

**Livingston
County
Senior
Needs
Assessment**

**Full Report
May 2008**

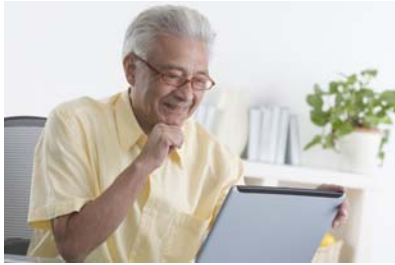


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Executive Summary

Why Now?

Livingston County's senior population (60 and older) is expected to increase 216% by 2030 and seniors 75-84 years old are expected to increase 292% by 2030.¹ Not only is the senior population increasing, this segment of the community is growing faster than any other age group.² This significant increase provides both great opportunities for our community, as well as additional challenges for businesses and our system of services and supports for seniors and their families.

Concerns about seniors and soon to be seniors came to the forefront with the release of the 2004 Behavioral Risk Factor Survey and additional examination of population trends. Survey results showed that many seniors and those 55-64 had serious health risks that could lead to limitations in quality of life and possible admission to long term care facilities. In addition to the Behavioral Risk Factor Survey, a Livingston County United Way survey indicated that senior issues were one of the top priorities for local residents.

It is not surprising that senior issues are on the forefront of the community's thoughts. In a 2003 AARP study, 85% of people 45 and older wished to stay in their own home for as long as possible.³ Seniors are a growing powerhouse in both financial and knowledge assets. Yet, recent studies are showing major risk factors that affect both current seniors and people in their 50's and early 60's can have a substantial impact on retirement wealth. Seventy-five percent of people 51-61 are expected to face a major life shock over the decade, from job layoff or limitation, major illness, loss of a partner, or major illness of a parent or in-law.⁴

If Livingston County residents stay healthy and stable for as long as possible, they increase the likelihood of maintaining a high quality of life and bring an incredible richness to the community fabric. The Senior Needs Assessment report should be viewed as an important tool for future planning and to assist the county in efforts towards becoming known as a senior friendly community.

The Senior Needs Assessment Project

The Senior Needs Assessment project was launched in August of 2006, after the Livingston County Human Services Collaborative Body endorsed the project and charged a workgroup to complete a thorough needs assessment of senior strengths and needs currently and in the future. Funds to support the project were received from the Community Foundation of Southeast Michigan, the Livingston County United Way, the Consortium on Aging, and in kind support from the Livingston County Department of Public Health. The process was completed in one year and identified assets and deficits in current senior services and best practices in senior services and elder friendly communities.

The information collected was used to develop recommendations that will guide strategies over the next decade to meet the needs of the changing senior population. The recommendations also reflect local data, National and State trends, best practice information, and local community feedback. Committee members represented 17 different non-profit organizations and agencies that serve seniors, senior centers, senior businesses, and Livingston County seniors. Workgroups were organized around five key areas: Health, Housing, Nutrition/Healthy Lifestyle, Quality of Life, and Transportation.

Recommendations

Four major themes emerged from the recommendations of the senior needs assessment study that help frame the planning and implementation in future years. Specific recommendations for

each of the five study areas (Health, Housing, Nutrition/Healthy Lifestyle, Quality of Life, and Transportation) are listed below within four theme areas.

Active Aging

The concept of active aging includes healthy aging of the body and mind. Poor health has been linked with a decrease in independence, and increasing isolation among the senior population. Active aging also refers to seniors physically active and disease free for as long as possible and effectively managing chronic disease. Currently, 72% of people 65 and older report having been told they have high cholesterol and 58% report having been told they have hypertension.⁵ Healthy lifestyles have been linked with reductions in chronic disease, unnecessary hospitalizations, and delays in the onset of dementia and Alzheimer's.⁶

Recommendations

1. Develop a geriatric assessment model in Livingston County through partnership with St. Joseph Mercy Health System. Increase number of physicians specializing in geriatrics that practice in the county.
2. Encourage the use of existing wellness activities and the creation of additional activities based on programs and practices recommended by the National Council on Aging, other research based models, and local senior input.
3. Provide education and training opportunities and promote the use of technology for seniors focusing on prevention including chronic disease self management models, physical activity, good nutrition, safe driving, medication management, and self advocacy.

Aging in Place

The vast majority of seniors prefer to stay in their home of choice for as long as possible. Home-based care may be less costly than nursing home or assisted living facilities, but there may be many barriers to people living safely in their own home.

