as multi-racial, multi-cultural.

The United States is rich in diversity and willingness to integrate differences in ways that other countries may have a difficult time doing. For example, at Harrisonburg High School in the Shenandoah Valley, more than 90 languages are spoken by a student body from varied backgrounds. In Chesterfield County, Meadowbrook High School has a student body representing 50 countries and 35 languages. The multiplicity of Chesterfield County's population can be used as an aid in teaching global understanding.

Strong social capital facilitates coordination and cooperation to resolve global issues. Awareness of the interdependence of global relationships is an important step in building the social capital of the region. Some of the effects of these interrelationships can be seen, for example, in the current economic recession, flu pandemic and global environmental crises. Improved mobility introduces both opportunities and challenges to the health, safety and welfare of county residents. Increased competition for natural and man-made resources strains

⁵³ *Demographic Profile of Virginia*. Charlottesville VA : Weldon Cooper Center for Public Service, October 20 2006 p. 22

⁵⁴ Virginia Office of Newcomer Services, Virginia Department of Social Services and Office of Refugee Resettlement Refugee, U.S. Department of Health and Human Services

⁵⁵ From an informal survey of 71 people aged 13 to 90 only seven percent were unable to define the term ‘global citizen.’

⁵⁶ *america.gov*. August 20 2008. “U.S. Minorities Will Be the Majority by 2042, Census Bureau Says” <<http://www.america.gov>>

⁵⁷ Clinton, Bill. *The American Presidency Project*. Graduation address at Portland State University, Portland, Oregon. June 13 1998. <<http://www.presidency.ucsb.edu>>

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consumer budgets. Sharing energy, food and water resources on a global scale become personal quality of life issues. Determining the most cost-effective sources of new energy alternatives or good healthcare and nutrition are not easy when global competition causes price fluctuations and products are manufactured in foreign countries. “Thinking

globally, acting locally” is the foundation of global citizenship and the ability to compete and thrive in a global society. Lifelong learning is needed to address these challenges, including potential health and safety problems, usage of limited resources, and worries about the consequences of climate change.

“I think that education plays a very significant role in teaching us about diversity, about different global cultures, economy and how to deal with conflict in the world...even at the global level.”

Sal Asad, retired Customer Relationship Account Manager, Federal Reserve Information Technology

RECOMMENDATION 3

Foster relationships that produce social capital to prepare residents to thrive in a global society.

The committee recommends that the county foster relationships that produce social capital to prepare residents to thrive in a global society. These include local and global networks to sustain Chesterfield County as a FIRST CHOICE community. Three objectives support this recommendation.

OBJECTIVE 3.1
Become a leader in uniting the metro area.

The first objective is to become a leader in uniting the metro area. Strong local relationships support development of the Richmond region as an important presence on the world stage. A united region increases the amount and types of social capital available to county residents to prepare

them to thrive in a global society. The county strategic plan, as recently as 2005, included the goal “to be a unifying leader of local government.” The committee recommends that this goal be reinstated in future validations of the county’s strategic plan.

STRATEGY 3.1.1 Have Chesterfield lead the region in becoming recognized as a center for innovation.

Power centers of the future will be strong regional areas that are developing as vibrant learning communities. The committee suggests that Chesterfield lead the region in becoming recognized as a center for innovation. Many initiatives exist that lend themselves to this recognition, including excellent public school systems and distinguished institutions of research and higher learning. Used collectively, these opportunities will expand the network of social capital that supports residents thriving in a learning community.

A center of innovation by definition engages a dynamic community to ignite and support new ideas. Research shows public school systems are catalysts that spark this engagement. Leaders of the 15 Region 1 school districts in Central Virginia meet to exchange ideas and resources. These leaders can become the foundation for developing a united goal of being a regional learning community.

extracted from the 2003-2005 Chesterfield County Strategic Plan document:

Goal 5 To Be a Unifying Leader of Local Government
Experience has taught us that local governments work best when they cooperate to enhance the quality of life regionally. We recognize Chesterfield County’s responsibility to further the success and well-being of the region. We are a leader in defining regional issues and setting legislative priorities. We work with other localities to build regional successes...
Through such efforts, we demonstrate the continuing value of strong regional governmental relationships in shaping the Richmond/Tri-Cities region as a premier location on the East Coast.

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STRATEGY 3.1.2 Strengthen the regional partnerships designed to develop educational programs with a global focus.

Growing influence from the rest of the world means adding a global focus to lifelong learning opportunities. The committee suggests that the county strengthen its regional partnerships designed to develop educational programs with a global focus. This can be advanced through continuing the collaboration efforts of Region 1 school boards and division leadership teams. They should also consider working with the State Board of Education and institutions of higher learning to create a state policy that develops educational programs with a global focus. The goal would be to establish the region as a model for educational programs with a global focus.

STRATEGY 3.1.3 Ensure all students in the metropolitan region have equal access to curricula that prepare them to thrive in a global society.

A learning community is measured by its value to each resident. The committee suggests that all students in the metropolitan region be ensured equal access to curriculum that prepares them to thrive in a global society. Collaboration between and among area school boards concerning professional development opportunities would benefit teachers and students alike.

