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Living and Working in 2040

Lincoln and Lancaster County, Nebraska



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EXECUTIVE SUMMARY

Lancaster County, Nebraska is growing and changing. Global, national, and regional trends will impact how local change will occur. As the home to the state's flagship university campus, the State Capitol, quality amenities and a welcoming community atmosphere that enhances livability, it is anticipated that over 400,000 people will make Lincoln and Lancaster County their home by the year 2040 (an increase of over 125,000 from 2010). With this population increase will come major demographic and physical changes.

Much will be different in 2040 compared to today, and how we grow and change over the next 30 years is in need of discussion. This Living and Working in 2040 report provides data, perspective, and insight into how the community may grow and change over this 30-year time period. Its purpose is to set the stage for discussion and consideration of important topics for the update of the Lincoln-Lancaster County Comprehensive Plan and Long Range Transportation Plan. Within Lancaster County, the emphasis is on the future urban area – namely the City of Lincoln – because this is where the greatest amount of physical change is expected to occur.

As the community begins the process to update the Comprehensive Plan, important points to consider include:

- The City of Lincoln and Lancaster County continue to grow with an expected population of over 400,000 people by 2040;
- The Baby Boomer generation is moving into retirement age – their changing needs and desires will impact many aspects of the community including housing choices, mobility needs, and types of services demanded;
- It will be important to consider the existing supply of land, the capacity to provide and maintain infrastructure, and how efficiently growth may occur over the next 30 years to meet the needs of the population;
- Technological change will have an impact over the next 30 years just as it has significantly shaped the past 30 years;
- Issues of energy and sustainability are more critical than ever to take into consideration when planning for the community's future.

The report is organized into two major components. First, global changes that are likely to affect Lincoln are presented. Included in this material are demographics, technology trends, transportation, climate change and energy. Then local projections covering population, housing, employment and land use are provided.

GLOBAL CHANGES LIKELY TO AFFECT LINCOLN'S FUTURE

Lincoln lies in the middle of the North American continent, but it is not completely isolated from national or global trends. Some of these changes come to us more slowly than they do at the coasts, but some changes are not deterred by geographic separation. On a world-wide scale, technological advancements and the globalization of multi-national companies has impacted our economy and daily lives in a profound way. Our population continues to age as the Baby Boomer generation and their children progress in their life stages. Our daily lives as well as our careers continue to be shaped by new technology that responds to our needs for increased productivity of a shrinking working population, environmental pressures, and resource scarcity. Transportation may have to make a more dramatic transformation in the next thirty years to respond to the needs of an aging population and a change from dependency on nations abroad for fossil fuels that release greenhouse gases to cleaner power sources that can be harnessed closer to home.

All of these factors may influence the future of how efficiently we utilize our land resources and how we might finance the infrastructure to serve our community.

A. Demographic Factors

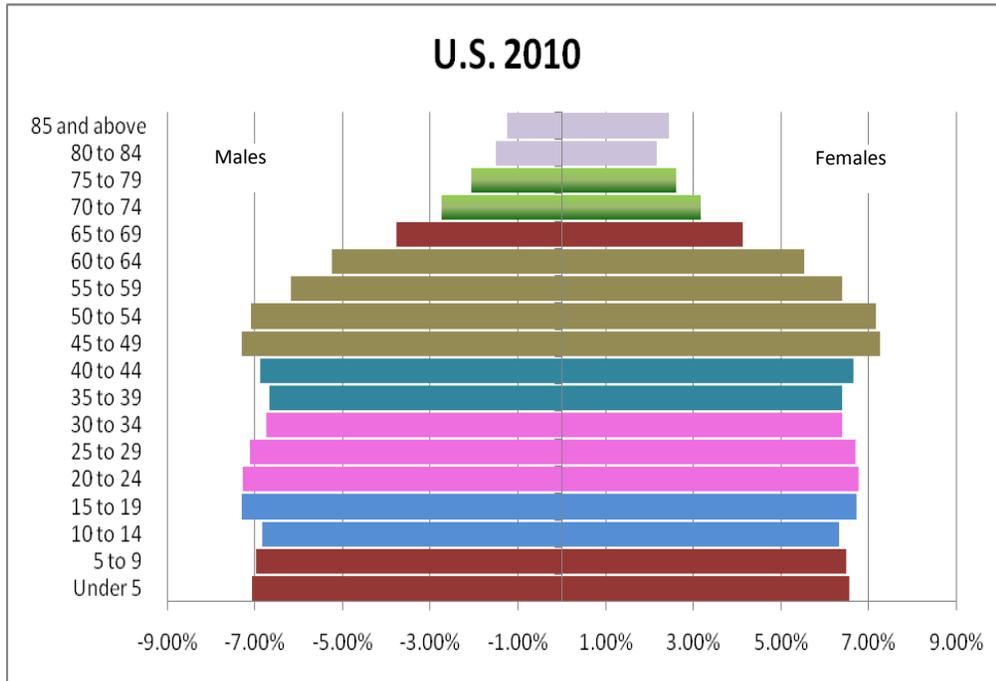
This section discusses two major demographic influences to consider as we plan for the next 30 years in Lincoln and Lancaster County: 1) population projections and characteristics, and 2) household size and composition.

Population Projections and Characteristics

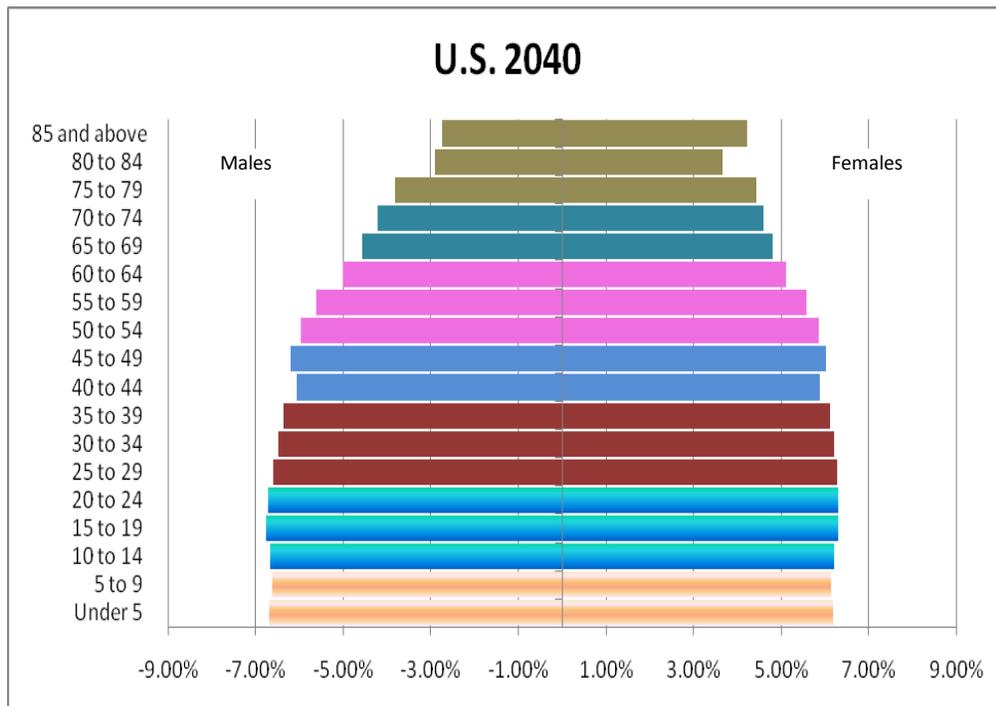
Nationwide, the characteristics of the population are going to change significantly during the next 30 years. The Baby Boomers will be moving into retirement, while a significantly smaller Generation X, and a much larger Generation Y are expected to have still different needs for housing, work, activities and services. The needs and preferences of these generations will significantly impact the physical characteristics of communities nationwide.

The Baby Boomers

The most prevalent topics in housing and economics of the future appear to revolve around demographics in one way or another. In general, the population is aging. Specifically, the “Baby Boomer” population (born 1946-1964) is reaching retirement age. Therefore, we will likely see some shifts to housing that supports the needs and preferences of seniors. Senior housing can range from aging in place in single-family homes, to independent living facilities, to



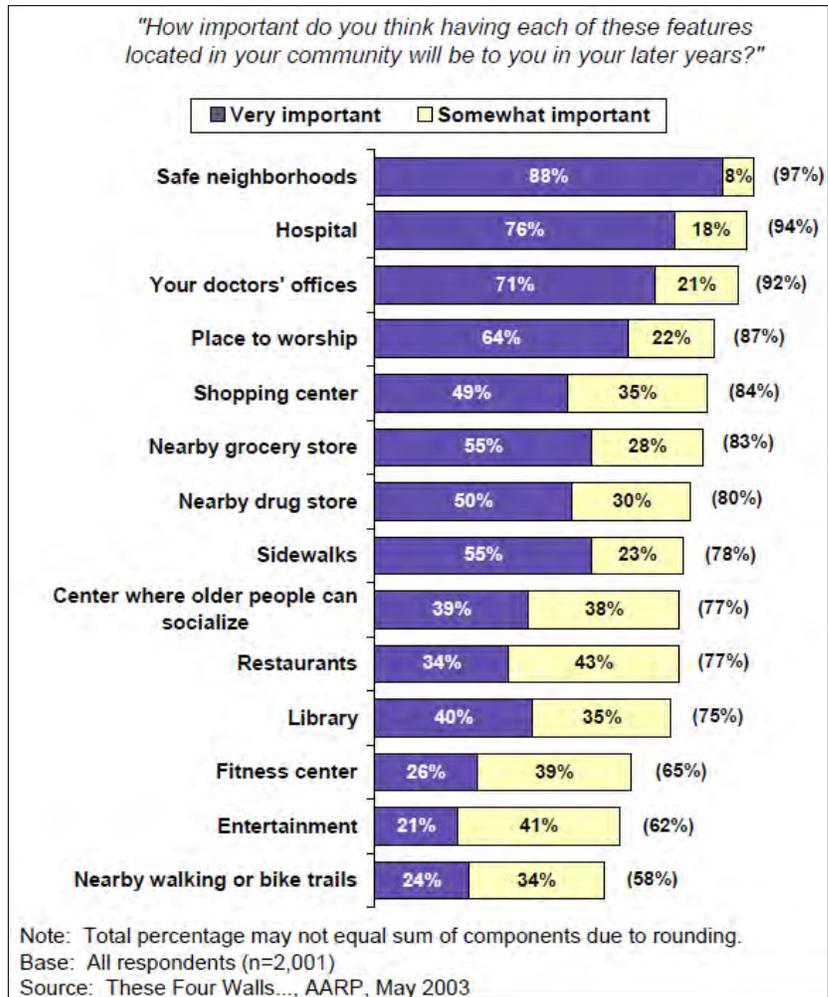
to assisted living, to nursing care. This is a very large demographic group that many industry leaders believe have similar preferences and expectations in terms of living, working, and community. Therefore, we may see a lot of housing options catering specifically to that generation as it ages.



In a 2003 survey by the American Association of Retired Persons (AARP), 47% of respondents ages 45-54 felt that it would be “very likely” that they would be able to stay in their current home the rest of their life (Mathew Greenwald &

Source: U.S. Census Bureau

Associates, 2003). The same survey revealed that 84% felt it was “very important” or “somewhat important” to have a shopping center in their neighborhood; 83% felt the same about a grocery store; 80% for a drug store; and 78% felt that way about sidewalks (see graphic below) (Mathew Greenwald & Associates, 2003). This survey may indicate a preference for mixed-use neighborhoods, or at the very least, residential neighborhoods with higher connectivity and walkability to commercial uses. What is uncertain is the extent to which the Baby Boomers will follow what their preferences for the future appear to indicate.



Generation X

A significantly smaller generation, Generation X (born c. 1964-c. 1977) is easily recognized in population figures as a major drop in births during this short time period. This generation came about before most of the Baby Boomers were forming households and starting families. Their parents were typically born during the Great Depression or World War II, which might be contributing factors to their lower numbers to begin with. Even though the time period for Generation X is shorter (only about 13 years) than a typical generation, experts widely agree that there is enough definition in the demographics to define this group between the Baby Boomers and Generation Y.

Generation Y

Echoing the Baby Boom generation, Generation Y (born c. 1977-1994) (Handley, 2004) is typically characterized as the children of Baby Boomers, and for planning purposes represents a second wave of housing demand. They tend to have different preferences than their parents when they were the same age. Economically speaking, this is not a generation to be taken lightly. Some estimate that Generation Y will make up 34% of the U.S. population by 2015. (Handley, 2004) This generation is actually larger than the Baby Boom generation; “...there are 80 million of them compared to about 60 million Baby Boomers.” (Boerner, 2009) Generation Y is also more influential than the roughly 48 million Generation Xers in terms of earning power: “...\$200 billion compared to \$125 billion.” (Boerner, 2009)

In general, Generation Y is very technically savvy and tends to make regular use of the internet for information. In terms of housing, location "...is important; they want to be where the action is, like when they were in college. They want to be near coffee shops, clubs, and shopping." (Handley, 2004) "Developers seeking to score points with this generation will offer housing that appeals to their individuality by providing distinct architecture, bold colors, flexible floor space, ample amenities tailored to their interests...and which meets their demands for connectivity -- both in terms of wireless hook-ups and transit options that quickly, efficiently get them from one place to another." (Riggs, 2007) In general, this demographic group values personal relationships and keeps a busy schedule of activities. Their priorities in life are much different than Generation X or the Baby Boomers. They would rather spend time with friends or do an activity than maintain a large house and yard. "In the next 20 years, a big backyard is going to move from asset to liability. Mention 'acreage' and a 50-something hears 'peaceful place away from the pressures of the city,' while a 20-something hears 'isolated maintenance nightmare.'" (Downs, 2008)

As a university town, Lincoln has always retained a high number of college graduates for our workforce. Generation Y students will continue to graduate from our colleges until about 2020. If Lincoln continues to capture a large share of college graduates, Generation Y will have an even greater impact in a city like ours than the national trend.

Immigration and Diversity

Immigration and diversity will also have an influence on housing demand and preferences. Unfortunately, immigration is perhaps the hardest demographic to forecast. Immigration varies widely, as the country saw a great deal of immigration during the 1990's and then a leveling-off after September 11th, 2001. Additionally, national trends may not necessarily translate to localized impacts. Migration not only has a direct influence on individuals but also upon their immediate family, and more importantly, their potential future family (eventual spouses and children). (Drozd, 2010)

Household Size and Composition

A second major demographic impact to planning our future community is household size and composition. Fewer and fewer households since the 1960's have included children. This is partly due to an aging population, but also due to an increase in the total number of households with fewer or no children due to marrying at a later age or divorce. The year 2025 represents the mid-point of a 30-year planning horizon. Dr. Arthur C. Nelson projects that by the year 2025, just 28% of households will have children compared to 48% in 1960 (see table below). (Nelson, 2006) Single-person households will account for 28% of households compared to only 13% in 1960.

By the year 2025, just 28% of households will have children compared to 48% in 1960.

--Dr. Arthur C. Nelson

Table 1. Household Trends, 1960 to 2025

Household Type	1960	2000	2025
Households with Children	48%	33%	28%
Households without Children	52%	67%	72%
Single-Person Households	13%	26%	28%

These demographic trends will undoubtedly have an impact on housing unit demand. In general terms, family housing requires larger living spaces to accommodate rooms for children and areas to play. Conversely, non-family households tend to be adult-only households; these and single-person households, especially, need less indoor and outdoor space and often desire fewer maintenance obligations. Younger single-person householders may prefer the flexibility of renting versus owning, while older single-person householders may prefer a housing option with exterior and/or interior maintenance provisions.

Healthy Living and the Built Environment

There has been recent and growing recognition that sedentary lifestyles have significant impacts on obesity and other related health issues. The recognition of America's obesity epidemic and the societal costs involved is creating pressures to promote healthier lifestyles. There are numerous strategies that a city can implement to enhance the urban environment and improve public health. In a recent report, the Centers for Disease Control and Prevention outlined 24 strategies to combat obesity in the United States. Some of those strategies that are closely-tied to land use and planning include (Khan, 2009):

- Communities should improve geographic availability of supermarkets in underserved areas;
- Communities should provide incentives to food retailers to locate in and/or offer healthier food and beverage choices in underserved areas;
- Communities should improve availability of mechanisms for purchasing foods from farms;
- Communities should provide incentives for the production, distribution, and procurement of foods from local farms;
- Communities should improve access to outdoor recreational facilities;
- Communities should enhance infrastructure supporting bicycling;
- Communities should enhance infrastructure supporting walking;
- Communities should support locating schools within easy walking distance of residential areas;
- Communities should improve access to public transportation;
- Communities should zone for mixed use development.