Two barriers to aging in place are housing and transportation costs. According to most recent assessments based on income levels, over 4,000 Livingston County seniors 65 and older would need rental assistance to afford an apartment at fair market rent rates.⁷ In a recent Livingston County transportation survey, over 12% of respondents said they had difficulty getting their transportation needs met.⁸

Health complications may also make it difficult for seniors to maintain stability in their own homes. In 2000, falls for seniors 65 and older accounted for 1.8 million emergency room visits nationwide, and cost roughly \$16.4 billion.⁹ Not only are falls costly, but they also limit a senior's mobility and independence. A strong system of support is necessary to enable seniors to be safe in their homes.

Recommendations

1. Ensure all seniors have access to safe, affordable housing through the following efforts:
 - a. Increase access to Housing Choice Voucher program for seniors
 - b. Advocate for senior friendly ordinances in local townships
2. Increase capacity and access to in-home supports in the county including, but not limited to home chore and maintenance assistance, respite, home health care, case management, medication management, home delivery of prescriptions, food, and supplies, and medical equipment lending.

3. Increase availability and use of home modification by:
 - a. Promoting the use of Aging in Place specialists
 - b. Developing a secure stream of funding and low interest loans for home modifications
 - c. Publicizing availability of home modification supports through 211
 - d. Creating incentives to increase the use of universal design (barrier free) in new construction

4. Develop fall prevention education and information to seniors and their caregivers and work with local facilities to better track injuries related to falls in the community.

Community Engaging Seniors

Community engaging seniors includes outreach to seniors who are homebound and socially isolated, or seniors who have other unique needs and offering inclusive and interactive enrichment opportunities. Seniors who are isolated or reliant on others for their care are more at risk for abuse, neglect, and exploitation.¹⁰ Developing and coordinating a system of volunteers who can provide outreach, education, transportation, and support to seniors and their caregivers are essential to a complete senior system.

Engagement also recognizes that seniors are an important asset to our community and that enrichment opportunities must be inclusive and welcoming. Workforce projections estimate that as the boomers age, they will be more likely to stay in the workforce longer, but may scale back their hours and responsibility.¹¹ Volunteerism estimates also indicate a large increase in the number of seniors seeking meaningful volunteer opportunities in their community.¹²

Recommendations

1. Increase use of volunteers to assist seniors in the community. Work with the Livingston County United Way to strengthen existing work on development of a local Volunteer Center to ensure pool of volunteers are secured to assist with senior needs including transportation, home chores and maintenance, and grocery and prescription deliveries. Explore the Yale model that pairs volunteers with hospitalized seniors.

2. Encourage education and employment within the senior population by:
 - a. Supporting the development and use of technology at key access points in the county such as senior centers and libraries to connect seniors with information and opportunities
 - b. Supporting sustainability and expansion of adult community education in the county
 - c. Engaging employment and economic development groups in discussions about workforce needs of seniors
 - d. Securing funds for workforce re-training

3. Increase outreach to home bound seniors to assess needs, connect with services, and prevent elder abuse/neglect and exploitation. Train current in-home providers and volunteers to utilize the same assessment and information and referral process.

Community Infrastructure and Supports

Community infrastructure includes access to information and service delivery systems delivered in a multitude of ways. Use of technology to ensure up-to-date, accurate information on senior related issues is essential to ensure efficient and timely information to seniors and their caregivers. Senior Centers are another critical component of the information and service delivery systems. Senior Centers across the country have been the operating place for innovative wellness

programs, education, and social connections.¹³ Currently, senior centers in Livingston County are limited by their size, hours of operation, and funding.¹⁴

Another important concern is access to supportive services which assist frail older adults maintain independent living with dignity. Many seniors cannot afford to purchase needed in-home services at private market rates, and low cost services such as home delivered meals, in-home care, and household chores have significant wait lists.

A primary recommendation from the Senior Needs focus group was the coordination of information and resources that exist within the community, including marketing, distribution of information, and the centralization of data. Seniors and their families complain about how complicated and difficult it can be to find information when it is needed most. A coordinated information system, utilizing existing avenues is essential to creating tangible community changes for seniors.