An annual event known as the Ten Square initiative has provided a forum for leaders of county schools to showcase strategies that have helped them achieve high SOL test scores. Schools within the region have been invited to participate as well. This is an opportunity for exchange of successful ideas.

STRATEGY 3.1.4 Search for ways to connect resources into regional systems that support lifelong learning.

Social capital networks include interrelated physical resources. The committee suggests searching for ways to connect resources into regional systems that support lifelong learning. Public libraries are one of the greatest resources a learning community can have. One way to do this is to evolve public libraries into a regional system of community centers where learners of all ages access highly skilled staff, learning materials and innovative services. These physical and virtual facilities can then become the gathering places for exchange of vibrant ideas.

Other gathering areas exist throughout the county. For example, places of worship, neighborhood associations and county-built facilities are used for classes and events for all age groups. In cooperation with surrounding jurisdictions, these existing community centers could be refocused into a regional system of learning centers.

The Richmond region is home to a number of cultural centers including the proposed Chester Arts Center. Business parks and retail shopping centers often provide space and resources for learning opportunities. One way to do this is to evolve cultural centers and business centers into regional resource centers that support lifelong learning and a global education.

OBJECTIVE 3.2 Utilize the demographic and cultural diversity in the regional population.

The second objective to foster relationships that produce social capital is to use the demographic and cultural diversity in the regional population. Richmond is identified for many reasons by

national organizations as a favorable area for relocation of refugees and immigrants. This is an opportunity for a learning community seeking to thrive in a global society.

STRATEGY 3.2.1 Develop programs that help residents gain international understanding and work cooperatively to maximize the returns of operating in a worldwide community.

Many residents have never known any culture other than their own. The committee suggests that programs be developed that help residents gain international understanding and work cooperatively to maximize the returns of operating in a worldwide community. Part of the county’s public-awareness needs assessment (discussed in the first section of this report) could identify the differences and talents within the community.

The committee found many volunteer groups willing to share information about their cultures and backgrounds. After identifying talents and differences, the community can capitalize and expand awareness of these efforts.

The committee realizes both long-time residents and those new to this country and county lack understanding of each other. Once gaps are identified, programs to educate newcomers about our history, laws and customs can be developed. At the same time, current residents can participate in cross-cultural activities that raise awareness of differences.

STRATEGY 3.2.2 Collaborate on regional initiatives to promote the benefits of diversity.

Richmond has sometimes been called the “City of Festivals.” These events often highlight a particular culture or continent of the world

lending themselves to being marketed as learning experiences. The committee suggests collaboration on regional initiatives to promote the benefits of diversity. One way to do this is develop and distribute material that lays out the diverse nature of our regional population. Another is for the region to sponsor an annual event that focuses on global cooperation among different cultures. These are opportunities to highlight what each culture has to offer to the area and what role they play in the local and global economies.

**Objective 3.3
Lead the region to work cooperatively toward global recognition.**

The third objective fostering relationships that produce social capital is to lead the region in working cooperatively toward global recognition. Through discussions contributing to this study, the committee learned of many facts, programs and events that set the Richmond area apart as a global community. Many of these are tied to Chesterfield County, so it seems natural that this county bring the jurisdictions together to promote area assets to the world.

STRATEGY 3.3.1 Market the Richmond metropolitan area, which includes Chesterfield County, as a global destination.

The committee suggests that the Richmond metropolitan area, which includes Chesterfield County, be marketed as a global destination. The Greater Richmond Partnership works with economic development groups throughout the region. In seeking global recognition of the region, jurisdictions must strive to collaborate with regional economic-development groups rather than compete.

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Consideration could be given to branding the region as a whole, similar to the way Cincinnati and Charlotte market themselves to the world. These inner cities and surrounding areas combine their efforts to present a united image to the world. In turn they share the benefits.

STRATEGY 3.3.2 Continue to seek innovative ways of strengthening the region’s economic base at the international level.

This report recognizes the Chesterfield Economic Development department’s efforts and those of regional organizations to bring businesses and

industry to the area. The committee suggests these entities continue to seek innovative ways to strengthen the region’s economic base at the international level. Specifically, efforts must continue to bring international knowledge-based corporations to the county in support of the Richmond region as a vibrant learning community.

Much like a small business resource center, an international-business resource center would benefit the county’s economy. It could function within county operations to assist companies wanting to expand business abroad or foreign companies wanting to offer goods and services here.