Many of the other strategies pertain to nutrition, physical activity, and community organization.

B. Work Life and Technology

Work Life

What do we mean by work life of the future? Are we talking about employment by industry or a change in the types of jobs? Are we talking about an altogether new field of jobs not known before? Or are we talking about the effects of technology on jobs of the future? It may be that a combination of all of the above will dictate how people work in 2040.

Employment

According to Rose Woods, an economist with the Bureau of Labor Statistics, most growth is expected to come from service-providing sectors. Professional and business services and the health care and social assistance sectors account for more than half of the projected job growth from 2008 to 2018; construction also is expected to add jobs, while agriculture and manufacturing employment is expected to decline over the period. (Woods, 2009)

A variety of industries—from agriculture and manufacturing to financial services—are expected to benefit from globalization in the form of rapidly rising exports. At the same time, however, increased globalization is projected to lead to even faster increases in imports. While some industries may benefit from increased imports in terms of improved productivity, others, such as apparel and textiles, are likely to be affected adversely. (Woods, 2009)

Occupation

According to T. Alan Lacey and Benjamin Wright, economists with the Bureau of Labor Statistics, professional and related occupations and service occupations are expected to create more new jobs than all other occupational groups from 2008 to 2018. In addition, growth will be faster among occupations for which postsecondary education is the most significant form of education or training. With an increasingly older population, replacement needs will create many more job openings, across all occupations, than will job growth. A dynamic business environment is expected to bring changes in the demand for certain types of workers. An increasingly competitive business environment will result in greater demand for management analysts.

Computer and mathematical occupations, as a group, will grow more than twice as fast as the average for all occupations in the economy, according to projections. Media and communications-related occupations will add a substantial number of jobs, led by rapid growth among public relations specialists. It is estimated that the employment of biomedical engineers, the occupation with the fastest projected rate of growth, will increase by 72 percent from 2008 to 2018. As elderly individuals account for an increasing share of the U.S. population and as new developments allow for the treatment of a broader range of medical conditions, demand for healthcare services will grow rapidly. (Lacey & Wright, 2009)

New Jobs

With ever changing technology, it is difficult to anticipate new types of jobs in the future. However, one of the most important considerations is the potential for change anticipated by the increase in “green jobs.” Green jobs cannot be categorized as a specific occupation with projections as those described in the section above. Green jobs encompass jobs from across occupations, with a focus on sustainability and sustainable practices.

In the U.S., 5.3 million jobs have been created by environmental management and protection, according to a 2006 study by Management Information Services Inc., a Washington, D.C., research firm that has been tracking green jobs for two decades. By 2010, “green” employment is expected to reach 5.8 million jobs; by 2020, 6.9 million. Meanwhile, corresponding green-industry sales—including energy suppliers and consumer-products makers—are predicted to climb from \$341 billion to \$496 billion in 2020. (Beau, 2008)

Speaking at the opening plenary of the 2010 “Good Jobs, Green Jobs National Conference” in Washington, D.C., House Speaker Nancy Pelosi stated clean energy jobs are one way to put people back to work and address the problem of chronic unemployment. Rep. Ben Ray Lujan (D-N.M.) echoed Pelosi at the afternoon plenary, telling participants at the three-day conference that green jobs offer the opportunity for people of color who have been hit hardest by the economic crisis to gain long-term employment. (Park, 2010)



Change in Technology

Thirty years ago, few expected computers and the Internet to revolutionize our world so much, to the point that it is practically impossible to live without them. Technology is changing at such a rapid pace that it is difficult to anticipate what it may bring in the next five years, let alone the next thirty. One thing we know for sure: there is certain to be change.

One area where technology may result in considerable change is the retail industry, through on-line shopping. Nicholas Negroponte argues in “The Future of Retail” that ordering over the Internet has the convenience of delivery, and the potential for avoiding sales tax and for finding



deals on products by buying directly from the manufacturer. Retailers, megastores and auctions may become the norm in cyberspace, and peer-to-peer buying and selling may also increase. It may be that only those traditional retailers who can offer value beyond the literal merchandise will remain competitive, by providing a desirable shopping experience. Certain merchandise may be more difficult to logistically substitute with Internet shopping, for example, groceries. (Negroponte, 1998)

Telecommunication

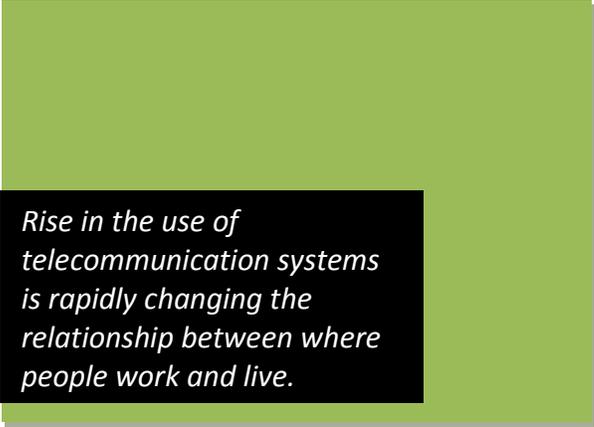
A rise in the use of telecommunication systems is rapidly changing the relationship between where people work and live. It is also changing the character of activities that occur in the home, workplace, and also travel modes and travel patterns. It is making the home into an extension of the office, shopping mall, and classroom; allowing the automobile and airplane to become workplaces; and converting the office building into a hub for social interaction and interpersonal contact. Information systems are permitting new combinations of people, equipment, and places; as a result, there is a dramatic change in the spatial organization of activities within cities and large metropolitan regions. (Moss & Townsend, 2000 p.1)

A leading media guru, Nicholas Negroponte, has stated that "the post-information age will remove the limitations of geography. Digital living will include less and less dependence upon being in a specific place at a specific time, and the

transmission of place itself will start to become possible." (Moss & Townsend, 2000 p.2) Rapid changes in telecommunications and computer technology are reducing the need for face-to-face contacts and eroding the benefits gained from minimizing communication costs. (Richardson, 1985)

Although telecommunications and information systems pervade our everyday life, we don't yet fully understand how such technologies will shape the growth of cities and regions. Unlike the automobile, which led people and jobs to disperse, moving outward from central cities, information technologies have dual effects: as the geographer Jean Gottmann has observed, these technologies sometimes weaken the economic forces that bind urban activities; in other cases, they strengthen the metropolitan bond by spurring new investment in offices, entertainment complexes, and housing. Moreover, the demand for access to new telecommunications technologies is leading to massive investment in the information infrastructure of office buildings, hotels, residential structures, and even stadiums and airports in our major metropolitan regions. (Moss M. L., Why Cities Will Thrive In The Information Age, 2000 p.1)

Even as Moss proposes the possibility of increased telecommunicating and its effects on work, home and transportation, he also recognizes that there is still no substitute for face-to-face contact to transmit timely information from trusted sources reliably and confidentially. Certainly, the growth of professional trade associations and lobbying firms in Washington, D.C., affirms the benefits of physical proximity in generating and obtaining information on public policy. Similarly, the "insider trading" scandals in the securities industry may prompt some to communicate more frequently in person, rather than over the telephone, where records of outgoing calls are a matter of public record. (Moss M. L., Telecommunications: Shaping the Future, 1988)



Rise in the use of telecommunication systems is rapidly changing the relationship between where people work and live.

According to a report done by the American Public Transit Association, “rather than promoting a massive work-at-home movement with further low density sprawl, information technology had a wide variety of impacts including more off-peak commuting, more partial-work-at-home, more use of satellite business centers, and more office-to-office teleconferencing. Information technology was a key driver in [the continuing deconstruction of large corporations (downsizing, de-layering, decentralizing, outsourcing)], the rise of dispersed “virtual corporations,” and the proliferation of local small businesses. (Task Force & Olson, 1996)



Trends

Social media is quickly becoming the norm in retail. TPG senior advisor and former CEO of Fedex/Kinko’s Gary Kusin told attendees at the 2010 Thought Leadership Conference held at the Mays Business School at Texas A&M University that social media was too widely used by consumers for retailers to ignore. “It’s too valuable and ubiquitous a tool not to use it,” says Kusin. Even the Pope is making use of social media, with his own iPhone application, Facebook and Twitter accounts, and YouTube channel. (Houston, 2010)

Jim Carroll, a global futurist who works with numerous businesses and organizations, posts a blog about future trends in major sectors of the economy. As a key-note speaker in Cedar Rapids, Iowa, he noted that plant science is in the midst of a technology explosion, with



significant advances in areas like genomics and nanotechnology that will transform not only global agriculture, but will have applications in many other health and science industries. (Carroll, Agriculture) Carroll has also predicted significant changes in manufacturing to accommodate changing consumer patterns: “We’re moving from a world of mass production to mass customization,” or what he calls “agility-based manufacturing.” (Carroll, Manufacturing)

With regard to the skills and knowledge needed for future occupations, Carroll has noted that “The biggest area for any educational institution in the future is in the area of ‘just-in-time knowledge.’ Whether we are dealing with medical, scientific, financial and business, mechanical or engineering issues, one thing is clear: the knowledge that people need to know to do their job today is becoming infinitely more complex every minute, with a constant, relentless flood of that which is new.” He cites an Australian study which concluded that 65% of the children in pre-school today will work in jobs or careers that do not yet exist. Carroll explains that “just-in-time” knowledge is the skill of learning information during quickly advancing periods of change. The information learned is entirely — and possibly only — relevant at a specific time. Learning

it may require people to immediately dump previous information that is no longer relevant at the same time. (Carroll, Education)

Technology

Technology is one of the most difficult areas for us to predict 30 years into the future. However, there is certain to be significant change. To help us project the scope of future changes, it may be helpful to reflect on the technological changes that have taken place in the past 30 years, since the year 1980.

Personal Computers

In 1980, personal computers (PCs) were incredibly uncommon. Most computers were still used primarily for complex business functions, data, and research purposes. A typical work place would not have a personal computer and most homes would not be able to afford one. The first widely available PC was the “Personal Computer I” by IBM in 1981. The first portable computer was the “Osborne I” by Osborne Computer Corporation in 1981—it was the size of a suitcase. The Graphic User Interface (similar to Windows) that is commonplace today was not invented and mass produced (by Apple) until the mid-1980’s.

Thirty years later in 2010, PCs are so affordable and widespread that it is difficult to imagine work or indeed life without one. People today often have their own dedicated computer at work and also have at least one if not more than one computer at home, where even one would not have been realistic in 1980. The rapid rise of the Internet through the 1990’s launched the “Information Age” where a high percentage of the population gained access to an unfathomable amount of information, commerce, and social networking that has forever changed our world. In 2010, Apple released the iPad: a device that allows a person to listen to music, play games, browse the internet, send and receive emails, read online books, and more. More multi-functional devices similar to this will certainly enter the market in the future.

Just as it would have been impossible to predict the future of PCs in 1980, it is equally impossible to project the future of PCs thirty years into the future. Perhaps some other technology will omit the need for desktop PCs as stand-alone devices. The technology is already here today for multi-functional devices. We may see something like the Cube Browser by Ludwig Zeller or the Scroll OLED Laptop by Nokia.



Images (clockwise): Personal computer I by IBM, 1981 (www-03.ibm.com); Cube Browser by Ludwig Zeller (fgadgets.com); Studio XPS 8100 by Dell (dell.com); Scroll OLED Laptop by Nokia (fgadgets.com); iPad by Apple (apple.com); Osborne I by Osborne Computer Corporation, 1981 (oldcomputers.net);

Cellular Phones

In 1980, cellular phones did not exist outside of the product development phase of Motorola. Thus, a cellular phone was something of science fiction in 1980, with the only thing near it in technology being wireless land line phones with very limited range. People would have to wait until 1984 to purchase the Dyna-TAC by Motorola. The phone weighed 2 pounds, offered just a half-hour of talk time for every recharging and sold for \$3,995, hardly something you would clip to your belt.



Images: Dyna-TAC by Motorola, 1983 (Motorola.com); iPhone 3GS by Apple (apple.com); Wearable Mobile Device by Samsung (fgadgets.com)

In 2010, cell phones are outnumbering landline phones and many households are abandoning their landlines all together. Beyond the basic calling features of a conventional telephone, many smart phones such as Apple's iPhone allow people to send emails, update their calendars, browse the Internet, look at pictures, play videos and games, and use Global Positioning Systems for directions.

Cell phones were basically science fiction in 1980, yet they are almost indispensable to our daily work and personal lives today. It is hard to imagine where things will go by the year 2040, but science fiction has become reality in this sector.

Music

In 1980, we were still listening to music over a variety of formats such as radio, records, 8-tracks, and cassettes. While the first Compact Disc (CD) player was produced in 1982, it did not catch up with the older technologies in the market until the 1990's when players became more affordable and the variety of music was more available to consumers. Thirty years later, while CDs and the radio are still used, music can now be purchased online at places such as Apple's iTunes Store and played back using a computer program or can be uploaded onto a small portable device.



Images: iTunes by Apple (apple.com); CD player by Sony (sony.net)



Technology's Impact on Daily Lives

Technological advancements have obviously impacted our daily lives over the last 30 years. Technology will likely play a role in the future of transportation and land use as well. Transportation modes may change or develop new and better ways to move people from one place to another. This could be anything from new power sources for vehicles to smarter transit systems to the materials that are used to build our new modes of transportation. From a land use standpoint, new technology might make it easier to get from one place to another using multiple modes of transportation, especially as technology will likely help us adapt to an aging population. Technology might increase at-home shopping, telecommuting, and virtual meetings, but these changes might not impact overall square footage of retail sales if technology is successful at increasing access and mobility for a broader range of consumers, especially a significant elderly population with buying power. In their homes, people should expect technology to continue to improve the efficiency of utilities and appliances. Additional advancements will likely focus on the development and resiliency of quality building materials, improved soundproofing for higher density dwellings, and universal design with an emphasis on aging in place.

C. Transportation Trends /Technological Influences

Where are the flying cars? Where are the Personal Jet-packs and Teleportation Devices?

In 200 years of history since the beginning of mechanized transportation, the capacity, speed, efficiency and geographical coverage of transportation systems have improved dramatically. Modes, technological efficiencies and networks alike have been subject to remarkable changes over time. New technology creates new markets and growth

opportunities, and often replaces existing transportation systems with substantial benefits in cost, capacity or time. Most changes tend to develop in incremental stepwise improvements to existing transportation technology and operations. This often leads to increases in productivity with more capacity, lower costs and better performance in our means of travel and in our transportation systems.

*Where are the flying cars?
Where are the Personal Jet-
packs or Teleportation
Devices?*

Our transportation systems are in continual transition. This is a brief look through the planning lens at some of the changes taking place and what transportation planning in Lincoln may be facing in the future. Change is being driven by a combination of forces and events that can be grouped into several general areas which include: 1) advances in technology, 2) the depletion of fossil fuels, 3) environmental and health issues, 4) the growing and changing population pyramids, 5) rising standards of living with more individual mobility and 6) increasing national and international freight transport volumes. These drivers of change are coming to us from many directions, global, national and local levels – but in all cases they are setting the stage for a new agenda in both national and local transportation planning. Consequently, the Lincoln-Lancaster County Long Range Transportation Plan will need to be retooled to address these new issues and planning directions.

Drivers of Change for Future Transportation

For this discussion, we will focus on six major categories: policy, demography & society, energy & environment, technology, economics of transportation demand, and finance. Each plays a role individually and in concert with the other. This discussion will not attempt to project outcomes within this planning process because there are too many interrelationships and uncertainties, particularly when a longer time frame is considered. It is however possible to identify trends that may need to be considered directly or indirectly within this planning process and incorporated in the Long Range Transportation Plan.

Policy

The inherent scale and complexity of the transportation system involve the coordination of local, state and federal governments, which requires extensive oversight and administration. The role and impact of federal government policy are commonly subject to cycles of increasing oversight (cycles of regulation and deregulation), which may include calls for non-profits and

private enterprise to develop and administer new methods in delivering services. Congressional leaders have expressed a desire for significant reforms in transportation planning that may include a larger effort to integrate transportation with community development plans.