Recommendations

1. Develop and publicize a centralized resource for accessing information of interest to seniors including housing, transportation, health care, in-home supports, employment, and wellness and recreational activities. Ensure information is accessible to seniors through 211, printed materials, and/or in key locations in the community such as senior centers and libraries. Ensure specialized information on health care, disease management, and other health issues is available to seniors through physicians, health care systems, and at key places in the county.
2. Develop a community infrastructure which supports senior needs for mobility, health care, food, and social interaction and wellness activities.
 - a. Senior Centers – Strengthen and expand senior centers in the county to be a central location for accessing wellness and education services, recreation activities, health care information and services, and information and referral for services and supports.
 - b. Transportation – Develop a comprehensive public and private transportation system based on the Michigan Senior Mobility Plan and recommendations from The Corradino Group that includes 24/7 services, fixed routes, reflective lines, larger letters on street signs, and development of accessible pedestrian sidewalks and crossings to ensure a walkable community.
 - c. Health Care – Encourage the centralization and coordination of health care services in the county by locating several health care services in one place or in key locations where seniors gather and live. Coordinate transportation and medical appointments to assist with accessing services.
 - d. Food – Increase capacity and outreach of existing food system including:
 - i. working with local grocers to provide grocery deliver and online or phone shopping lists
 - ii. providing magnifying glasses in stores and ensuring signs are easily read by seniors
 - iii. advocating for changes in label colors and readability
 - iv. partnering with local farmers markets to develop a Senior Project Fresh Project in Livingston County.

3. Increase capacity and training for existing non-profit and for-profit senior services and supports to be able to serve all seniors seeking assistance including low income and at risk seniors and their caregivers. Ensure consistent training and information to service staff to increase consistency and quality across the service system.

Next Steps

With the projected increase in the Livingston County senior population coupled with the current limited access to community supports, transportation, housing, and recreation opportunities, Livingston County needs to prioritize senior needs in the county. This needs assessment document is a starting point to address gaps that were identified and to engage seniors and their families, community and business leaders in focused efforts to ensure that Livingston County is a supportive community for seniors to reside. While some recommendations listed in this report have private sector solutions, others will require efforts by local municipalities and non-profit organizations including the faith community.

The mechanism to ensure implementation and further work is to develop an oversight committee to take these recommendations, further examine the current system, and develop specific strategies and action steps to make these recommendations a reality. To this end, the final recommendation of this report is to develop a county Leadership Council on Aging that would provide direction and oversight to this initiative. Members of the Council would include key leaders in the community including business, government, non-profits, faith community, and seniors.

Investing in seniors is morally responsible and economically sensible. Current and future seniors comprise a large demographic and economic force in Livingston County. When implemented, the recommendations contained in this report will raise the overall quality of life in Livingston County for all residents, especially seniors, and make Livingston County a supportive and welcoming environment in which to live.

Why is Senior Planning Important Now?

Barb stood in front of the Consortium on Aging in September 2006. She appeared nervous, but her words were strong. "I would be embarrassed to bring my children to Senior Power Day with me." She was referring to the presentations and vendors at Senior Power Day (an annual Livingston County event) that concentrated on the frailty and decline of seniors, rather than their vitality and experience. Barb and her friends have difficulty finding information on recreational and fitness activities in the community. Activities like senior sports leagues are not available at all. Barb wonders why senior activities are not concentrated under one roof. "It would help if senior activities were centralized where people could get a variety of senior-related information and have a place to meet and socialize with people who have similar interests."

Sue is a mobility advocate. An avid bike rider, she uses an automobile only for the winter and very long trips. She utilizes Livingston Essential Transportation System at times, seeking to save gas and the environment. She works with a local transportation workgroup to help the group understand the limitations of public transportation and to encourage the community to expand services so that seniors can stay involved, engaged, and healthy for as long as possible.

Jim has been an active member of Livingston County's community for many years. As his wife's health declined, Jim limited his involvement in outside activities, finding it difficult to find in-home help that was consistent and reliable. As a former caregiver, and a senior, Jim has a unique perspective on what is needed in our community.

Laura has been the primary caretaker of her mother for several years. Her mother was diagnosed with Parkinson's at a very young age. As her mother's health declines and her condition becomes more complicated, Laura has to make difficult decisions regarding work, time with her husband and young daughter, and time with her mother. Laura struggles to find information as she navigates the confusing systems of housing, health insurance, medication, and in-home support.

The names have been changed in these stories, however these are real life examples of Livingston County residents who seek to live life to the fullest but struggle with the limitations of the county's system of senior services. All four come from different backgrounds, education levels, and ages. The Senior Needs Assessment process sought to identify the gaps in the service system and develop strategies to support seniors and their families and encourage an active, healthy aging process.

The Senior Needs Assessment process was undertaken to respond to four key pieces of information; a) population trend data that indicates a rapid increase in the number of seniors in the community, b) the 2004 Behavioral Risk Factor Survey results that showed seniors and soon-to-be-seniors as a major risk group for health and human services, c) a United Way survey where local residents prioritized senior issues, and d) experience of social service organizations, which struggle to address the needs of low and middle income older adults due to limited public resources, evidenced by wait lists for many services.