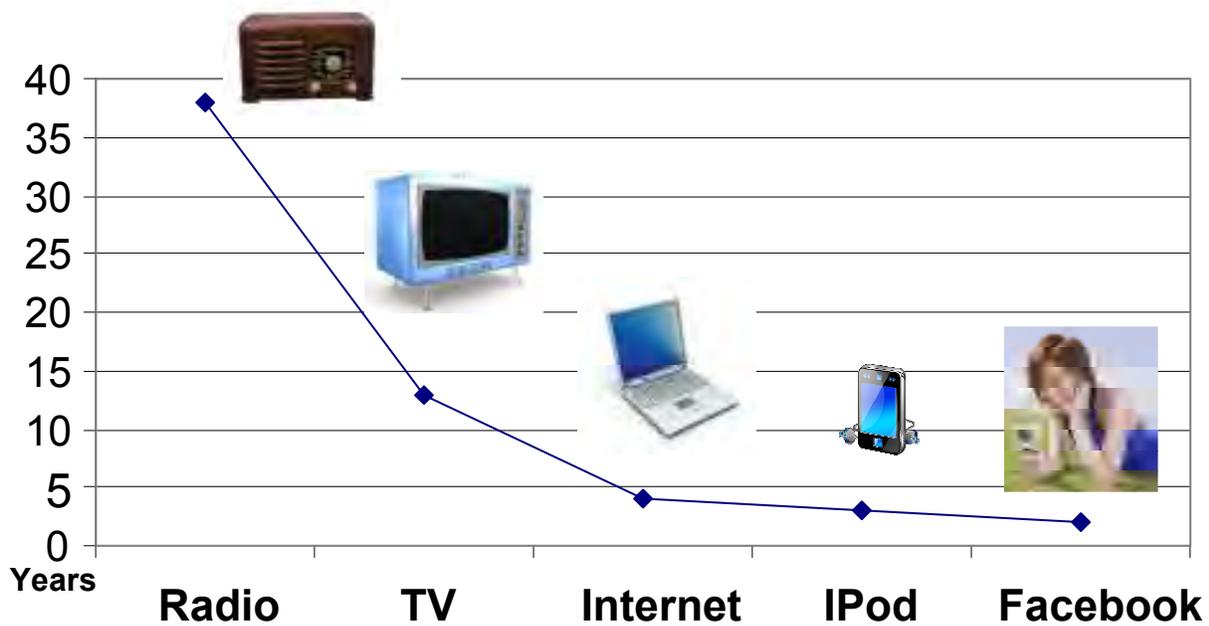
“If I were going to do one thing to improve on education I would focus on activities and programs and trips and whatever—exchanges to help the American student become more comfortable with the rest of the world.”

Donald King, international lawyer with McGuireWoods LLP

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Literacy in information, communication and technology, or ICT literacy, must be achieved by all residents to compete in a global economy and thrive in a global society. Knowledge is now recognized as the driver of productivity and economic growth, leading to a new focus on the role of information, technology and learning in economic performance.⁵⁸ ICT literacy is defined as “the ability to use digital technology, communication tools, and networks to define an information need, access, manage, integrate and evaluate information, create new information or knowledge, and be able to communicate this information to others.”⁵⁹

Time needed to reach 50 million people



The rate of change in technology is so rapid that the amount of available information grows exponentially. Communication methods are changing social and professional networks. Technology is in every aspect of human culture and will continue so that the borderline between the biological and the technological will become less distinct. Chesterfield County government and residents must be able to process information quickly, communicate effectively in a global manner, and adapt to continuous transmission of new technology in order to support a knowledge-based economy.

⁵⁸ OECD. October 20 2010. “The Knowledge-Based Economy.” Paris: Organization for Economic Cooperation and Development. 1996. <<http://www.oecd.org/>>

⁵⁹ International ICT Literacy Panel. August 18 2004. *Digital transformation: A framework for ICT literacy* International ICT Literacy Panel. Princeton, NJ: Educational Testing Service. 2002. <<http://www.ets.org>>

Increasing amounts of available information present challenges and opportunities for innovative learning.

In the past, a person might have set a goal of reading all existing books within their lifetimes. Now, the value of time and the sheer volume of information require an ability to know how and where to retrieve material, and more importantly, why it is needed and what it might provide. For example, there are more than 31 billion searches performed on Google each month.⁶⁰ In the 21st century, a knowledgeable person is called upon to make data-driven decisions that are defined by the relevancy, rather than the quantity, of the material they have read. The priority of education is to teach people to be educable, not just educated.

The mainstream work force in 2030, the generation about to enter the job market, seems receptive to learning. What young people in our society may not realize is the importance of doing well academically beyond K-12, and even post-secondary training. The abundance of data being given to people requires continual learning to process and use it as worthwhile information.

The increased amount of available data is directly proportional to the increased number of sources generating that information. Points of distribution are not limited to local or national sources but now include a global network to receive and transmit information with other parts of the world. Classrooms and workplaces are becoming learning environments that share information with counterparts around the globe.

The rate of change in communication methods is increasing. The graph on the previous page illustrates the number of years it took various technologies to reach a market audience of 50 million people.

⁶⁰ Frisch, Karl. op.cit.

DID YOU KNOW?

- It is estimated that a week's worth of New York Times contains more information than a person was likely to come across in a lifetime in the 18th century.
- There are about 540,000 words in the English language; about five times as many as in Shakespeare's time.
- It is estimated that the amount of unique new information generated worldwide this year will be more than in the previous 5000 years.
- The amount of new technology information is doubling every two years. For students starting a four-year technical or college degree this means that – half of what they learn in their first year of study will be outdated by their third year of study. It is predicted to double every 72 hours by 2010!