Much of the new government policy is in response to new technology and the demand for alternative fuels and integrated systems. Transportation is also subject to many forms of regulations pertaining to safety, security and the environment. New strategies to address congestion are also being discussed that will likely involve an overall reduction in Vehicle Miles Traveled (VMT).

Other policy trends are striving to increase pedestrian facilities, and alternatives to single occupant vehicles (SOV). Future policies may include Vehicle Trip Reduction or Commute Trip Reduction (CTR) programs that provide commuters with resources and incentives to reduce their automobile trips. These changes are important because greater burdens are placed on our highway system when people drive alone to work instead of riding in buses, van and carpooling, bicycling, walking or using other modes. Additional strategies may include promoting compressed work hours, and working from home or a satellite location, often called teleworking or telecommuting, which offer benefits to both employees and employers. Other programs include maximizing and improving system capacity and operations with intelligent transportation technologies and promoting better planning and design for roads through “Complete Streets” programs.

The 2009-10 update to the Federal Surface Transportation law is taking place at a key time as we strive to maintain our economy, secure our environment, and develop alternative energy solutions while preparing for a growing population. A major focus of this bill is on maintaining the “Livability” of our communities by tying the development of transportation facilities to broader opportunities such as access to jobs, affordable housing, schools, and safe streets. This is to be balanced with “sustainable” transportation systems that integrate the transportation planning process with investment decisions to support energy efficient and low-impact strategies that address transportation-related problems.

Demographics

Population growth and demographic shifts in various forms are expected to continue through the mid 21st century and will be linked with changing demands in mobility. It is recognized that the relationship between demographics and transportation is a complex one, but some demographic variables are obviously related to transportation systems. The overall size of the population, the age distribution of that population, and certain variables related to household structure all have direct impacts on transportation behavior.

Of the key demographic characteristics and trends that will directly promote significant changes in demand for transportation service is an aging population. Tomorrow's society will be older. Public transit is said to be a lifeline for countless seniors. As our population continues to age, transit will become even more vital to giving older Americans a viable and reliable method for staying mobile. (Grob) As well, changes in certain population cohorts affect the demand for different types of transportation services, most notably the correlation between the elderly and the demand for paratransit services. For example, special needs and Americans with Disabilities Act (ADA) eligible populations are a percentage of each age group, and as the general population increases so will those special needs populations. As a percentage of age cohorts, senior populations have a larger representation of special needs.

As our population continues to age, transit will become even more vital to giving older Americans a viable and reliable method for staying mobile.

--Grob

The sizeable projected increase in population will create the need for more housing, employment, and services, which may lead to substantial impacts on travel patterns and demands. As a greater share of the population lives in urban areas, additional demand is anticipated for alternative transportation modes of travel, including pedestrian, bicycle facilities and transit services.

Household shifts are expected to include increased formation of childless married-couple and single-person households; this is expected to account for nearly half of the net growth in households over the next ten years. Thus, there appears to be an increasing demand for smaller housing units. Other changes include increased diversity, with minorities and immigrants being expected to account for significant household growth, and their descendants accounting for two-thirds of the population growth over the next several decades. Transportation policy will need to set the framework for accommodating this new growth while meeting broad objectives for job access, economic development, and environmental stewardship. Increased amounts of group quarters to serve the aging population will also impact how transportation services are provided, including potentially increased demands for transit and paratransit services.

Energy and Environment

Issues related to the availability of energy, particularly fossil fuels, are likely to continue and to become more acute. A major challenge of the 21st century is the transition from a polluting economy to a clean, sustainable economy with a focus on developing alternative fuels for transportation activities. About one third of the total world energy consumption is currently used for the transportation of people and goods, of which over 90% consist of polluting fossil fuels. It is projected that these resources are declining rapidly, resulting in increasing prices due to rising demand, and a decreasing supply from more and more expensive oil and gas fields. This will likely result in higher energy prices and since each mode has a different elasticity, the

comparative advantages of modal options will change toward the most energy efficient transportation modes. (Grob)

Climate change is also an issue that is part of the discussion on sustainable transportation systems, particularly in terms of a more stringent regulatory framework. It is noted that “global climate change has become a political, environmental, and economic fact of life.” (American Association of State Highway and

Transportation Officials, [AASHTO] 2008)

Proposed U.S. transportation reauthorization policy makes a direct connection of

“Greenhouse Gas Reductions” (GHG) and to transportation planning. “The linkage of

transportation planning with greenhouse gas emissions reductions would transform the

current transportation planning process in

the U.S.” (The Committee for the Study on the Relationships Among Development Patterns, Vehicle Miles Traveled, and Energy Consumption, 2009)

About one third of the total world energy consumption is currently used for the transportation of people and goods, of which over 90% consist of polluting fossil fuels.

Technology

Technological innovation is a very difficult process to anticipate and its impacts even more complex to assess. For transportation, technological innovations concern transportation management, the infrastructure for a particular mode, or improvements to the vehicle (i.e. engine). Major efforts are underway to develop next generation technologies in vehicles and fuels. Improvements in materials and engines are also highly possible with the expected benefits on modes mainly in terms of performance. It is also expected that information technologies will transform mobility by greatly improving travel flows and the supply chain management practices. This is commonly linked with information networks that make better use of existing assets which result in productivity gains. Information technologies have the added potential benefit of lowering demand for transportation demand by substituting information flows, teleworking or telecommuting, virtual meetings, online shopping and entertainment.

Technological Trends

The early 21st century is an era of car and truck dependency, which tends to constrain the development of alternative modes of transportation and emphasize the dependence on the supply of oil as a source of energy. However, with dwindling oil reserves, the end of the dominance of the internal combustion engine is approaching. Oil production is expected to peak and then gradually decline and energy prices are expected to soar. It is expected that this will trigger the greatest technological transition in transportation since the automobile. In such an environment the most promising technologies are:

Automated/Intelligent Transportation Systems

This refers to the development of a set of information and communication technologies that will improve the speed, efficiency, safety and reliability of transportation by employing complete or partial automation of vehicle controls. These systems could involve the improvement of existing modes such as automated highway systems, or the creation of new modes and new transportation systems in public transit and freight transportation. These initiatives focus mainly on the efficient use of existing infrastructures through information technologies. Other gains are expected through the better management of existing infrastructures and vehicles.

Alternative Modes

There is a range of modes that could replace, but more likely will complement, existing inter-city modes of travel, particularly for passenger transportation. One such technology is “maglev”, short for magnetic levitation, which has the advantage of having no friction (except air friction) with its support and no moving parts, enabling it to reach operational speeds of 500-600 km per hour (higher speeds are possible if the train circulates in a low pressure tube). Ultimately this represents an alternative for passengers and freight land movements in the range of 75 to 1,000 km. Maglev improves on the existing technology of high-speed train networks which are limited to speeds of 300 km per hour. In fact, maglev is the first fundamental innovation in railway transportation since the industrial revolution. The first commercial maglev system opened in Shanghai in 2003 and had an operational speed of about 440 km per hour.



Alternative Fuels

This mainly relates to existing modes of travel, where the sources of fuel, or the engine technology, are modified. For instance, hybrid vehicles involve the use of two types of motor technologies, commonly an internal combustion engine and an electric motor. Even though gasoline appears to be the most prevalent fuel choice, electric motors powered by rechargeable batteries are breaking ground and continue to be underdevelopment. Hybrid engines are in common use but are often perceived as a transitional technology to cope with higher energy prices. There is growing interest in the application of biofuels as an additive or supplement to petroleum, but their impact on food production is being assessed. A more far-reaching new energy source is the use of fuel cells, which involve an electric generator using the catalytic conversion of hydrogen and oxygen. The electricity generated can be used for many purposes, such as supplying an electric motor. Current technological prospects indicate they are highly applicable to light vehicles – notably cars – or to small power systems. Fuel cells represent a low environmental impact alternative to generate energy and fuel cell cars are expected to reach mass production by 2020 or 2025. Major challenges in the use of fuel cells

involve hydrogen storage in vehicles as well as the development of distribution systems to supply the consumers.

Economics of Transportation Demand

The local economy and personal and household affluence has experienced sustained growth over the past number of decades. This has been a major factor in the increasing demand for goods and services. One outcome is the growth in the transportation industry and demand for mobility. The levels of activity and the structure of local economies, as well as land use growth patterns, greatly influence the development of transportation systems. Over the past few decades, we have experienced remarkably steady growth in vehicle miles traveled (VMT) with the average annual rate of growth per capita averaging 2.5% per year. However, in the last few years Americans have simply been driving less and the U.S., including Nebraska, has experienced a reduced rate of VMT growth. Travel habits have been affected by a combination of gas price fluctuations, economic stress, energy concerns, and public financing shortfalls. (Puentes, 2008)

Development patterns and community design characteristics significantly influence the distance and intensity of trip making activities in the urban area.

The relative price of transportation is directly linked with the availability of goods and the demand for mobility. As transportation costs rise in the short and medium term, namely due to fossil fuels, transportation demand is expected to adjust accordingly resulting in lowered traffic volumes in some locations.

Development patterns and community design characteristics significantly influence the distance and intensity of trip making activities in the urban area. In recent decades, the increase in spread out development patterns means that people spend more time on the road to get to jobs, services and their homes. When residential, commercial, employment and other uses are separated by significant distances, more of the trips and errands will be made by automobile, and opportunities for walking, cycling and public transit become less practical. As we spend more time in our cars, roads become more congested. The transportation-land use connection is not new but greater effort is being made to fully understand transportation-land use relationships and there is a renewed interest in a better integration of land use planning and transportation planning as one important way to improve access and quality of life.

Finance

Transportation projects, due to their size and technological complexity, are getting increasingly expensive. Transportation finance has become a primary challenge for transportation policy makers. Within a few years, the Federal Highway Trust Fund—the gas tax-funded trust fund and a major source of funding for the maintenance and improvement of the highway system and other major roadways—will not be bringing in enough money to fully fund surface transportation programs. State and local transportation programs also are running short of money and our population is growing, our economy is expanding, along with our need to transport people and goods. This lack of funding means that transportation projects will likely be slowed down or put off and critical system maintenance will be delayed. New programs and

future innovations in transportation, needed to meet changing demands, may also be set back or shelved indefinitely.

Recent research has documented the shortfalls in transportation revenue and investment, and evaluated options to increase revenue for transportation programs. The options include raising and indexing fuel and vehicle taxes, hiking transit fees, introducing mileage-based or vehicle-mile user fees, adopting local-option sales taxes, applying impact and development fees, adding sales taxes, increasing property taxes, and using more general revenue to pay for transportation programs. The options also include introducing tolling to fund projects, using

Continued revenue shortfalls will likely result in consequences that threaten our economic competitiveness, personal mobility, and quality of life.

road pricing to manage demand, and expanding opportunities for public-private partnerships that attract private capital for investment in transportation facilities. Research has shown

that the funding shortfalls are large enough that a single option will not be sufficient and action at all levels of government will be necessary to fill the transportation funding gap. Continued revenue shortfalls will likely result in consequences that threaten our economic competitiveness, personal mobility, and quality of life.

Implications for Current Planning Effort

As the update to the Lincoln-Lancaster County Long Range Transportation Plan (LRTP) and Comprehensive Plan begins, each of the “Drivers of Change”— Policy, Demographics, Energy and Environment, Technology and Technological Trends, Economics, and Finance – will inform the strategies and capital improvements developed in the LRTP to guide the effective investment of public funds in multi-modal transportation facilities and programs. The resulting transportation plan is to provide the context from which capital improvements are planned and implemented for highway, transit, pedestrian, and bikeway strategies and projects.

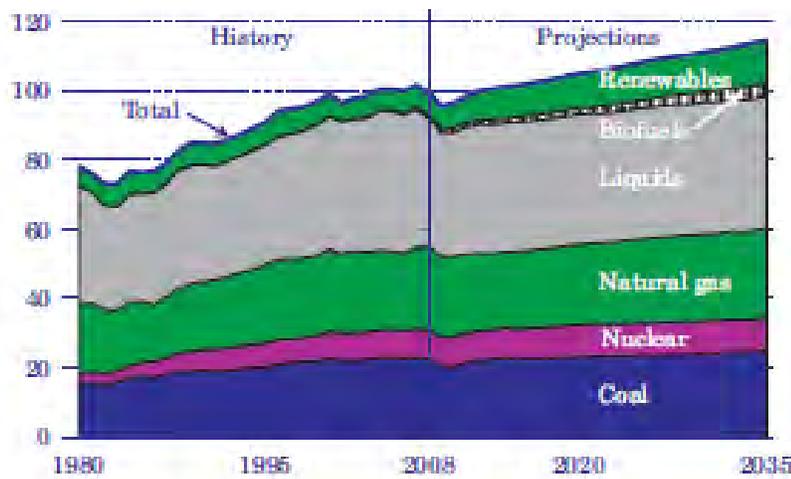
D. Energy and Climate Change

Energy

World energy use is projected to continue to increase, with a major growth in demand by countries outside the United States. Growing demand on limited petroleum supplies will affect costs and drive a need for increased efficiency to be competitive and a greater use of renewable fuels. Total energy use in the U.S. will continue to grow, linked to population growth. Due to efficiencies in new technology, energy use per capita in the United States is projected to decline through 2035. (United States Energy Information Administration, 2010) The land use implications of higher-cost energy in the future could include the desire and economic necessity to build more compact cities, mixed-use development, and transit-oriented neighborhoods.

Aggregate fossil fuels will fall and renewable/alternative energy sources will lead the rise in primary energy consumption (see graph below). In the transportation sector, liquid bio-fuels are projected to account for more than 80% of the growth in liquid fuels (see graph below).

Primary energy use by fuel, 1980-2035 (quadrillion Btu)



(United States Energy Information Administration, 2010) The U.S. Department of Energy projects that the transportation sector will account for about ¼ of total energy consumption by 2035, which is only slightly smaller in percentage than 2008 (see graph below). (United States Energy Information Administration, 2010)

In Lancaster County we should anticipate similar trends, with

an increase in energy costs and a drive for substantial improvement of energy efficiency in all sectors, thus decreasing the energy use per dollar of product produced. We should plan on improving energy efficiency and a transition to new and alternative energy sources. In this region, growth trends would be expected in wind energy and biofuels.

Greenhouse Gases

There is a growing and now accepted consensus in the scientific community that the earth's climate is changing and that the buildup of greenhouse gas (GHG) is a major contributor to this phenomena. GHGs come from both natural and human sources and it is generally accepted that human activity is a major contributor to this. The primary human activity-related GHGs are carbon dioxide (CO²) (primarily from the use of fossil fuels), solid waste, methane, livestock and fuel production, nitrous oxides from agricultural and industrial activities, and fluorinated gases from various industrial, commercial and household products.

From 1990 to 2008, U.S. greenhouse gas emissions increased 14% and carbon dioxide was up 16%. Electricity generation accounted for 32% of the total U.S. emissions since 1990. Transportation was the second largest source, contributing 27% of the gas emissions. (United States Environmental Protection Agency, 2010)

Primary energy use by end use sector, 2008-2035 (quadrillion Btu)



Global agreements and Federal and State laws will continue to impact Lincoln’s activities relative to efforts to reduce the release of these gases. The Pew Center on Global Climate Change notes that comprehensive policies could cut GHG emissions from the transportation sector in half by 2030. (Schafer, 2003) The U.S Energy Information Administration projects that CO2 emissions (all sectors) for American energy growth will increase 9% by 2035, even though energy consumption per capita and per dollar of GDP will decrease. (United States Energy Information Administration, 2010) If some of the policies outlined by the Pew Center on Global Climate change are enacted to reduce GHG emissions in the transportation sector, perhaps the U.S. Energy Information Administration would lower their 9% projection.

Regulations affecting what we do locally are already occurring in regard to energy use and our GHG emissions, or “carbon footprint”. The State of Nebraska enacted legislation this year in regard to Comprehensive Plans (LB 997) to require an energy element that assesses energy infrastructure and end use by sectors, evaluates renewable sources and promotes energy conservation measures that benefit the community. LB 1048 was also passed to allow opportunities for private companies to develop, own, and operate renewable energy facilities for the export of wind energy from the state. Bills such as this could influence future wind farms in or near Lancaster County. From a land use standpoint, regulations that encourage mass transit in order to reduce GHG emissions may make transit-oriented developments more prevalent. Even simple measures such as sidewalks, street connectivity, and mixed-use development could help to reduce vehicle miles traveled (VMTs) and GHG emissions.