Responding to this data is essential in order to ensure sufficient supports and to prepare Livingston County to be an attractive place to live for seniors and their children. This report summarizes the process, the findings, and recommendations for next steps to make this vision a reality.

Process

The Senior Needs Assessment project was launched in August 2006, after the Livingston County Human Services Collaborative Body endorsed the project and charged a workgroup to complete a thorough needs assessment of senior strengths and needs currently and in the future. The Livingston County United Way received a grant from the Community Foundation of Southeast Michigan to staff the project, which was pooled with local resources from Livingston County United Way, the Consortium on Aging, and in kind support from the Livingston County Department of Public Health.

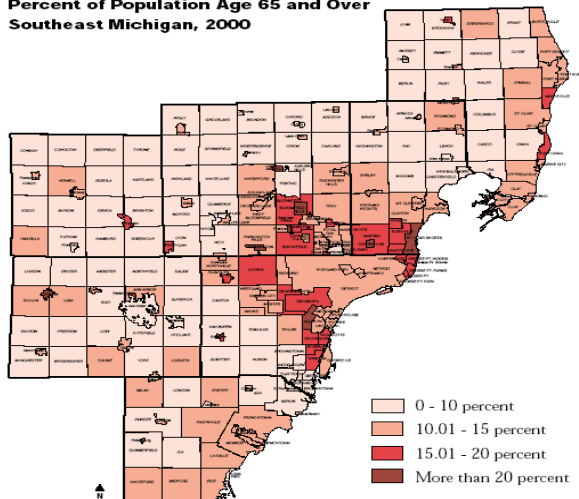
Five workgroups formed around the key areas of Health, Housing, Nutrition/Healthy Lifestyle, Quality of Life, and Transportation. Workgroup membership included representatives from local non-profits and public agencies, private businesses, and seniors. Workgroups identified assets and deficits in current senior services, and identified best practices. Recommendations contained within this report reflect local data, national and state trends, best practice information, and local community feedback.

Data was collected from several sources: 1) Senior Assessment completed by SEMHA (Southeast Michigan Health Association), 2) Behavioral Health Risk Factor Survey from 2004, 3) Livingston County Databook from 2003, 4) Census 2000 data, 5) US Census American Community Survey, 2005, 6) local data collection on resources, 7) March 2007 focus group, and 8) community survey testing of recommendations in May 2007.

Senior Population Trends and Needs

Livingston County's total senior population (60 and older) is expected to increase 216% by 2030 and the number of seniors aged 75-84 is expected to increase 292% by 2030.¹⁵ Not only are the numbers of seniors increasing, but the proportion of seniors to the rest of the community is as well. Data published by the Southeast Michigan Council of Governments makes a convincing argument for planning for this demographic trend.

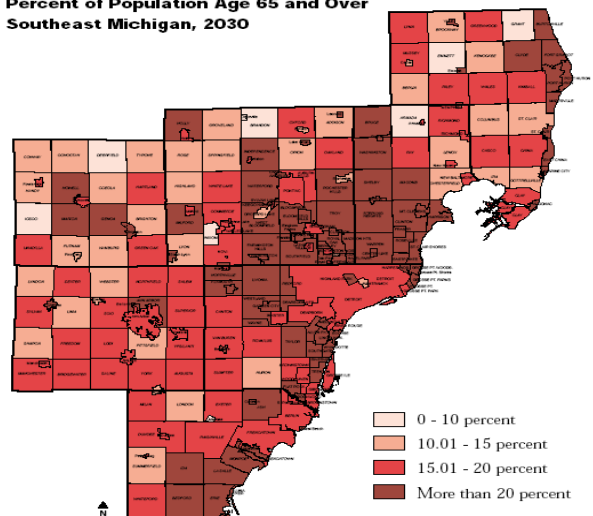
**Percent of Population Age 65 and Over
Southeast Michigan, 2000**



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**Percent of Population Age 65 and Over
Southeast Michigan, 2030**



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Migration Patterns

Migration trends from 1990-2000 indicate that the majority of seniors 60 and older are migrating into Livingston County from Oakland and Wayne Counties. Livingston County loses people 60 and older to Washtenaw County.¹⁶ Recent studies show local seniors who moved to Florida and other southern states are beginning to return to the North to be with family as their health declines.¹⁷ According to an AARP study, 59% of baby boomers plan to relocate in retirement and overall seniors stay where they feel connected to friends, family, and their community.¹⁸ Adjusted figures* suggest that the net population growth of persons age 60+ from 1990–2000 due to migration was 3,668, meaning approximately 70% of the growth in Livingston County’s age 60+ population from 1990-2000 can be attributed to net migration growth.¹⁹