Frisch, Karl, Scott MacLeod, Jeff Brenham.
"Did You Know? 3.0" 2009 edition

Communication methods are changing our social and professional networks. Almost three-quarters of American adults use the Internet at home.⁶¹ One of every five couples married in the U.S. met online.⁶² Facebook, the social-networking website launched in February 2004, had more than 500 million active users in July 2010.⁶³

Technology continues to change work force demand. While the new generation seems prepared for entry into an information and technology dependent world, are they

⁶¹ Zogby, John. op.cit.

⁶² Frisch, Karl. op.cit.

⁶³ Facebook. July 2010. <www.facebook.com>

prepared to continuously learn to address the magnitude of information available and rate of change in technology over the course of their lifetimes? How is the current work force adapting to continuous change? Consider a few examples of once highly demanded communication jobs that are now declining or extinct, at least in North America and Europe: typesetting, secretarial dictation, IBM punch card operator, telephone operators, drafting technicians. Advances in communication such as shareware, open-sourcing, out-sourcing and other processes are changing the way the world does business.

The rate of change and method of

communication affects learning. The ability to have information quickly provides faster avenues for action. This speeds up the exchange of ideas among ad hoc groups, initiates communities of action using interactive media, and engages nonlearners. Previous education reform produced an education system that realizes the value of having every resident able to communicate through reading and writing. The reform also broke down barriers that prevented a large portion of the populace from benefiting from the effect of a good education. The committee heard from numerous presenters who stated that the existence of a core curriculum is as important as ever, however, the methods of communication are constantly evolving. Those differences must be incorporated into the learning environment in order for the populace to continue to benefit.

No longer dependent for information from a small number of conventional media channels, the global population has the ability

to choose from a broad array of fact or fiction quickly. The Internet, as no other communication medium, has given an international dimension to the world. The Internet has become the universal source of information for millions of people at home, at school and at work. While less than one-half of 1 percent of the world's population were Internet users in 1995, almost 30 percent of

the global population currently uses this form of communication.⁶⁴

Technology provides boundless opportunities to form subcultures around common interests. It often is the cause of unifying strongly held opinions around core educational issues, polarization of key

values that set in motion major disruptions, or success in delivery of needed reforms through better communication. Whatever the outcome, the sheer magnitude of information reinforces the need for critical thinking skills to make sound judgment calls and data-driven decisions.

The use of technology is expanding into all areas of life. The separation between the physical world and digital devices is quickly closing. Places and objects are now embedded with digital information and linked into various media applications. This offers opportunities for learning with animated, responsive environments and immersive media in schools, businesses and communities. Educators use world-building, alternate-reality games like Sims™ and other forms of digital role-playing to develop new methods of teaching. Sensor-based

“When you look at the kids today walking into school they are all hooked up. They’ve got the things in their ears, on their belts and all over the place but before they go in they have to unhook all that stuff and they put the technology away.”

Dr. Jo Lynn DeMary, director, Center for School Improvement, Virginia Commonwealth University

⁶⁴ *Internet World Stats*. October 21 2010. <<http://www.internetworldstats.com>>

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technologies track gas and electricity consumption and manage logistics in order to monitor the environments of daily life including homes, workplaces and schools. Sensors and global tracking devices capture a visual “data picture” of a person’s life. It requires continuous learning to stay current both in the workplace and in daily living.

A person’s social and business world is increasingly influenced by constantly changing online communication tools, including Web services, social-networking sites, blogs, viral videos and more. Web services help small businesses run efficiently with the latest software and without the bother of software installation.

Many networking sites such as LinkedIn and Facebook are online versions of a Rotary club or professional organization. Viral videos, so named because they spread quickly, serve as a new marketing technique by visually recording customer comments at the point of contact, posting immediately on networking sites that, in turn, drive more users to the company’s website. Twitter, though limited in text, reaches a wide audience in a matter of seconds. It can be the tool that directs users to a particular article or website, collects instant feedback, records real-time data, and schedules impromptu meetings in addition to social networking.



The demand for new technologies and applications continue. New technology products are continuously appearing in fields other than communication, e.g., energy, medicine, transportation, agriculture and defense systems. People, particularly young people, are receptive to using new technology applications. Yet, there is a national and global concern about the decline in the number of middle-school students who opt for courses in science, technology, engineering and mathematics, which form the foundation for new inventions. An international study⁶⁵ of more than 40 nations showed that 15-year-olds in the richest countries were far less interested in science than their contemporaries in the poorest. These are the very courses that provide thinking and reasoning competencies:

critical thinking, originality, innovation, deductive and inductive reasoning and mathematical reasoning. These are the courses that cover technology theories and lead to new and better applications.

Lifelong learning is the key to ICT literacy. Learning, both individually and within an organization, is crucial for realizing the productivity potential of new technologies and long-term economic growth. Government policies, particularly those relating to science and technology, industry, and education, will need a new emphasis in knowledge-based economies.⁶⁶ Academic approaches to science and technology coursework need revision to attract students back to those areas of study.

“Today’s skilled craftsman (HVAC, electricians, carpenters, etc.) has more computer knowledge than yesterday’s craftsman and this need for knowledge will increase.”

Clyde Carwile, former Chesterfield County Building and Grounds Division Chief

⁶⁵ Sjoberg, Sven, and Camilla Schreiner. June 29 2009. *ROSE study (The Relevance of Science Education)*. University of Oslo, Norway. <<http://www.ils.uio.no/english/rose>>

⁶⁶ OECD. op.cit.