Climate Change

Despite efforts to limit climate change through GHG regulations, most major climate organizations, the United Nations, and the United States federal government agree that the earth’s climate is changing. In general, the length of the growing season has increased and plant hardiness zones have shifted to the north over the last 50 years. The changes anticipated for Lancaster County during the next 50 years are anticipated to be a level of increased warming

and an increase of volatility of storm activity including more severe thunderstorms, hail, high winds, tornadoes, flooding, and ice storms. A 6-10 degree Fahrenheit increase in average temperature could also mean a rise in precipitation, and could marginally increase the need to run air conditioners and decrease the need to run furnaces.

Plant hardiness zone maps appear to show Lincoln warming from 1960 to 2006. (Tredici, 1990) (Arbor Day Foundation, 2006) If the trend continues to 2040, weather conditions may become more like present-day Topeka, Lawrence, or Kansas City. Or, if we see a modest northward shift in plant hardiness zones over the next 30 years, we could end up comparing Lincoln's growing season in 2040 to that of cities like Amarillo, Texas, Wichita, Kansas, or St. Louis, Missouri in 1960. (Tredici, 1990) (Arbor Day Foundation, 2006) Longer growing seasons could result in the availability of additional crops and perhaps impact production of more local food.

If the trend continues to 2040, weather conditions may become more like present-day Topeka, Lawrence, or Kansas City.

What a change in climate could also mean is the loss of some plant and animal species adapted to Lincoln's present-day climate. Change in temperature and weather patterns could negatively impact existing species through more violent and frequent storm events and the introduction of new invasive plants, animals, and disease.

LOCAL PROJECTIONS

A. Population and Housing Demands

The population growth in our community over the next 30 years needs to be accounted for in an efficient manner that maintains and builds on the strengths of our existing community. The makeup of this larger future population will need to be understood as much as possible in order to better plan for its needs. Changing demands and market influences will greatly impact what types of housing and infrastructure will be needed throughout the next 30 years.

Changing demands and market influences will greatly impact what types of housing and infrastructure will be needed throughout the next 30 years.

Lancaster County had an estimated population of 281,531 as of July 1, 2009 as reported by the US Census Bureau. The Census Bureau is conducting the decennial

census for 2010 and the data is expected to be available sometime in 2011. Since 2000, Lancaster County has increased its population by an annual average of 1.26 percent rate of growth.

To estimate the population growth in Lancaster County for 2040, three sources of information have been used to show a range of possibilities. The sources of information are from Woods and Poole, Bureau of Business Research (BBR) at UNL and the Center for Public Affairs Research (CPAR) at UNO. All three sources of information have projected the population of Lancaster County and its characteristics using demographic models and tools. Of note is a trend within each source of demographic data that indicates a faster rate of growth out to the year 2025 and then a slowing of the growth rate out to the year 2040.

The population of Lancaster County is projected to be 396,554 according to Woods and Poole (Poole, 2010), 405,540 by BBR (Thompson, 2010) and 412,697 by CPAR (Drozdz, 2010). These projections show an annual average growth rate of 1.10 percent, 1.18 percent and 1.22 percent respectively. This is lower than both the 1.26 percent historical growth rate of the past 9 years and the projected growth rate of 1.5 percent per year in the currently adopted 2030 Comprehensive Plan.

For simplicity and clarity, the analysis contained within this background report primarily makes use of projections from the Center for Public Affairs Research, UNO's data for demographic analysis. CPAR data utilizes census data, local data and the most recent available information to generate the most complete set of projections which are also customized for Lancaster County.

2040 Demographic Projections

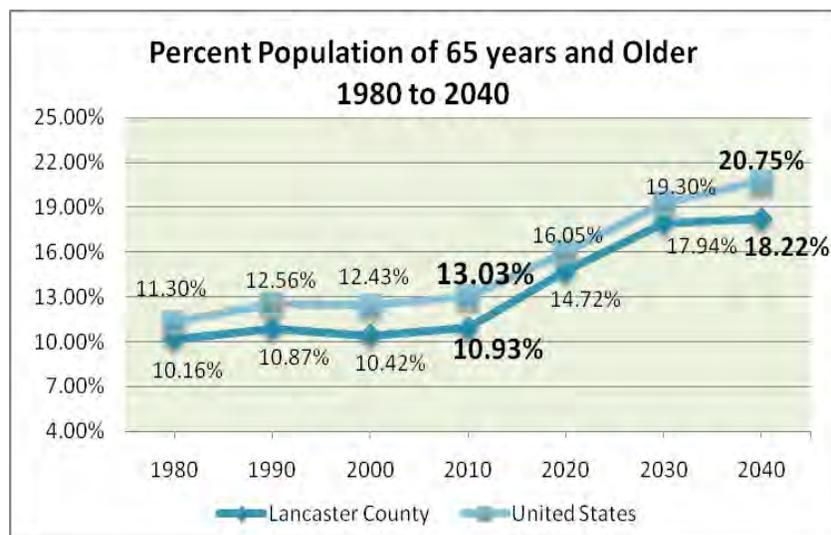
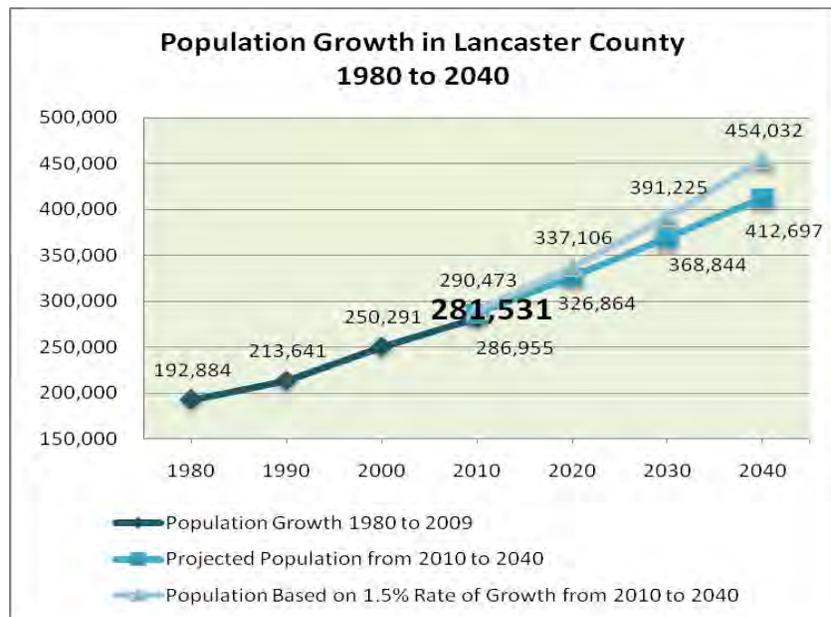
Total population and Growth rate: As described above, the population of Lancaster County is projected by CPAR to increase by about 125,000 people to reach 412,697 people by 2040. This shows an annual average growth rate of 1.22 percent. This growth rate follows the trend that has been observed in the county since 2000. It is lower than the 1.5 percent anticipated in the previously adopted 2030 Comprehensive Plan.

In 2040, the U.S. population will be about 405 million people, showing a growth rate of 0.9 percent per year over the 30-year time period, as projected by the U.S. Census Bureau Projections Program. (Bureau, 2009)

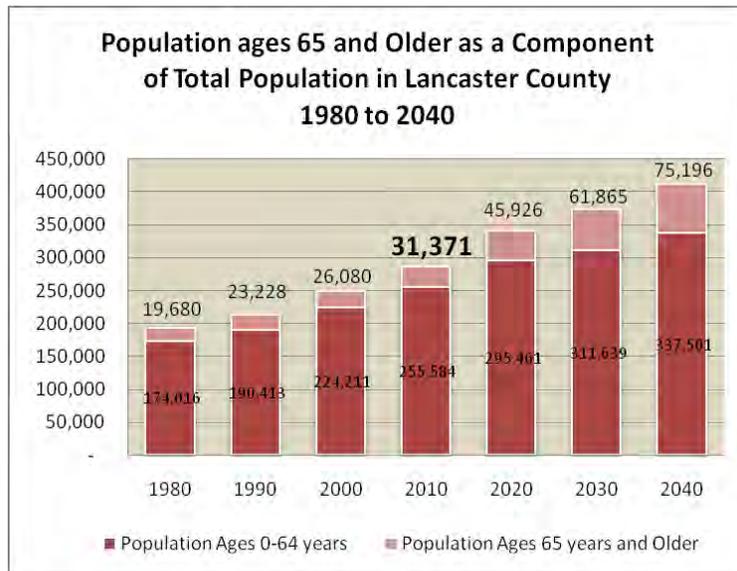
Aging Population – Ages 65 Years and Older

The number of people in Lancaster County ages 65 and older is projected to increase by about 44,000 to reach about 75,000 in 2040. The aging population increases by 140 percent in the next 30 years. The population of 65 and older as a component of our population is expected to be the fastest increasing group, with a projected annual average growth rate of 2.96 percent. The share of the aging to the total population may increase from about 11 percent today to about 18 percent in 2040.

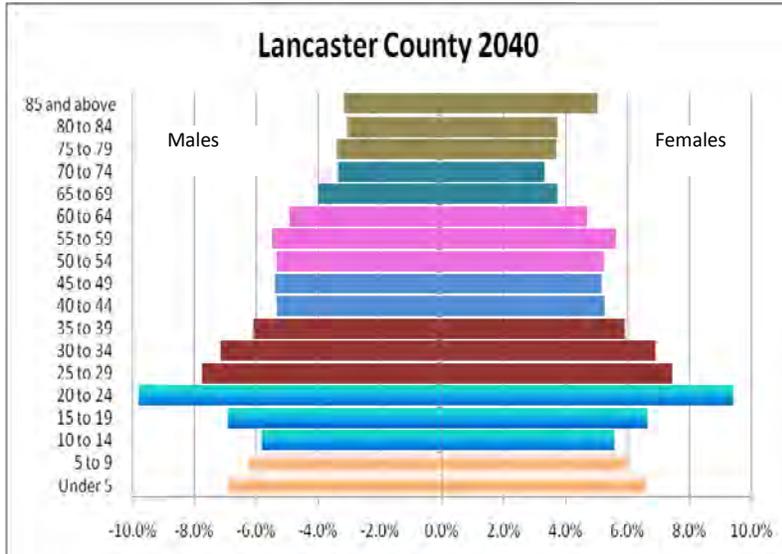
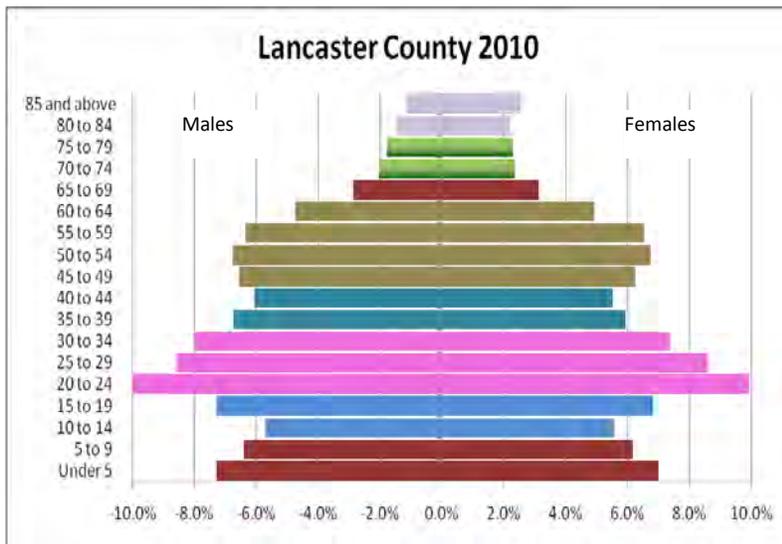
Years	Lancaster County		U.S. (in '000)	
	Population	Avg. Annual Growth Rate	Population	Avg. Annual Growth Rate
1980	192,884		226,546	
1990	213,641	1.08%	248,710	0.94%
2000	250,291	1.59%	281,422	1.24%
2010	286,955	1.38%	310,233	0.98%
2025	347,088	1.28%	357,452	0.95%
2040	412,697	1.16%	405,655	0.85%



The population of 65 and older in the U.S. is about 40 million, or 13.03 percent of the entire population. In 2040, this component of the population is projected to grow at an average growth rate of 2.3 percent per year to approximately 79 million. Their share of the total population may increase to as much as 20.75 percent. (Bureau, 2009)



The component of the population projected to have the lowest growth rate is the working

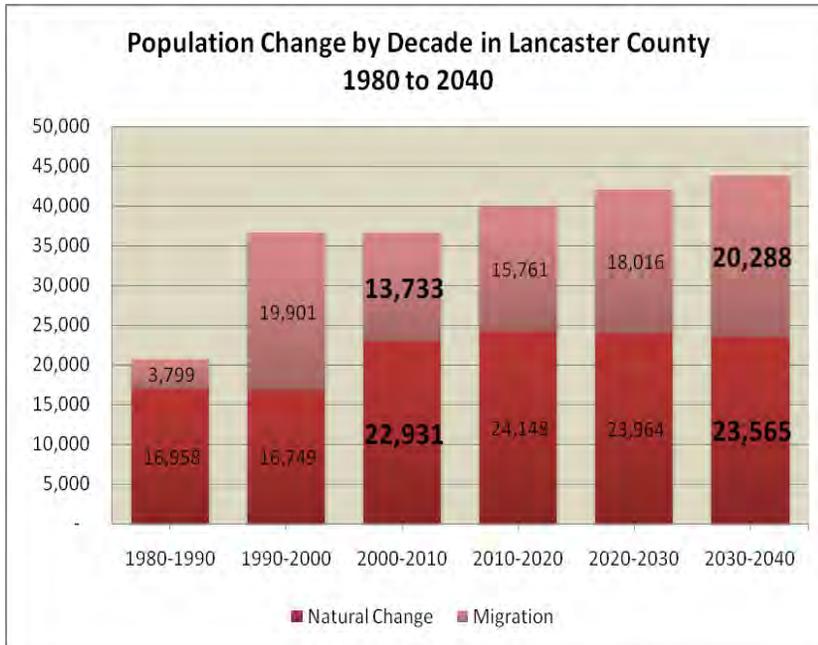


population between 20 and 65 years of age. The population of those younger than 20 years old maintains a growth rate similar to the total population growth rate.

Migration

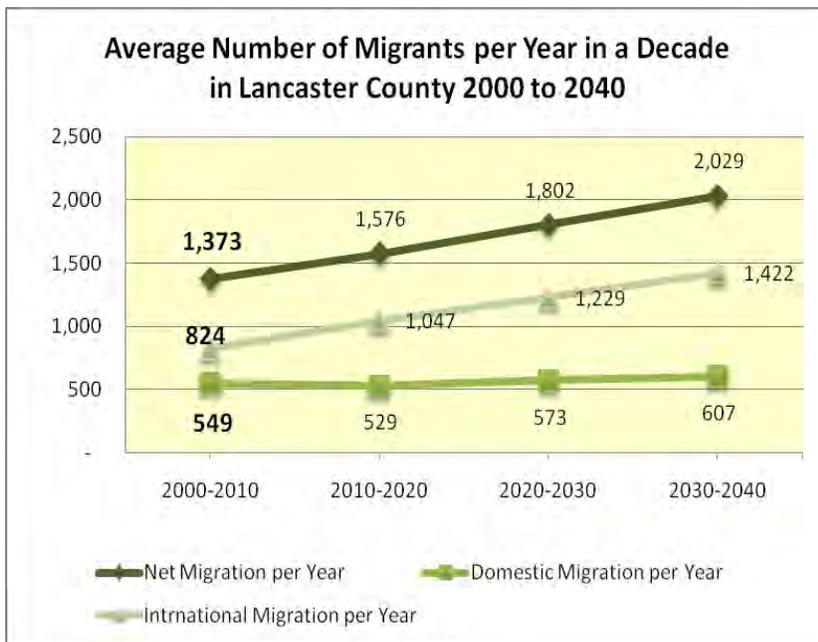
As noted in the Global Changes chapter, migration not only has a direct influence on individuals but also upon their immediate family, and more importantly, their potential future family (eventual spouses and children). Thus, understanding and modeling migration accurately is a key component in portraying the future population structure of Lancaster County (Drozd, 2010).