RECOMMENDATION 4

Ensure all residents have ICT literacy for global communication.

The committee recommends ensuring that all residents have the information, communication and technology skills needed to interact globally. This implies competence in using new applications. Sustaining a global economy in Chesterfield County means encouraging and creating new technologies and improved applications. The committee cites three objectives to achieve and implement this recommendation.

OBJECTIVE 4.1

Develop and implement strategies to incorporate new and emerging technology into lifelong learning.

First, develop and implement strategies to incorporate new and emerging technology into lifelong learning opportunities. Hands-on usage and broad applications reinforce knowledge of technology. Therefore, the goal is to provide numerous occasions to experience and use new technology.

STRATEGY 4.1.1 Establish international classroom-to-classroom links to engage students and instructors in international discussion and learning.

The committee suggests establishing international classroom-to-classroom links to engage students and instructors in international discussion and learning. This serves the dual purpose of learning technology usage and engaging in global education. Organizations like iEARN and programs like One World are utilized to engage students and train instructors to use the Internet and other technologies for collaborative projects. Government resources like GLOBE.gov include local residents in a worldwide community of scientists.

STRATEGY 4.1.2 Keep current with emerging technology for schools, libraries and county offices.

Beyond the classroom, residents can experience new technology usage in everyday activities. The committee suggests that schools, libraries and county offices be kept current with emerging technology. This requires accelerating the rate at which technology is updated, training students and employees on the use of new equipment and software, and stressing the importance of continual technology training at all levels of county government.

STRATEGY 4.1.3 Develop Chesterfield County Public Schools into a model of technological innovation.

The committee suggests that the Chesterfield County Public Schools, already a model of excellence, be developed into a model of technological innovation. To offset the high costs of equipment replacement, the county could partner with businesses and industries using emerging technology. This would provide valuable instruction and resources to the school system and offer companies the potential for a well-trained work force.

In addition to students, staff and faculty must receive continual technology training opportunities that ensure application in the classroom and workplace. This encourages innovative uses of technology and spurs the creativity of students.

OBJECTIVE 4.2 **Treat technology as an integral part of the educational delivery system.**

Another objective of ensuring ICT literacy as an integral part of the community is to treat technology as an integral part of instructional systems. Its presence in every aspect of human culture, reinforces the need to apply its uses to educational delivery.

STRATEGY 4.2.1 Use technology as an educational tool in all aspects of lifelong learning.

The committee suggests incorporating technology as an educational tool in all aspects of lifelong learning. This eliminates its presence as a separate subject in the curriculum and uses appropriate technology in all instructional settings. It also requires that faculty be proficient in widely used technology as well as that specific to their subject matter.

STRATEGY 4.2.2 Provide universal access to technology.

To reinforce its usage, these tools should be easily available to the public. The committee suggests universal access to technology. The county currently provides free wireless Internet access, or Wi-Fi, in many public facilities. A public-private partnership to offset costs and ensure high

standards of safety would expand the wireless network countywide.

With broad access to all residents, the county could develop a number of applications that encourage lifelong learning and a global education, for example, virtual learning centers that are linked to learning centers around the world.

OBJECTIVE 4.3 **Encourage county residents to transition from informed to interactive networkers.**

A third objective to ensure ICT literacy for all residents is to transition county residents from informed citizens to interactive networkers. Engaging residents in the governance of their community becomes more difficult as the population increases. Technology can make this easier if people are aware of the applications and possibilities.

STRATEGY 4.3.1 Use emerging technologies for citizen engagement.

The committee suggests using emerging technologies to engage citizens. It applauds current county initiatives like podcasts, RSS feeds, Citizen Wi-Fi and 1630 AM radio. These tools allow one-way communication from county government to residents. The county is commended for receiving the Digital Counties Survey 2010 national award. This competition placed an emphasis on how technology had improved the lives of employees and residents.

Now is the time to go beyond “connecting to” residents and starting the conversations that “connect with” residents. Participatory technology allows officials and leaders to garner ideas and

feedback from a broader spectrum of the population. Online meetings, Webinars and chat rooms are some of the options available in 2010. Newer applications will expand the boundaries of transparency and citizen involvement. The benefits include enabling citizens to set priorities, using them as fact finders and generating bi-partisan buy-in on solutions. Public engagement fosters collaborative problem-solving activities between experts and residents. Technology provides the tools to merge online and face-to-face dialogue.

The county's website provides a central point for access to information. Many departments make available public records and forms online. This valuable tool should be expanded to ensure all county and local information is accessible through digital technology.

STRATEGY 4.3.2 Inform county residents of technological opportunities and innovations.

The committee suggests finding ways to inform residents of technological opportunities and innovations. If new applications are installed at public facilities and incorporated into the delivery of public services, this information would be disseminated efficiently and effectively. For example, libraries, as community centers, are the perfect setting to reach a large section of the population.

Venues throughout the county would offer demonstrations of new technology and communication applications, in partnership with private vendors. Public-private partnerships could also supply the prototypes to test innovations in schools, libraries and universities. This aligns with the suggestion to make Chesterfield County Public Schools a model of technological innovation.