In Lancaster County, migration currently accounts for about a third of the population increase. Migration accounts for people moving from other parts of the state, other parts of the country,



and people moving in from outside of the country. International migration is a major component of the migratory population in Lancaster County, especially since the 1990's.

From 2010 to 2040, the immigrant population is projected to increase to 43 percent of the total population change adding about 1,802 persons per year. This change is lower than the trend seen in the 1990's but higher than the trend seen since 2000. With an increasing aging population and decrease in the percentage of people between 20 and 64 year old, migration, especially international migration may play a big role in population growth in Lancaster County. In the 30-year planning period, international migration accounts for about 68.4 percent of the total migration.



In the U.S. also, migration accounts for about 32.5 percent of the total population increase in 2009.

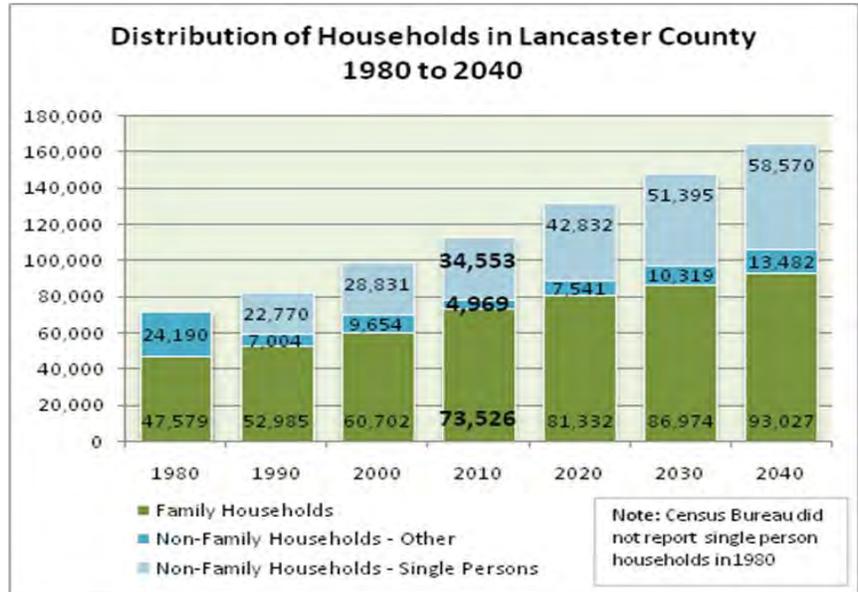
In 2040, this number is projected to increase to about 57.3 percent. Migration in the U.S. is growing at a projected growth rate of 1.06 percent per year (Bureau, 2009).

Total Number of Households

The total number of households in Lancaster County is projected to be about 165,079 in 2040. This is a growth rate of about 1.27 percent per year, higher than our projected population growth of 1.22 percent per year. The higher household growth rate can be attributed to an increasing population and a decreasing average household size.

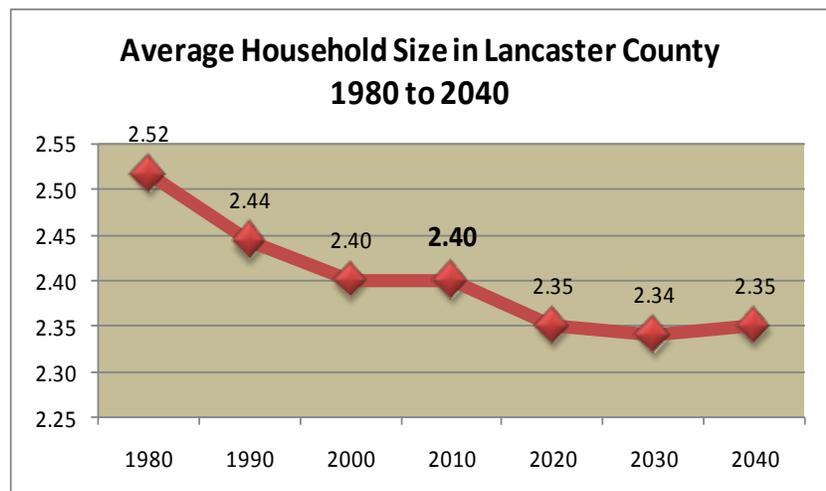
Households can be categorized into family households and non-family households. While both family and nonfamily households increase in number during the next 30 years, the projection shows the rate of growth will be faster among non-family households. Part of this is due to increases in 1-person households

(nonfamily by definition), which are projected to increase about 4 percentage points from about 31% of all households in 2010 to 35% in 2040. Some of this change likely stems from married baby boom couples moving into an age range where the loss of a spouse occurs more frequently, thus changing from a 2-person to 1-person household (Droz, 2010). The projected ratio of family to non-family households in 2040 is 56:44. The existing ratio of 65:35 indicates an increase in the non-family type of households in the county over the next 30 years.



Household Size

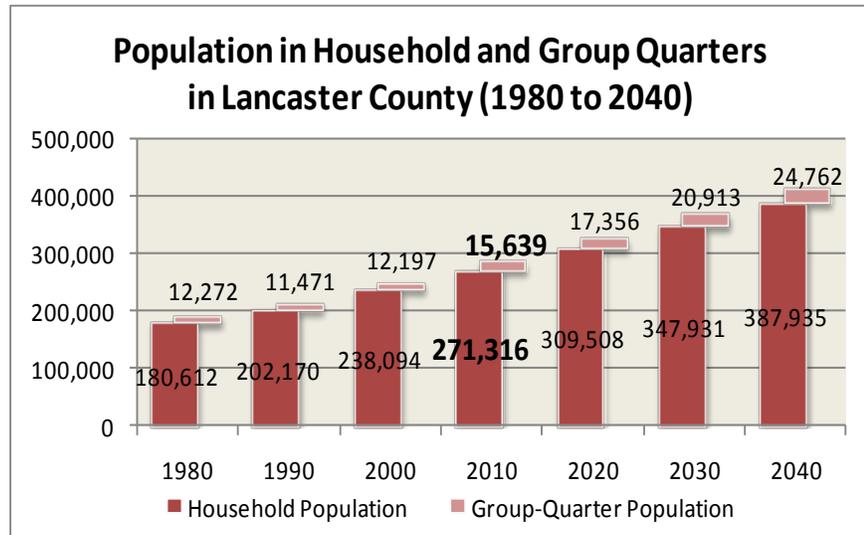
Household size in Lancaster County has been decreasing over time. Decreased household size results in increased household numbers for the related increase in population. In the 1970's the average household size in Lancaster County was 2.89 people per household. Average household size has continued to decrease since the 1970's to 2.4 today, and is projected to be 2.35 by 2040.



The decreasing household size can be explained through multiple factors. With an increasing aging population, there are resultant single person households with age of householder 65 years and above with a deceased spouse. There are also more people aged 20 to 64 years who occupy apartments or houses as a single-person household. The decreasing household size can also be attributed to a decreasing number of children per family (Drozd, 2010). There may be more reasons for the change, but these are the primary factors affecting Lancaster County. Projected numbers for these households are discussed in the section below.

Household Characteristics

The number of people living in households in 2040 is projected to be 387,935 – nearly 94 percent of the total population. This is a decrease of 0.6 percentage point from the existing 94.6 percent of the total population. There are more people moving into facilities that are identified as group quarters.



The number of people living in group-quarters in 2040 is projected to be 24,762, over 1 ½ times the existing number (15,639). Group-quarters include facilities such as dormitories, prison facilities, assisted living facilities, nursing homes, etc. The increase in group-quarter population can be partially explained by the increasing numbers of our aging population expected to move into such facilities.

The number of non-family households is projected to increase by 82 percent, housing nearly 41 percent of the total population of the county. Single-person households are projected to increase by 69 percent, housing 14.2 percent of the total population.

2025 Midpoint Data Description and Implications

Total Population and Growth rate

While population continues to grow in Lancaster County, it is projected to grow at a higher rate until the midpoint, 15 years to 2025, and then slow down toward the end of the 30-year planning period in 2040. In the next 15 years, to the year 2025, Lancaster County adds about 60,000 people to reach a projected 347,088 people. This shows a higher growth rate at 1.28 percent than the overall 30 year projected rate of 1.22.

Aging Population

As with the total population, the aging population is also projected to show a higher growth rate in the first 15 years, to the year 2025. After this mid-point, the increase is slower and steadier. The first 26,000 of the total 44,000-person increase in the aging population occurs in the first 15 years. The projected rate of growth of the aging population in the first 15 years is 4.06 percent. In the U.S., 23 of the total 38 million projected increase in the aging population occurs in the first 15 years, to the year 2025, showing a growth rate of 3.1 percent per year, lower than Lancaster County. (Bureau, 2009)

Migration

Migration patterns do not exhibit the same trend. Migration is growing at a steady rate throughout the 30-year planning period. This is true for both the U.S. and Lancaster County. (Bureau, 2009) (Drozd, 2010)

Total Number of Households

As with the population, the total number of households is projected to show a similar trend of a higher growth rate in the first fifteen years, by 2025, followed by a lower rate of growth. The total number of households in 2025 in Lancaster County is projected to be 139,574, with a growth rate of 1.42 percent per year, higher than the projected overall population growth rate of 1.28 percent per year during the same time. The projected distribution of the non-family households to the family households for the first 15 years is roughly a ratio of 40:60.

Household size

The decrease in household size to 2.35 persons per household is projected to occur in the first 15 years by 2025. After 2025, it is expected to stay steady. Between 2010 and 2025, the next wave of births is expected (grandchildren of the baby boomer generation) which allows a slower decreasing rate in the household size. Once that wave is over, the household size is expected to stabilize at 2.35 persons per household.

Household Characteristics

Contrary to other household and population characteristics, the progression of people moving from households to group quarter facilities shows a reverse trend, that of a slower growth in the first 15 years and then an abrupt increase to 2040. The percentage of people in group quarters increases by 0.1 percentage points until 2025, and then increases by 0.5 percentage points until 2040. Progression of non-family households and single-person households is projected to follow the pattern as seen in other population and household characteristics – a higher increase and decrease, respectively, over the first fifteen years until 2025, when the trend is a gradual change over the next 15 years, until 2040.

Housing Options of the Future

Single-Family

Trends indicate that single-family detached housing will continue to exist into the future. What is unknown is the extent to which there will be demand for it. Based on demographics, there appears to be at least a predicted trend towards smaller dwellings, smaller lots, and more attached single-family options. One issue revolves around what the Baby Boomers will do with their housing stock. The general idea is that most will prefer to age in place, but many will seek amenity-rich apartments, condominiums, and urban centers in higher-density developments. If the supply of these housing types does not keep up with demand, many Baby Boomers may find themselves unable to find or afford any other option besides aging in place.

According to 2003/2004 Census data, 38.8% of Nebraska households over 50 years old had at least one member with a disability; more specifically, 27.6% of 50-and-over households had a physical disability. (Kochera, 2006) Whatever the shorter term (10-20 years) trend will be, we know that the Baby Boomers will not be able to live in isolated single-family detached dwellings forever. While life spans are expected to continue to lengthen, this group will eventually vacate their homes through natural progression or infirmity. The question is: Who will occupy all of those dwelling units? Some fear the potential that the supply of single-family housing will exceed the demand of younger adults.

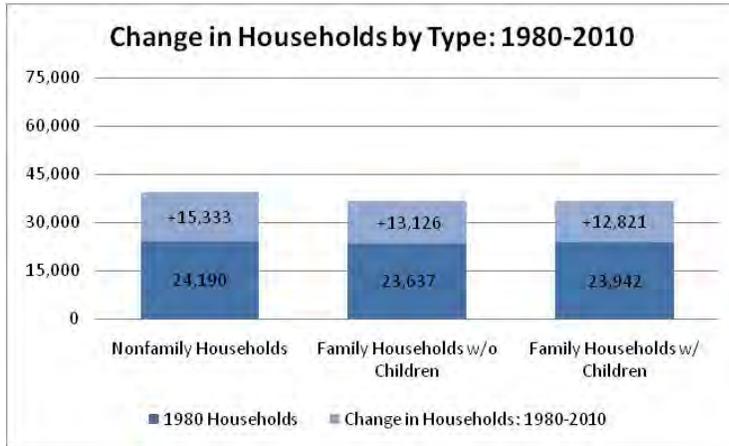
(Myers, 2009) Generation X is younger, but much smaller; Generation Y might have already chosen higher-density options. Other candidates would include the children of

Generation X and Y who would be of household and family-forming stages of their lives by 2040. Some speculate that this housing stock will become more affordable due to lower demand pressures, which could cause them to be prime settlement areas for immigrant populations with larger and sometimes extended families. This would represent a demographic shift in our country in terms of mid-to-late-20th Century land use patterns, but lower income/immigrant settlements on the fringe are a prevalent pattern in Western Europe.

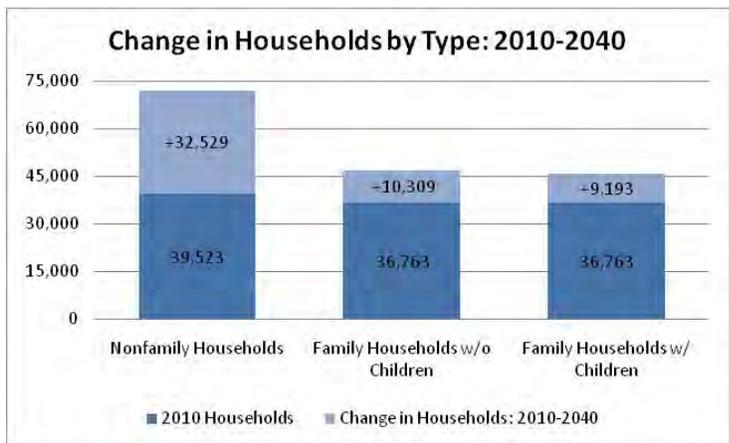
From 2010 to 2040, Lancaster County will add about 52,030 households. By 2040, 82.3% of all new households will not have any children present.

Looking ahead from 2010 to 2040, demographic projections indicate that Lancaster County will add about 52,030 households. That roughly translates into a need for 52,030 additional dwelling units. Looking more closely at the change in households by type, only 17.7% of new households (roughly 9,193 additional dwelling units) will be families with children. By comparison, from 1980 to 2010, Lancaster County experienced 31.1% of all new households having children present (roughly 12,821 additional dwelling units). That means by 2040 we expect that 82.3% of all new households (roughly 42,838 additional dwelling units) will not have any children present, compared to 68.9% of new households in the past 30 years. Fewer new households with children could have a direct impact on the single-family housing market.

The bar graphs below illustrate the change in households by type for Lancaster County. The three categories of “Non-family Households,” “Family Households without Children,” and



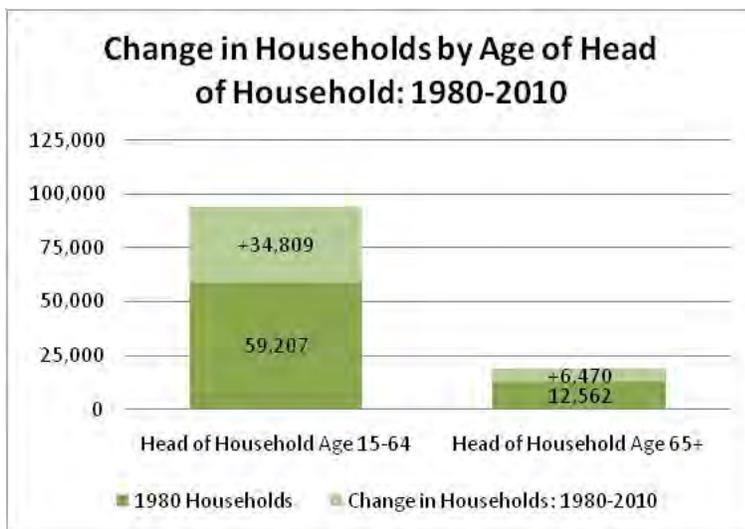
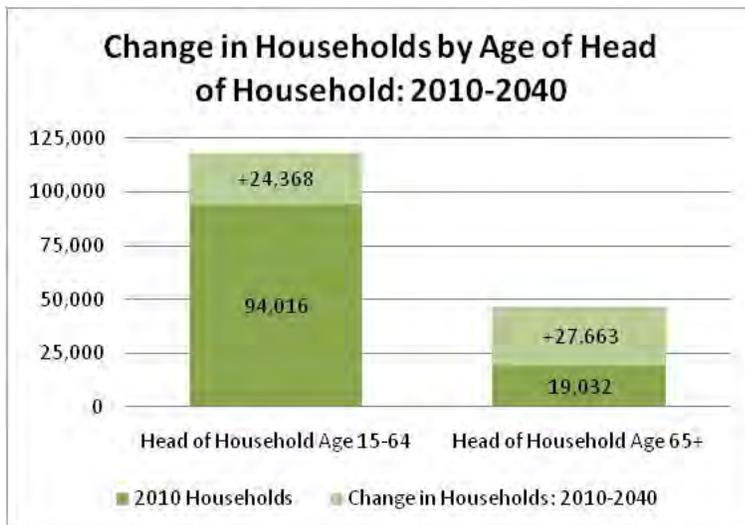
“Family Households with Children” comprise 100% of households. Non-family households can be thought of as single persons or unrelated individuals living together in the same dwelling unit. Family households without children are two or more people related by blood or marriage, but do not include any family members under the age of 18—a majority of these households would be married couples without children (or their children are over 18). Family households with children include at least one guardian and at least one child under 18.



As the bar graphs illustrate, the change that Lancaster County will experience in the next 30 years in terms of household type will be significantly different than what we experienced in the past 30 years. In 1980 and 2010, the three main household types were roughly equal,

but nonfamily households will nearly double in the next 30 years. This indicates an increased need for housing that accommodates single person households and households with nonrelated individuals living together. Single person households typically require less living space and less outdoor space. Housing for nonrelated individuals has historically been found in apartments—and that is expected to continue, but with an aging population, there may be an additional trend to aging in place by sharing a single-family home.

Traditionally, single-family dwelling units have more often been the preferred housing choice for households with children. As we anticipate a decreasing percentage of new households with children overall, the share of the housing market held by single-family homes may very well decrease in the future. Currently, Lincoln has a split of roughly 70% single-family to 30% multiple-family dwelling units. Many of those units will continue to exist in 2040; some will be redeveloped by that time. Although we can examine the data and make assumptions, it is difficult to project how many of the additional 52,030 dwelling units will be constructed as single-family dwellings or how many will be absorbed by future multi-family dwellings in both existing neighborhoods and new developments. However, one can easily deduce that the split of new construction will not be 70% single-family and 30% multiple-family in the years ahead.



Another demographic factor in future housing demands in the age of the head of household. The past 30 years witnessed the majority of growth (84.3%) among the households with a head of household ages 15-64. By contrast, we expect more than half (53.2%) of our future growth to be among households with a head of household over the age of 65. The head of household can be any of the three main household categories mentioned above (non-family, family without children, and family with children). The enormous growth we are expecting in this demographic cohort may indicate a need for more housing that is built to accommodate the needs of an aging population rather than younger households. This could include all types of housing, but might include smaller dwelling units in general.

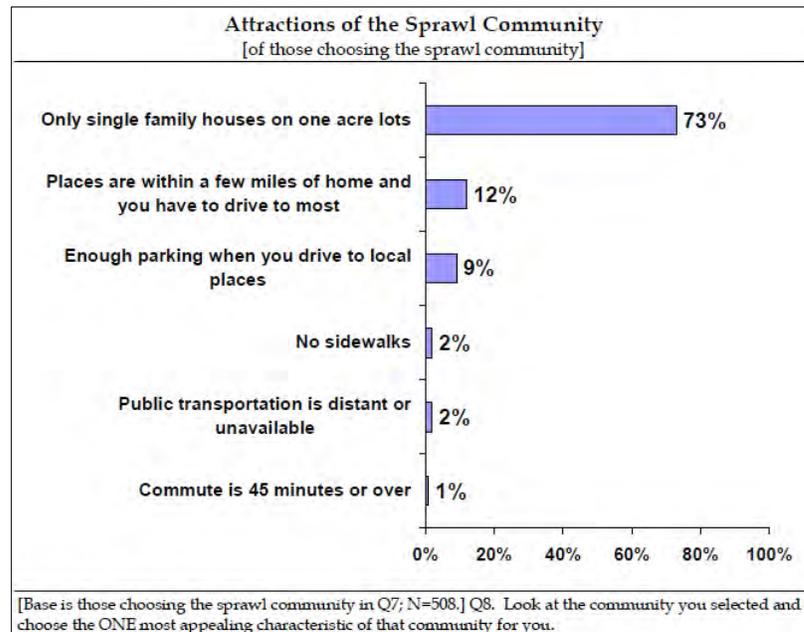
Accessory Dwelling Units

Accessory Dwelling Units (ADUs), also known as granny flats, provide numerous opportunities. They increase density and transit efficiency by accommodating additional households in single-family neighborhoods. They provide an affordable living situation for singles or small households. As mentioned above, single person and non-family households are expected to increase dramatically. They provide an additional source of income for homeowners, which may help in financing maintenance and improvements of the property. Baby Boomers in particular could be the greatest beneficiary of this housing type: on one hand, they could age in place in their single-family detached home while supplementing their retirement income; on the other hand, they could be accommodated in an ADU at someone else's residence. Resistance may be met in single-family detached neighborhoods where there could be a stigma attached to any real or perceived densification of land use. However, if adequate design standards are adopted, ADUs could be added in a context-sensitive way that may help reduce the "Not-In-My-Back-Yard" (NIMBY) factor and actually stabilize neighborhoods from a financial standpoint (in terms of land values and the wherewithal of homeowners to maintain their

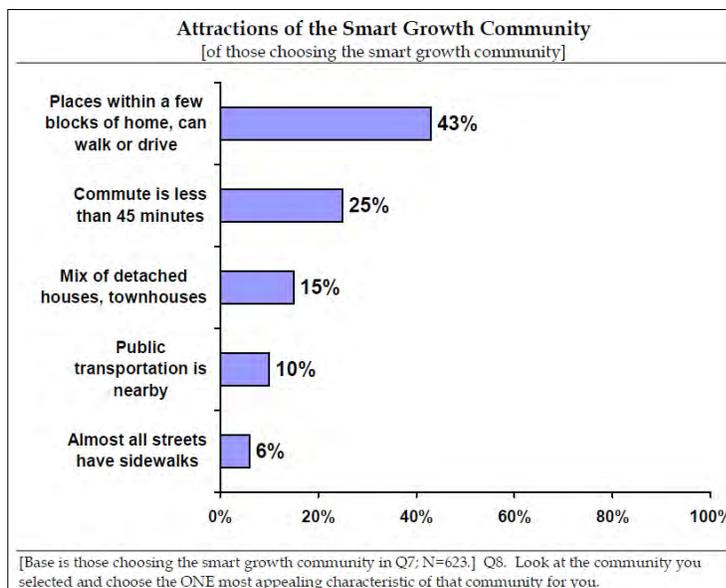
property). Even modest densification efforts such as ADUs might give a boost to the viability of public and private neighborhood services and better utilize existing infrastructure.

Multi-Family

Multiple-family dwellings include land use types such as apartments and condominiums. They can be rented or owned. A common stigma or misconception is that apartment living is for low-income or renters only. Into the future, both renting and owning present viable options to different demographic groups. Singles may prefer the flexibility of renting—and single person households are expected to increase by 46.2% over the next 30 years. Couples and retirees may prefer an ownership option. According to 2003/2004 Census data, Nebraska households over 50 years of age actually paid less per month to rent versus own (\$484/month to own; \$477/month to rent)—this is the opposite of the national average where it is cheaper to own (\$616/month to own;



\$628/month to rent) (Kochera, 2006). The attraction of multi-family dwellings to Generation Y and retiring Baby Boomers alike is the potential for community amenities they wouldn't have in



a single-family home: security features, clubhouse, exercise facility, swimming pool, organized activities, maintenance, transit options, and better access to commercial areas.

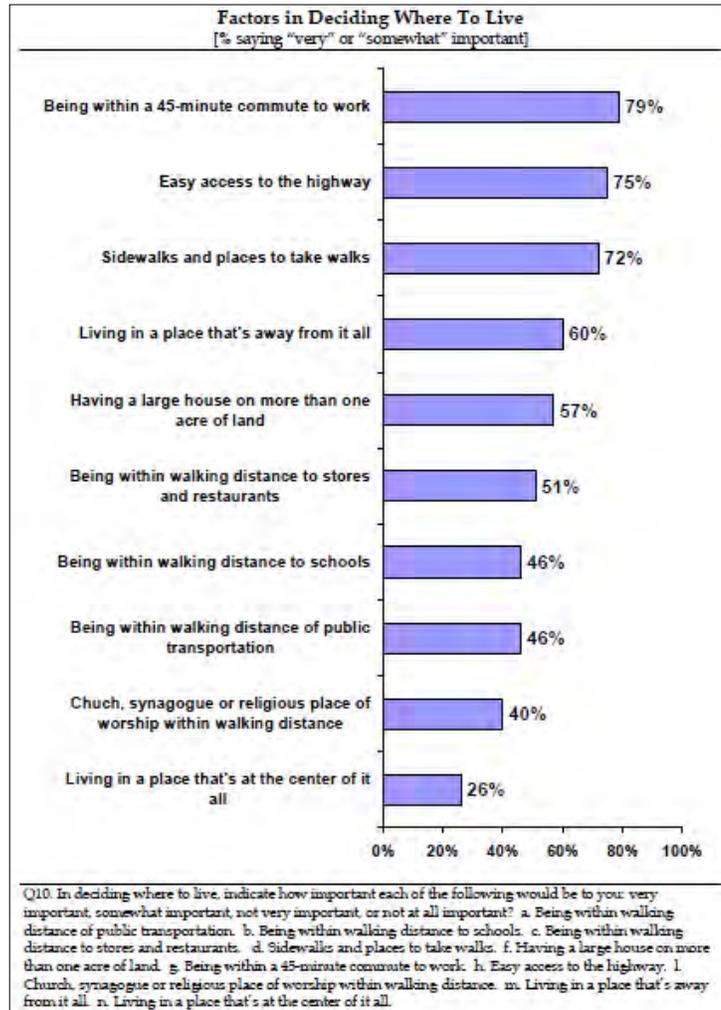
“Many financially secure Baby Boomers, who have seen their children leave the nest, have chosen to leave behind the yard maintenance and repairs required of a single-family house for the more carefree and convenient lifestyle multifamily housing provides. Interestingly, their children, the echo boomers [Generation Y], are entering the age

where many will likely live in multifamily housing. Just starting careers, many are looking for the flexibility of apartment living to follow job opportunities. Their grandparents, likely on a fixed

income, may also prefer or need to live in multifamily housing as physical limitations may have made living in a single-family house too challenging.” (Haughey, 2005)

Mixed-Use

Today’s real demographic and lifestyle changes are inspiring a return to traditional development styles that offer walkable, bikeable, and more dynamic communities that put residents closer to transit, shops, schools, offices, and parks. (Haughey, 2005) Mixed-use developments, whether they be traditional centers, redeveloped centers, or new centers will likely be an attractive place for new residential development. Personal convenience and connectivity to food, entertainment, services, and shopping appears to be a popular preference across the board, but especially with retiring Baby Boomers and young professional Generation Yers. According to a 2004 survey conducted for Smart Growth America and the National Association of Realtors, Midwesterners favor smart growth communities with shorter commute times, sidewalks, and places to walk more than sprawling communities (56% to 44%, respectively). (Belden Russonello & Stewart, 2004) The graphs below represent the reasons Americans cited for choosing the Smart Growth or Sprawl scenario and factors in deciding where to live. (Belden Russonello & Stewart, 2004)



Benefits of mixed use development to commercial properties include “built-in” demand from a higher localized population cluster, which would hopefully translate to higher occupancy, longer useful lifespan of structures, and lower parking demand due to proximity of consumers. Environmental benefits include less land consumption, fewer or shorter automobile trips, and less impervious surface compared to conventional development. Mixed-use developments offer both horizontal and vertical mixing of land uses and residential land use types. Typically, higher density dwellings occupy the upper floors of commercial buildings with stand alone apartments on the fringe of the center, then working down in density as the dwellings move outward from the center.

Assisted Living and Nursing Homes

As previously mentioned, we cannot ignore the fact that our population both nationally and locally is aging. No matter what the trend is for aging in place, we will undoubtedly see a substantial increase in the need for services, facilities, and housing for the elderly. A wide spectrum of options exists today ranging from independent retirement communities to assisted living facilities to nursing care. By 2040, Lancaster County could have more than 9,000 additional people living in group quarters, many of whom will be in nursing homes and assisted living. All of these types will likely see a major increase in the years ahead to accommodate the wave of Baby Boomers, especially in the period from 2020 to 2040 as they age into their 70's and beyond. Demand is expected to persist with the retirement and aging of the Generations X and Y, but with less rapid growth in this housing sector if the supply is established for the Baby Boomers.

No matter what the trend is for aging in place, we will undoubtedly see a substantial increase in the need for services, facilities, and housing for the elderly.

Similar to multi-family and mixed use, housing facilities for the elderly should consider the surrounding land uses when locating a new site. Access to transit and commercial areas will be key in assuring residents can have an independent lifestyle regardless of their ability to own or drive a car. Not only is this a good thing for the residents from both a physical and psychological standpoint, but the local business community ultimately stands to profit when there are more shoppers visiting stores with freedom to buy what they need on their own independent schedules.

Housing Options Summary

Even if the impacts of world trends in climate and human migration are ignored, housing demands are almost guaranteed to change based on national demographic pressures. Due to their sheer numbers, the two most impactful groups--the Baby Boomers and Generation Y--will play the biggest role in shaping our housing demand future. Tailoring housing products and locations to the needs and specifications of these two major groups will likely be the road to residential development success.

The 2040 Lincoln-Lancaster County Comprehensive Plan should address the issue of housing trends by re-evaluating preferences and priorities of the past and present and recommend future change in land use where it makes the most sense in terms of these trends and infrastructure costs. The national trends and research on housing preferences appears to be leaning toward higher densities in general with more amenities within walking distance. Predicting the lifespan and quantity of housing supply by type and projecting demand by housing type will result in key indicators of how the City should develop to meet future needs and keep all housing types affordable.

B. Employment

A total of 207,845 people were employed in Lancaster County in 2008 according to the Bureau of Economic Analysis. About 36,659 of these were self employed and/or employing other people. The distribution of employment in three main sectors was as follows: 53 percent in business and commerce; 30 percent in industrial; and about 17 percent in the government sector.

The Business and Commerce sector was the fastest growing sector in the last decade since 2000. This sector grew at an average rate of growth of 1.83 percent per year. This was below the anticipated two percent average rate of growth in the current 2030 Comprehensive Plan. Education, Health, and Professional Services are the highest employment providers in this sector contributing more than 50 percent of the jobs. (Economic Analysis, 2009)

The Business and Commerce sector was the fastest growing sector in the last decade since 2000.

Employment in the industrial sector declined since 2000, at an average rate of growth of negative 0.45 percent per year, below the anticipated 2.5 percent growth in the current 2030 Comprehensive Plan. Trade, Transportation and Utilities are the highest employment providers in this sector, contributing about 58 percent of the industrial jobs in 2008. (Economic Analysis, 2009)

The Government sector was the most stable employment sector maintaining its share of the total employment at roughly 17 percent. The Government sector grew at an average rate of growth of 1.13 percent per year. The State government is the highest employment provider in this sector, contributing about 49 percent of the jobs. (Economic Analysis, 2009)

To estimate employment growth in Lancaster County over the next 30 years to 2040, two sources of information have been used to show a range of possibilities: Woods and Poole and the Bureau of Business Research (BBR) at UNL. Both sources have projected the employment of Lancaster County and its characteristics using economic models and tools.

The employment in Lancaster County is projected to be 296,714 according to Woods and Poole (Poole, 2010) and 317,836 according to BBR (Thompson, 2010). These projections show an annual average growth rate of 1.20 percent and 1.41 percent, respectively. The projected growth rate is similar to the 1.26 percent growth rate of the past decade, but lower than the projected growth rate of two percent in the 2030 Comprehensive Plan.