CONCLUSION

Are Chesterfield County residents prepared to thrive in a global society, in a global economy? In conclusion, to sustain itself as a FIRST CHOICE community Chesterfield County must take a proactive approach to preparing all residents to thrive in a global society. Not just select residents but all residents need the human and social capital to thrive in the future.

The county's workforce is competing with the rest of the world. To be prepared residents need strong skills and knowledge gained through education and experience. The committee recommends that the best way to do this is through lifelong learning. Leaders of this county will need to determine the gaps in learning opportunities. And a concerted effort by the whole community is necessary to make lifelong learning and a global education a priority.

A broader awareness of the importance of lifelong learning, pre-K to gray, is the beginning. The next step is strengthening the learning systems so residents are not only educated but educable. The committee proposes refocusing learning opportunities around innovation and global partnerships while at the same time increasing the investment in teachers. Some of what is needed is already in place but more is needed. Initiatives, programs and activities must be accessible and offered to all residents, young to old.

Strategic planning for lifelong learning and global understanding for all residents can result in a stronger economy for the whole region. The committee urges the county to lead a united metropolitan area toward world recognition. Local and global partnerships will be stronger using the demographic and cultural diversity in the regional population.

Residents of a global society must adjust to the rapid rate of change in their modes of communication and interaction. An advanced learning community prepares residents with literacy in the areas of information, communication and technology. The committee advises the county to incorporate new and emerging technology into lifelong learning systems and use innovative applications for more citizen engagement.

The committee believes the vision of this report is achievable with a concerted commitment over a long period of time. Instilling the value of lifelong learning in all residents is vital if we are to compete in a global workforce, thrive in a global society and succeed in a technological world.

RECOMMENDATIONS AND STRATEGIES

RECOMMENDATION 1

Invest in human capital that prepares residents to compete in a global work force.

<p><u>OBJECTIVE 1.1</u> Establish policies and programs that develop lifelong learning and global understanding as priorities for all residents</p>	<p><u>Strategy 1.1.1</u> Form a team of existing leaders representing county government, schools, educational institutions and businesses to recommend policies that continually assess the condition of lifelong learning and international understanding in Chesterfield County.</p> <p><u>Strategy 1.1.2</u> Implement procedures aimed at building skills and knowledge about the world and access to lifelong learning.</p>
<p><u>OBJECTIVE 1.2</u> Make all Chesterfield residents aware of the value of lifelong learning and a global perspective.</p>	<p><u>Strategy 1.2.1</u> Assess public awareness of the need for lifelong learning in a global economy.</p> <p><u>Strategy 1.2.2</u> Provide leadership to help all sectors of the community embrace lifelong learning and a global perspective</p>
<p><u>OBJECTIVE 1.3</u> Strengthen the network of international programs to support a global perspective in lifelong learning.</p>	<p><u>Strategy 1.3.1</u> Set up an International Learning Center using the county school and library systems.</p> <p><u>Strategy 1.3.2</u> Build international partnerships and exchanges in countries of strategic importance to the Richmond region.</p>

RECOMMENDATION 2

Provide and support systems that sustain lifelong learning and prepare residents to attain global understanding.

<p>OBJECTIVE 2.1 Develop and implement systems that refocus education around innovation and global partnerships.</p>	<p>Strategy 2.1.1 Make lifelong learning and international understanding initiatives a priority when implementing the school system’s strategic plan.</p> <p>Strategy 2.1.2 Provide world language instruction, pre-K through gray, that achieves comprehension and application competencies.</p> <p>Strategy 2.1.3 Identify and implement systems that provide opportunities for instruction to all county residents through school year 14.</p> <p>Strategy 2.1.4 Use new and existing systems to prepare more residents to fill expected skilled-work-force shortages.</p> <p>Strategy 2.1.5 Explore and implement new ways of delivering lifelong learning opportunities to all residents.</p>
<p>OBJECTIVE 2.2 Increase the investment in teachers.</p>	<p>Strategy 2.2.1 Provide resources to teachers for mastering skills and knowledge about the world.</p> <p>Strategy 2.2.2 Develop incentives for training and mastery of skills and knowledge about the world.</p>

RECOMMENDATIONS AND STRATEGIES

RECOMMENDATION 3

Foster relationships that produce social capital to prepare residents to thrive in a global society

<p><u>OBJECTIVE 3.1</u> Become a leader in uniting the metro area.</p>	<p><u>Strategy 3.1.1</u> Have Chesterfield lead the region in becoming recognized as a center for innovation.</p> <p><u>Strategy 3.1.2</u> Strengthen a regional partnership tasked with developing educational programs with a global focus.</p> <p><u>Strategy 3.1.3</u> Ensure all students in the metropolitan region have equal access to curricula that prepare them to thrive in a global society.</p> <p><u>Strategy 3.1.4</u> Search for ways to connect resources into regional systems that support lifelong learning.</p>
<p><u>OBJECTIVE 3.2</u> Utilize the demographic and cultural diversity in the regional population.</p>	<p><u>Strategy 3.2.1</u> Develop programs that help residents gain international understanding and work cooperatively to maximize the returns of operating in a worldwide community.</p> <p><u>Strategy 3.2.2</u> Collaborate on regional initiatives to promote the benefits of diversity.</p>
<p><u>OBJECTIVE 3.3</u> Lead the region to work cooperatively toward global recognition.</p>	<p><u>Strategy 3.3.1</u> Market the Richmond metropolitan area, which includes Chesterfield County, as a global destination.</p> <p><u>Strategy 3.3.2</u> Seek innovative ways of strengthening the region's economic base at the international level.</p>

RECOMMENDATION 4

Ensure all residents have ICT literacy for global communication

<p><u>OBJECTIVE 4.1</u> Develop and implement strategies to incorporate new and emerging technology into lifelong learning.</p>	<p><u>Strategy 4.1.1</u> Establish international classroom-to-classroom links to engage students and instructors in international discussion and learning.</p> <p><u>Strategy 4.1.2</u> Keep current with emerging technology for schools, libraries and county offices.</p> <p><u>Strategy 4.1.3</u> Develop Chesterfield County Public Schools into a model of technological innovation.</p>
<p><u>OBJECTIVE 4.2</u> Treat technology as an integral part of the educational delivery system.</p>	<p><u>Strategy 4.2.1</u> Use technology as an educational tool in all aspects of lifelong learning.</p> <p><u>Strategy 4.2.2</u> Provide universal access to technology.</p>
<p><u>OBJECTIVE 4.3</u> Encourage county residents to transition from informed citizens to interactive networkers.</p>	<p><u>Strategy 4.3.1</u> Use emerging technologies for citizen engagement.</p> <p><u>Strategy 4.3.2</u> Inform county residents of technological opportunities and innovations.</p>

STUDY PROCESS

ORGANIZATION OF REPORT

May 2006 through January 2007

Select report topic and develop work plan

The committee viewed panel presentations on the following topics:

- County Overview, strategic planning and surveys Marshall Lewis, Quality Office
- County Demographics Bill Handley, Planning
- Community Disaster Preparedness Mr. Curt Nellis, Chesterfield County Fire and EMS
Dr. William Nelson, Chesterfield Public Health
Ms. Darcy Howarth, American Red Cross
Ms. Susan Mize-Cain, American Red Cross
- County Leadership Structure Mr. Steve Micas, Chesterfield County attorney
Dr. Nelson Wikstrom, VCU School of Public Administration
- Privatization of Some County Functions Dr. Blue Wooldridge, VCU School of Business
Mr. Jay Stegmaier, Deputy County Administrator, Management Services
- Reduction of Future Demand for Private Transportation Ms. Kathy Shaw-Clary, GRTC
Mr. Larry Hagin, Greater Richmond Transit Company (GRTC)
Mr. Frank Vance, ACCESS Chesterfield
Mr. John Rollison, Virginia Department of Transportation
Dr. Mary Lynn Tischer, VDOT Multimodal Planning Office
- Aging Gray Infrastructure Dr. William Nelson, Chesterfield Public Health
Mr. Dale Totten, VDOT Chesterfield office
Mr. Roy Covington, Chesterfield County Utilities
Mr. Joe Woomer, Dominion Resources
- Immigrant Populations Colonel Carl Baker, Chesterfield County Police
Ms. Becky Dickson, Deputy County Administrator, Human Services
Ms. Terry Franson, Chesterfield County Public Schools
Mr. Sam Kaufman, Chesterfield Chamber of Commerce
- School System Needs to Prepare for a Global Society Mr. Sterling Hening, Capital One
Ms. Dianne Pettit and Dr. Jim Schroeder, Chesterfield School Board
Ms. Joanne Huebner, Chesterfield Public Education Foundation
Ms. Lin Corbin-Howerton, Chesterfield County Public Schools
Ms. Karen Aylward, Chesterfield Economic Development
Dr. Gary Sarkozi, VCU School of Education
- Education Needs to Prepare for a Global Society Dr. Dale Kalkofen, CCPS
Mr. Mike Rose, CCPS Technical Center
Ms. Lois Stanton, Chesterfield Education Association
Mr. Mark Manasco, Greater Richmond Chamber of Commerce
Dr. Daniel Arkin, Virginia Society of Technology in Education
- Impact of Growth on Infrastructure, Public Facilities, Housing and Services Mr. Steve Micas, Chesterfield county attorney
Mr. Glenn Larson, Chesterfield Planning Department
Mr. Allan Carmody, Chesterfield Budget and Management
Mr. Tyler Craddock, Home Builders Association of Virginia
Ms. Marleen Durfee, Responsible Growth Alliance of Chesterfield

STUDY PROCESS

INTERNAL / EXTERNAL ANALYSES

December 2009 through August 2010

Coordinate and conduct input meetings

The committee met with county government directors and school administration to explain the topic and gather input on existing and pending initiatives:

- School Administration Tim Bullis
- Community Development Administration Pete Stith
- Management Services Administration Mary Lou Lyle
- Human Services Administration Sarah Snead
- Public Affairs Office Don Kappel
- Human Resource Management Scott Zaremba
- Fire and EMS Jim Graham
- Police Colonel Thierry Dupuis
- Budget Alan Carmody
- Human Services department directors
- Community Development department directors
- Management Services department directors