For clarity this report primarily uses one set of numbers for analysis: data from the Bureau of Business Research (BBR) at UNL. BBR data is specifically customized to Lancaster County. Local data together with Bureau of Economic Analysis data is used to calculate these projections.

Total Employment as a Percent of the Population

The total employment in Lancaster County is projected to increase by 108,713 jobs to reach a total of 317,836 jobs in 2040. This shows an average annual rate of growth of 1.41 percent. This rate of growth is higher than the current 1.26 percent per year but lower than the anticipated growth rate of two percent in the 2030 Comprehensive Plan. The projected rate of growth of employment is higher than the projected growth rate of population.

An article by Mitra Toossi, an economist with the Bureau of Labor Statistics suggests that in the next half century (2000 to 2050), the labor force characteristics in the country will see gradual but significant changes. She indicates that with a slower growth rate in both population and labor force, the factors that will be important will be:

- Changes in the gender structure of the labor force: labor force participation of women will increase from the last decades
- Changes in the age structure of the labor force: the Baby Boomer generation – the older age cohorts – are expected to make up a larger proportion of the labor force
- Changes in the racial and ethnic composition of the labor force: the labor force is expected to become more diverse, with a substantially higher share of minorities in the workforce (Toossi, *A Century of Change: the U.S. Labor Force, 1950–2050*, 2002)

In another article by Mitra Toossi, she identifies that, as the Baby-Boom generation ages, the share of workers in the 55-years-and-older age group will increase dramatically. The participation rates of older workers in the labor force are expected to increase, but will remain significantly lower than those for the prime age group, and, as a result, the participation rate and overall labor force growth rate will decline. (Toossi, *Labor Force Projections to 2018: Older Workers Staying More Active*, 2009)

With an increasing aging population and decreasing workforce population, there can be several possibilities to explain the higher employment numbers. Listed below are some of the possibilities:

- People are traveling from other counties to work in Lancaster County
- More people have multiple jobs
- More families have both partners earning wages
- People are continuing to work long after their retirement age

Distribution of Jobs and Growth Rates

In the next 30-year planning period, until 2040, employment in the county is increasing in all sectors, albeit at different rates.

The industrial sector, which showed a decline in the last decade, is projected to increase by about 0.98 percent per year. This is below the anticipated growth rate of 2.5 percent in the 2030 Comprehensive Plan. This sector's share of the total employment in the county decreases from about 30 percent in 2010 to 28 percent in 2040.

The Government sector employment is projected to grow at 1.02 percent annually, similar to the projected population growth rate. This sector's share of the total employment will decrease from about 17 percent in 2010 to 15 percent in 2040.

Total Employment and Growth Rate (2010-2040)											
Years	Numbers				Percent of the Total			Growth Rate			
	Total Employment	Industrial	Business & Commerce	Government	Industrial	Business & Commerce	Government	Total Employment	Industrial	Business & Commerce	Government
2010	209,123	65,561	108,070	35,494	31.4%	51.7%	17.0%				
2025	273,838	79,808	151,192	42,837	29.1%	55.2%	15.6%	1.81%	1.32%	2.26%	1.26%
2040	317,836	87,832	181,855	48,148	27.6%	57.2%	15.1%	1.41%	0.98%	1.75%	1.02%

The Business and Commerce sector is projected to be the fastest growing sector with an annual increase of 1.75 percent. This growth rate approaches the two percent anticipated in the 2030 Comprehensive Plan and just a little slower than the last decade. This sector's share of total employment increases from about 53 percent in 2010 to 57 percent in 2040.

Highest Employers in Each Sector

Industrial – Employment in mining and utilities decreases in the next 30 years but increases in construction, manufacturing, trade, warehousing and transportation. Construction is projected to have the highest growth rate of 1.34 percent annually. Trade and Transportation also grow at more than 1 percent annually.

Employment Distribution in the Industrial Sector								
Industries	Numbers			Percent of the Total			Growth Rate	
	2010	2025	2040	2010	2025	2040	2025	2040
Mining	121	100	86	0.1%	0.0%	0.0%	-1.26%	-1.13%
Utilities	78	64	55	0.0%	0.0%	0.0%	-1.31%	-1.16%
Construction	11,550	15,101	17,217	5.5%	5.5%	5.4%	1.80%	1.34%
Manufacturing	15,459	17,648	18,030	7.4%	6.4%	5.7%	0.89%	0.51%
Wholesale trade	4,844	6,053	6,652	2.3%	2.2%	2.1%	1.50%	1.06%
Retail Trade	22,252	27,126	30,857	10.6%	9.9%	9.7%	1.33%	1.10%
Transportation and Warehousing	11,257	13,716	14,935	5.4%	5.0%	4.7%	1.33%	0.95%
Total Industrial	65,561	79,808	87,832	31.4%	29.1%	27.6%	1.32%	0.98%

Government – The Government sector shows a steady increase of more than 1 percent annually. All forms of government - federal, state and local, grow at similar rates annually.

Employment Distribution in the Government Sector								
Industries	Numbers			Percent of the Total			Growth Rate	
	2010	2025	2040	2010	2025	2040	2025	2040
Federal, civilian	2,828	3,140	3,353	1.4%	1.1%	1.1%	0.70%	0.57%
Federal, Other	1,249	1,534	1,775	0.6%	0.6%	0.6%	1.38%	1.18%
State and local	31,417	38,163	43,020	15.0%	13.9%	13.5%	1.31%	1.05%
Total Government	35,494	42,837	48,148	17.0%	15.6%	15.1%	1.26%	1.02%

Business and Commerce – While the entire sector grows at an average rate of 1.75 annually, some industries grow at more than two percent annually. Administrative and Waste services, Health Care and Social Assistance and Accommodation and Food services all show a growth rate of more than two percent annually.

Finance and insurance shows a slower growth rate in the beginning and then increases toward the end of the 30-year planning period, for an average of 1.74 percent annually. In view of the

Employment Distribution in the Business and Commerce Sector								
Industries	Numbers			Percent of the Total			Growth Rate	
	2010	2025	2040	2010	2025	2040	2025	2040
Accommodation and food services	13,697	20,354	24,452	6.5%	7.4%	7.7%	2.68%	1.95%
Administrative and waste services	10,469	15,975	19,791	5.0%	5.8%	6.2%	2.86%	2.15%
Arts, entertainment, and recreation	4,582	6,074	6,906	2.2%	2.2%	2.2%	1.90%	1.38%
Educational services	3,719	5,142	5,884	1.8%	1.9%	1.9%	2.18%	1.54%
Finance and insurance	13,877	18,319	23,305	6.6%	6.7%	7.3%	1.87%	1.74%
Health care and social assistance	23,612	34,904	43,761	11.3%	12.7%	13.8%	2.64%	2.08%
Information	3,069	4,006	4,564	1.5%	1.5%	1.4%	1.79%	1.33%
Management of companies and enterprises	3,205	3,940	4,299	1.5%	1.4%	1.4%	1.39%	0.98%
Other services, except public administration	11,288	14,645	16,444	5.4%	5.3%	5.2%	1.75%	1.26%
Professional and technical services	13,244	18,740	22,164	6.3%	6.8%	7.0%	2.34%	1.73%
Real estate and rental and leasing	7,308	9,093	10,285	3.5%	3.3%	3.2%	1.47%	1.15%
Total Commerce	108,070	151,192	181,855	51.7%	55.2%	57.2%	2.26%	1.75%

current recession, this may be expected. Professional and Technical services and Educational services show a high growth rate initially, and then slow down for an average annual growth rate of 1.73 percent and 1.54 percent annually, respectively.

2025 Midpoint Data Description and Implications

The projected total employment grows at a slightly higher rate in the first 15 years, until 2025, at 1.81 percent annually. This is higher than the projected 1.28 percent population growth in the same period, but is consistent with the higher rate of population growth in this time frame. The three primary sectors are all projected to show a higher growth rate until 2025, and then slow down slightly until 2040.

The Industrial sector has a more gradual decrease in its loss of the share of the total employment. Business and Commerce jumps 3-percentage points until 2025, then 2-percentage points, for a total of a 5-percentage point jump in employment until 2040. The Government sector loses some of its share of the total employment until 2025, and then steadies over until 2040.

C. Land Use Analysis

While a Comprehensive Plan has many components, at its center is a “future land use plan” that graphically maps the community’s vision for the future, as embodied in the Plan. That future land use plan illustrates answers to the questions of where, how much, and for what land uses the community hopes to expand and/or redevelop within the planning period. It also provides a framework for designing the transportation system and other infrastructure systems to properly support the land uses.

This section of the Living and Working in 2040 report will not answer those questions, but rather will provide information and frame issues that should be considered. For context, we look back 30 years and review briefly the community’s size—both in people and land area—in 1980. Then we describe the current 2030 Comprehensive Plan adopted in 2006 and the proposed growth areas and assumptions embodied in that Plan. We review the current conditions of Lincoln and Lancaster County in 2010 relative to growth since the 2030 Plan was adopted. Finally, we outline the information and assumptions about potential land use that must be considered in making these decisions for the 2040 Comprehensive Plan. We also will include a “mid-point” look at where the community may be in 2025, halfway through the next 30-year planning period.

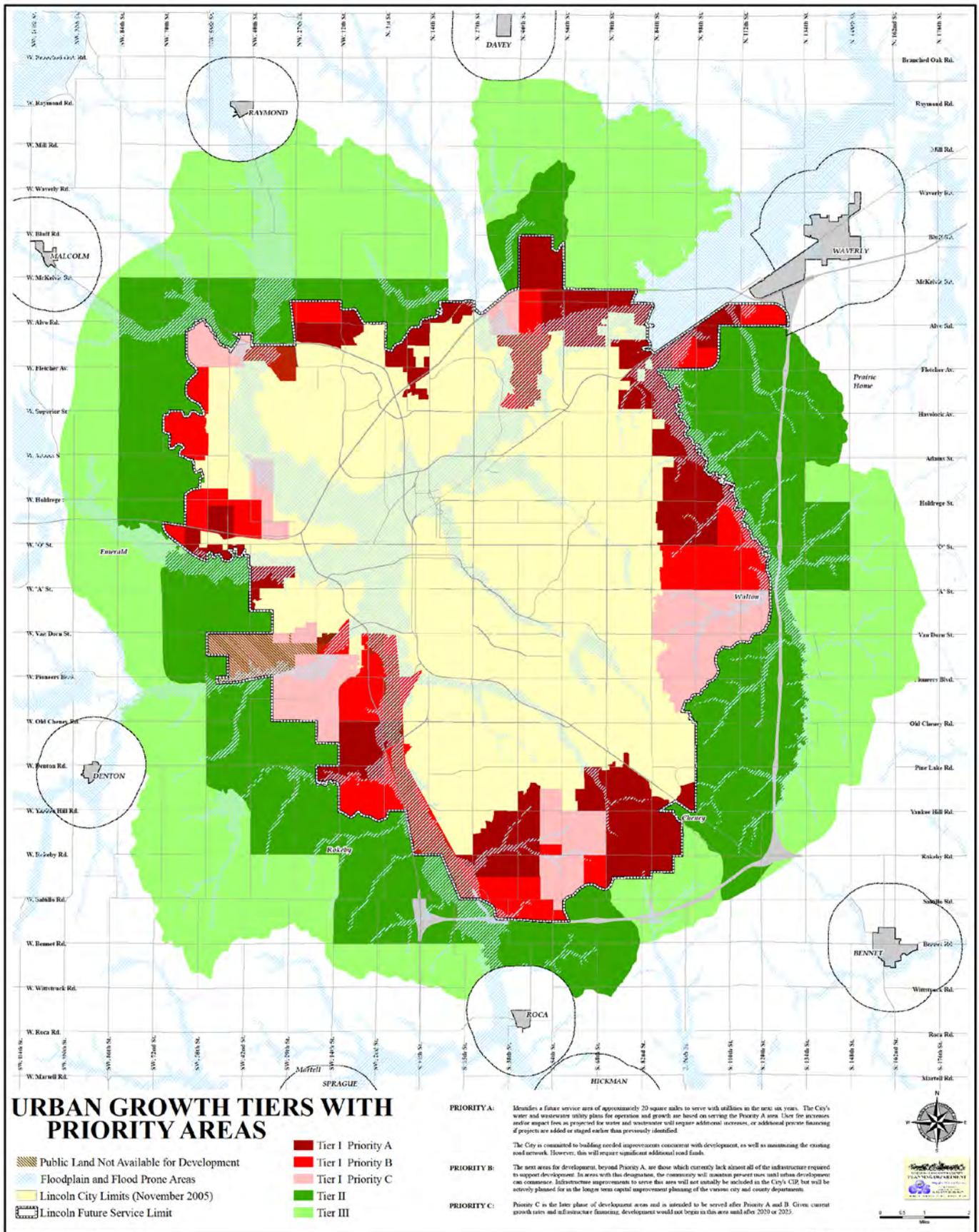
Lincoln/Lancaster County in 1980

The 1980 Census placed the Lancaster County population at 192,884 residents, of whom 89% lived within Lincoln. At that time, 10% of the population was over 64 years of age and 45% was younger than 25 years old. Lincoln’s corporate limits in 1980 encompassed 60 square miles, approximately 7% of the County’s 847 square miles. Household size in Lancaster County, according to the 1980 census, was 2.52 persons per dwelling unit, a marked decline from the 1970 rate of 2.89 persons.

2030 Comprehensive Plan (adopted in 2006)

The Lincoln-Lancaster County Comprehensive Plan, adopted in November 2006, prioritizes the community’s pattern of growth through maps outlining the future land use for the city and county along with the “Urban Growth Tiers with Priority Areas” map. (See map on next page.) This map includes the “Lincoln Future Service Limit” that identifies the expected areas for urbanization through the year 2030.

On the Urban Growth map, Tier I is envisioned as a 52 square mile area which could reasonably expect urban services within the next twenty five year period. Tier II offers another 70 square miles expected to accommodate the community’s growth after Tier I (therefore, after 2030), while Tier III includes an additional 85 square miles where urbanization might occur after 2055.



URBAN GROWTH TIERS WITH PRIORITY AREAS

- Public Land Not Available for Development
- Floodplain and Flood Prone Areas
- Lincoln City Limits (November 2005)
- Lincoln Future Service Limit
- Tier I Priority A
- Tier I Priority B
- Tier I Priority C
- Tier II
- Tier III

PRIORITY A: Identifies a future service area of approximately 20 square miles to serve with utilities in the next six years. The City's water and wastewater utility plans for operation and growth are based on serving the Priority A area. User fee increases and/or impact fees as proposed for water and wastewater will require additional increases, or additional private financing if projects are added or staged earlier than previously identified.

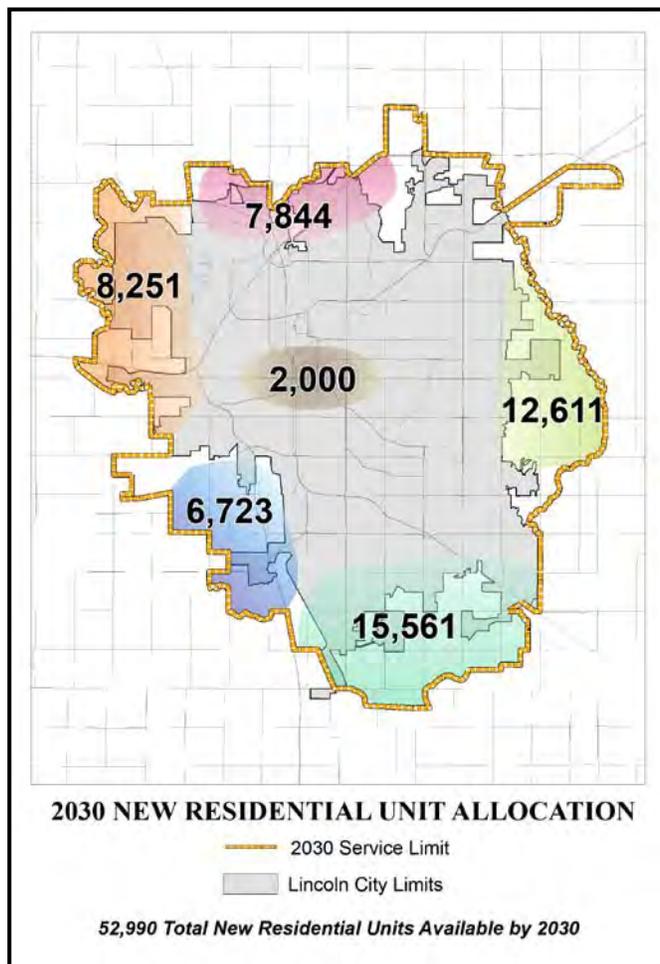
The City is committed to building needed improvements concurrent with development, as well as maintaining the existing road network. However, this will require significant additional road funds.