PRESENTATIONS

September 2010 through March 2011

Distribute information for feedback

The committee presented a draft of their findings and recommendations in order to receive feedback from county government, school administration and the community:

- Leadership Team
- Human Services department directors
- Community Development department directors
- Management Services department directors
- Chesterfield County Public Schools administration
- Bermuda District community meetings (2)
- Dale District community meeting
- Clover Hill District community meeting
- Matoaca District community meeting
- Midlothian District community meeting
- General public meetings (2)

GLOSSARY

American Dream, the—the term was first used by James Truslow Adams in his book *The Epic of America* which was written in 1931. He states: “The American Dream is that dream of a land in which life should be better and richer and fuller for everyone, with opportunity for each according to ability or achievement. It is a difficult dream for the European upper classes to interpret adequately, and too many of us ourselves have grown weary and mistrustful of it. It is not a dream of motor cars and high wages merely, but a dream of social order in which each man and each woman shall be able to attain to the fullest stature of which they are innately capable, and be recognized by others for what they are, regardless of the fortuitous circumstances of birth or position.”⁶⁷

Capstone project—capstone by definition is “a final touch; a crowning achievement; a culmination.” A capstone project focuses on some feature of a student's learning and requires the disciplined use of skills, methodology and knowledge taught throughout the curriculum. It encourages students to integrate facets of their current learning with important concepts from related disciplines.

Globalization—describes a process by which regional economies, societies and cultures have become integrated through a global network of communication, transportation, and trade.⁶⁸

Human capital (skills and knowledge)—the collective skills and knowledge gained by a worker through education and experience that increase that employee’s value in the marketplace.⁶⁹

Information-Communication-Technology, or ICT, literacy—the ability to use digital technology, communication tools and networks to define an information need; access, manage, integrate and evaluate information; create new information or knowledge; and, be able to communicate this information to others.⁷⁰

Knowledge workers—Knowledge workers in today's work force are individuals who are valued for their abilities to act and communicate with knowledge within specific subject areas. They will often advance the overall understanding of that subject through focused analysis, design and/or development. They use research skills to define problems and to identify alternatives. Fueled by their expertise and insight, they work to solve those problems, in an effort to influence company decisions, priorities and strategies.

Knowledge workers may be found across a variety of information technology roles, but also among professionals like teachers, librarians, lawyers, architects, physicians, nurses, engineers and scientists. As businesses increase their dependence on information technology, the number of fields in which knowledge workers must operate has expanded dramatically.⁷¹

⁶⁷ *The Library of Congress*. March 17 2009. <<http://memory.loc.gov/learn/lessons/97/dream/thedream.html>>

⁶⁸ *Wikipedia*. August 26 2010. <<http://en.wikipedia.org/wiki/Globalization>>

⁶⁹ Sullivan, Arthur. Steven M. Sheffrin. *Economics: Principles in action*. New Jersey: Pearson Prentice Hall, 2003, p. 5.

⁷⁰ International ICT Literacy Panel. August 18 2004. *Digital transformation: A framework for ICT literacy* International ICT Literacy Panel. Princeton, NJ: Educational Testing Service. 2002. <<http://www.ets.org>>

⁷¹ *Wikipedia*. August 26 2010. <http://en.wikipedia.org/wiki/Knowledge_worker>

GLOSSARY

Knowledge-based economy—an expression coined to describe trends in advanced economies toward greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the business and public sectors.⁷²

Lifelong learning—acquiring and updating all kinds of abilities, interests, knowledge and qualifications from early childhood throughout life through the use of formal, informal and non-formal learning.⁷³

Pre-K to gray—a phrase meaning lifelong, from early childhood to late life years.

Skilled worker—any worker who has some special skill, knowledge, or ability (usually acquired) in his work. A skilled worker may have attended a college, university or technical school. Or, a skilled worker may have learned his skills on the job.⁷⁴

Social capital (relationships and networks)—the human relationships and supportive networks that enrich the cognitive and social development of children and sustain the norms of a good community.⁷⁵

Unskilled worker—a worker who possesses no specialized knowledge or skill. Any worker can perform the tasks done by an unskilled worker.⁷⁶

⁷² OECD. May 2009. *The Measurement of Scientific and Technological Activities: Guidelines for Collecting and Interpreting Innovation Data: Oslo Manual, Third Edition* prepared by the Working Party of National Experts on Scientific and Technology Indicators, Organization for Economic Cooperation and Development 2005, Paris, <<http://stats.oecd.org/glossary/detail.asp?ID=6864>>.

⁷³ Harvey, L., 2004–9. August 11 2010. *Analytic Quality Glossary*. Quality Research International. <<http://www.qualityresearchinternational.com/glossary/>>

⁷⁴ *Wikipedia*. February 2011. <http://en.wikipedia.org/wiki/Skilled_worker>

⁷⁵ Grant, Gerald. *Hope and despair in the American city: Why there are no bad schools in Raleigh*. Cambridge, Massachusetts: Harvard University Press. 2009. p. 43

⁷⁶ *The Free Dictionary by Farlex*. February 2011 <<http://encyclopedia.farlex.com/unskilled+worker>>

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