PRIORITY B: The next areas for development, beyond Priority A, are those which currently lack almost all of the infrastructure required to support development. In areas with this designation, the community will maintain present (use) until urban development can commence. Infrastructure improvements to serve this area will not initially be included in the City's CIP, but will be actively planned for in the longer term capital improvement planning of the various city and county departments.

PRIORITY C: Priority C is the later phase of development areas and is intended to be served after Priority A and B. Given current growth rates and infrastructure financing, development would not begin in this area until after 2030 or 2025.

The 2030 Plan projects a county population of 391,000 by 2030 (up from an estimated 265,000 in 2005), based on a rate of population growth of 1.5% each year. It assumes this population would require approximately 52,000 new dwelling units (DUs) in Lincoln. A density of 3 DUs per gross acre (including streets, parks, and other non-residential uses) is assumed. It assumes that about 70% of these residences would be one or two family homes, and 30% apartments. Approximately 96% of the new dwelling units are projected to be provided in new development areas at the “edges” of the existing urban area, and about 4% in the “core” city. (See 2030 New Residential Unit Allocation map below.) The 2030 Plan assumes continuation of a population distribution of 90% of the residents living within Lincoln and 10% in the rest of Lancaster County.

Other major land use categories include commercial and industrial uses. The 2030 Plan includes 20 million additional square feet of commercial development (150 sq. ft. per person on average) and 1,724 additional acres of industrial land.



Current Conditions – 2010

Lancaster County’s population in 2010 is estimated to be approximately 287,000. Based on this estimation, the community has grown at 1.33% per year over the last 30 years and at a similar 1.38% annually since 2000. The long-standing trend of a 90/10 distribution of residents between Lincoln and Lancaster County (excluding Lincoln) appears to have remained consistent for the last 30 years. The community has about 113,000 dwelling units and about 2.4 persons per household. Over the last 15 years, single family houses and duplexes have constituted 71% of new residential construction, and multi-family dwellings have made up 29%. The projected rate of 3 DUs per gross acre in the new, developing edges of the city appears to have been realized. In addition, there is a current “inventory” of 16,707 units approved for single family and multi-family homes as of January 1, 2010. (See 2010 Available Residential Unit Supply map

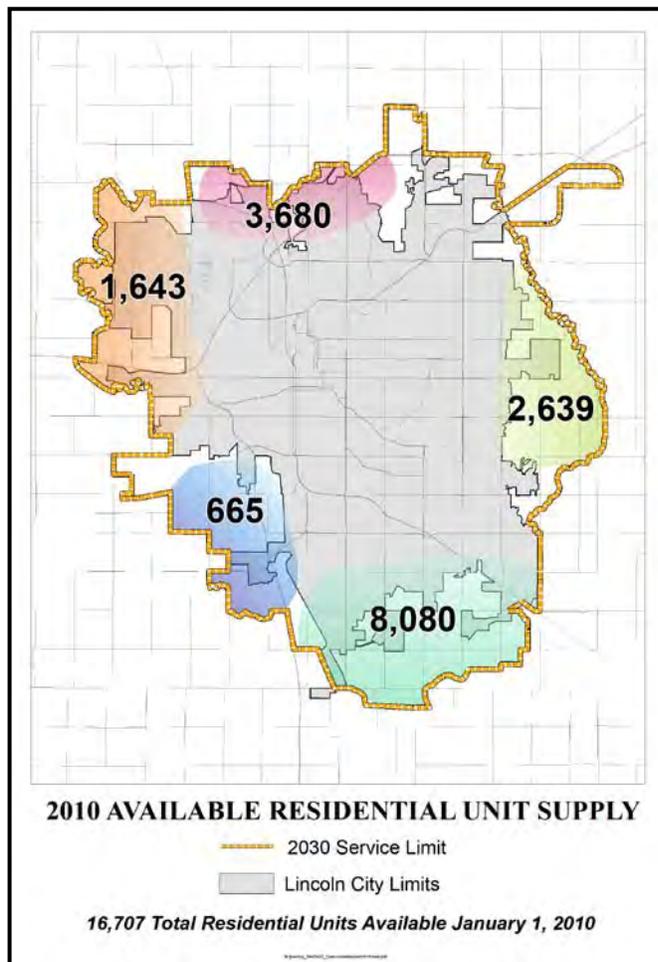
on the next page.)

The city currently has over 40 million sq. ft. of occupied commercial space and 4.7 million sq. ft. vacant for a total of over 45 million sq. ft. of commercial space. An additional potential supply

of approximately 13.3 million sq. ft. of commercial space has been proposed by developers and approved by the City, but not yet built. (See Approved Not Built Commercial Inventory map on Page 45.) It is useful to regard this large number as a measure of the capacity of currently zoned land when projections for future demand are considered.

2040 Projections

As described in more detail in the section above on population projections, three sources of



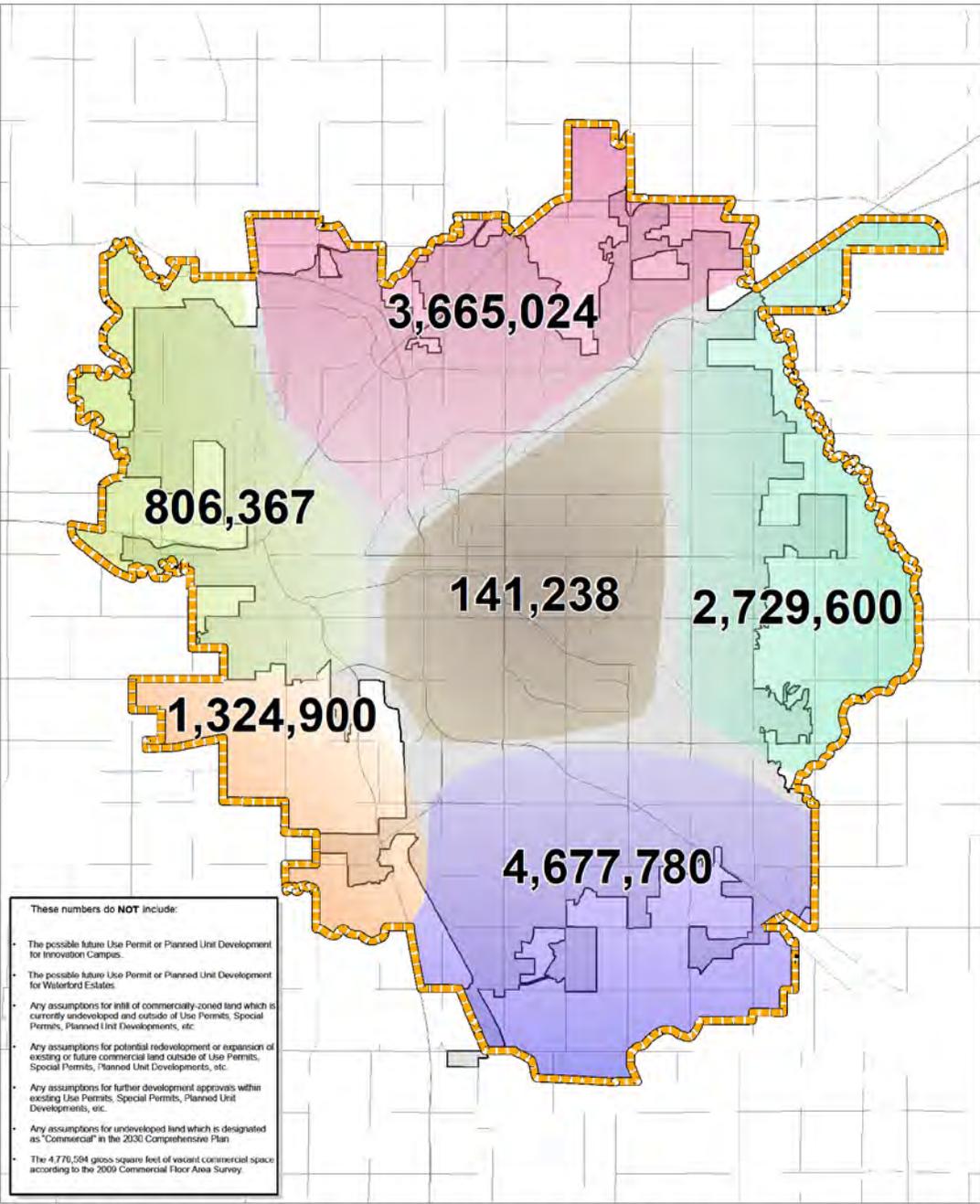
demographic information were consulted for the 2040 Comprehensive Plan Update. Those estimates for the Lancaster County population in 2040 ranged slightly above or below 400,000, based on annual growth rates between 1.1% and 1.22%. For purposes of this discussion, we will use the highest projections of a 1.22% rate of growth and 413,000 persons. All three projections indicate the community should plan for at least 110,000 additional residents by 2040.

Within that projected population, the demographers describe several significant shifts in the relative sizes of various age groups which will have implications for the characteristics of housing and households in our community's future. One projection is that average household size will decrease to an estimated 2.35 persons per household. Based on that household size, the increased population by 2040 may need an additional 52,000 DUs—nearly 50% more than those existing in 2010. Additional occupied commercial

and industrial space is also projected to be needed by 2040—18.8 million sq. ft. of commercial space (calculated at 150 sq. ft. per person per the 2030 Plan assumption) and 1,471 additional acres of industrial land (calculated at 11.7 acres per 1,000 persons per the 2030 Plan).

2025 Midpoint of 2040 Plan

Making a brief mention of the 2025 midpoint in the planning period is a good reminder that comprehensive planning requires both a long view, and adjustments along the way. In fact, Lincoln and Lancaster County typically undertake a major update the Comprehensive Plan every decade, with a lesser effort midway between.



- These numbers do NOT include:**
- The possible future Use Permit or Planned Unit Development for Innovation Campus.
 - The possible future Use Permit or Planned Unit Development for Waterford Estates.
 - Any assumptions for mill of commercially-zoned land which is currently undeveloped and outside of Use Permits, Special Permits, Planned Unit Developments, etc.
 - Any assumptions for potential redevelopment or expansion of existing or future commercial land outside of Use Permits, Special Permits, Planned Unit Developments, etc.
 - Any assumptions for further development approvals within existing Use Permits, Special Permits, Planned Unit Developments, etc.
 - Any assumptions for undeveloped land which is designated as "Commercial" in the 2030 Comprehensive Plan.
 - The 4,776,594 gross square feet of vacant commercial space according to the 2009 Commercial Floor Area Survey.

APPROVED NOT BUILT COMMERCIAL INVENTORY

(Includes net sq. ft. of approved Pre-Existing Use Permits, Use Permits, Combined Use Permits/Special Permits, Pre-Existing Special Permits, Special Permits, and Planned Unit Developments. Also includes 495,000 sq. ft. for the Ringneck PUD at NW 48th and I-80 which is pending approval)*

----- 2030 Service Limit

Lincoln City Limits

13,344,909 Net* Square Feet of Approved Commercial Floor Area

***Net* excludes common areas, mechanical rooms, stock rooms, restrooms, etc*

Lancaster County's population is projected to be about 347,000 in 2025, with 26,500 new dwelling units needed for the increased population. An additional 9 million square feet of commercial space and 703 acres of industrial land are projected to be needed by that time.

Within the projections, certain trends are predicted to occur more sharply in the first half of the planning period—by 2025. In particular, the portion of the community's population over 64 years of age is projected to increase from about 31,000 persons to about 57,000. The increase is expected to continue through 2040, but not at such a sharp rate in the 2025-2040 period. All three demographic experts also suggest the overall rate of population growth in our community may slow after 2025.

Meeting the Projected Needs of 2040

Comprehensive Plans do not actually predict the future, but they play a role in preparing for and even shaping it. The Plan aids local government in making wise, efficient investments of the public's resources in infrastructure and other services, and informs property owners, businesses, and other organizations in their decisions about how to participate in our community.

The population of Lincoln and Lancaster County is projected to increase steadily through 2040, requiring increased facilities in which to live, work, and play. These increases can occur in many forms and in many places. The Comprehensive Plan Update should consider a range of assumptions and options in describing the community's preferred future form.

As detailed above, perhaps 52,000 new dwelling units will be needed by 2040. If simply calculated at 3 DUs per acre, 26 square miles of new urbanized area might be added to the existing city. However, the rapid growth of residents 65 and over may significantly increase the demand for multiple-family and assisted living facilities, increasing the density of DUs per acre. An increase to 4 DUs per acre would decrease the potential area needed below 20 square miles. The projected mix of types of dwellings in the 2030 Plan — 70% single family/30% multi-family — should be considered in light of the previously discussed demographic shifts, energy costs, and other trends. **All of these factors indicate that projected residential land uses based on "dwelling units per acre" will need to be reviewed, thoroughly discussed, and decided in the update process.**

In addition, Lincoln's current inventory of available vacant residential lots could accommodate nearly 17,000 DUs. At the current rate of utilization, this supply would take 18 years to develop, but hopefully better economic times are ahead. Even in "boom" times, however, this inventory might take a decade to utilize. In addition, the areas that contain these approved DUs are considered committed and are expected to meet the initial portion of the overall 30 year demand of 52,000 DUs. Thus it can be stated that less than 40,000 DUs are in need of approval over the next 30 year period with a related decreased impact on land consumption at the edge of the community. It also can be stated that the current land area of Tier I is sufficient to meet the projected land use demand through 2040. **The update process should carefully examine when, where, and how much of Tier I can and should be projected for development by 2040, including ability-to-fund needed public infrastructure.**

The 2030 Plan projected that 2,000 of the needed dwelling units might be provided in the “core city” through redevelopment in Downtown, Haymarket, Antelope Valley, with the remainder of the city held constant — about 4% of the projected need at that time. The changes in the community’s demographic characteristics as described in this report might increase demand for various smaller-lot, apartment/condominium, accessory and assisted living housing, including in the established areas of the city. For illustration, consider that the higher density residential zoning districts of the city (R-5 through R-8) include some 1,340 acres of land, developed with 16,683 dwellings. The maximum density allowed by current zoning would allow up to 38,275 additional units—an unlikely scenario, but an illustration of potential currently allowed by zoning that might be partially realized in meeting the community’s changing needs, within existing infrastructure. In recent years numerous senior housing facilities have developed or expanded in both the core and on the edges of Lincoln. Maintenance of existing infrastructure is an on-going necessity and urgent financial challenge, but existing water and sewer capacities in the established city are generally not an impediment to additional housing density, according to Public Works & Utilities’ experts.

Additionally, the city’s commercial and office zoning districts include 6,337 acres—nearly 10 square miles—of land, most of which allows mixed uses including residential (as seen Downtown and in Haymarket). Some commercial uses become obsolete as economic and social trends change shopping and employment patterns. Lincoln has seen many successes in adaptive uses of existing buildings or redevelopment into new patterns in Haymarket, Downtown, and throughout the city. If future redevelopment includes townhouses, apartments, or condos in mixed use projects, those 6,000-plus acres could produce significant numbers of new dwelling units.

As mentioned above, the 2030 Comprehensive Plan projected only about 2,000 units—4% of the projected need—within the established areas of the city. At our current average gross density, 2,000 new dwellings on the edges of the city utilize about a square mile of land, with accompanying needs for new infrastructure including streets, water and sewer lines. **In the development of the 2040 Plan, consideration should be given to alternatives that might adjust the core/edge ratio of the location of new dwelling units from the current 4%-96%.**

Conclusion

We must plan for a larger, older, more diverse Lincoln and Lancaster County by 2040 that surely will utilize and be affected by new technologies. But ultimately, our continued viability will depend on the extent to which we value community and quality of life. Wise planning is essential to retain the qualities of our community that we treasure and that attract new residents. Wise planning must also include recognizing the ways in which Lincoln and Lancaster County can and will change.

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