Generational Differences

National data indicates there are generational differences in planning for seniors. Future seniors are expected to work longer, be more connected with technology, and be more outspoken about their needs. Baby boomers are also more likely to be part of the “sandwich generation,” caring for both children and parents.²⁰ These generational issues make community planning more complicated to address the needs of a population group that ranges in age from 60 to over 100 years.

Financial Security Concerns

Seventy-five percent (75%) of people 51-61 are expected to face a major life shock over the next decade including job layoff or elimination, major illness, loss of a partner, or major illness of a parent or in-law.²¹ These life shocks have a substantial impact on retirement wealth. For men who are forced out of the workforce before they are of retirement age, they can expect to lose 50% of their wealth.²² Locally, auto manufacturer buyout packages and early layoffs can have a major impact on the wealth prospects of members of our community.

Complications for this age group also include the lack of health insurance before Medicare becomes available and having adequate income to bridge the gap between full time employment and Social Security. Medical expenses are a major cause of bankruptcies in the United States.²³ Nursing home care is extremely costly and can absorb the majority of a family’s resources before government supports become available. Single women (widowed, never married, and divorced) are more likely to have a major health problem and tend to have fewer resources to cover expenses.²⁴ Local data shows that single adults are much more likely to report their health as fair or poor than married or partnered persons and 42% of widows find it “somewhat difficult” to pay for basic needs.²⁵ This reflects national data that indicates 17% of widows over 65 live below the poverty line, compared with 20% of divorced women, and only 4% of married women.²⁶

Health

Health is a critical concern for residents in Livingston County. Seventy-two percent (72%) of people 65 and older report having been told they have high cholesterol, 58% report having been told they have hypertension, and 10% of those 65+ report having been told they have diabetes.²⁷ These chronic diseases may decrease the life expectancy and quality of life for seniors.

Additionally, 22% of respondents 55-64 years old describe their health as fair or poor, a higher percentage than any other age group in the county. Twenty-two percent (22%) of 55-64 year olds report having been told they have diabetes.²⁸ Prevention and intervention are keys to keeping adults stable, healthy, and active. In 2000, falls for seniors 65 and older accounted for 1.8 million ER visits nationwide, and the costs are estimated at \$16.4 billion dollars.²⁹ Falls can shorten the life of a senior and limit their ability to live at home.

Poor health has been linked with a decrease in independence, and increasing isolation among the senior population. It is critical to address multiple aspects of health, including prevention and treatment of chronic diseases, better training of medical professionals, improved care at home, and increased access to and affordability of care.

Access to Health Care

Prior to creation of the new Medicare prescription drug benefit, access to and affordability of health care was of great concern to seniors. While the Medicare program has helped many seniors afford prescription drugs, the program's limited formulary (covered prescription drugs), gap in coverage, and reliance on generic drugs has kept access to needed medications a key senior issue. Over 50% of people 55 and older are paying at least \$50.00/month on prescriptions and a majority of Livingston County residents have expressed concern about paying for prescriptions.³⁰ In addition to prescriptions, local residents struggle to find physicians and nurses specializing in geriatric care.

As seniors age, their conditions become more complicated and symptoms can be easily misdiagnosed. Physicians, nurse practitioners, and other professionals who are trained in geriatrics have been shown to reduce the rate of hospitalizations for seniors.³¹ A 2006 report showed only two geriatric specialists in Livingston County, a ratio of one geriatrician per 3,300 persons 75 and older.³² The national average is one geriatrician per 2,500 persons 75 and older.³³ The closest geriatric assessment center where seniors may be assessed by a team of medical professionals is in Ann Arbor. Data also indicates that few medical students are choosing geriatrics as a specialty.³⁴

Housing

In national, state, and local data and dialogue about the senior population, housing is a primary concern. As seniors age there are questions about their ability to maintain their current housing situation safely and issues with housing affordability due to rising property taxes and the high cost of rental properties. There is also the broader debate about equity and choice in senior housing including assisted living and long term care, such as nursing homes.

The current cost of housing in Livingston County is significantly higher than for seniors in other parts of the state. The US Department of Housing and Urban Development (HUD) guidelines for affordable housing indicate that persons should not be spending over 30% of their income on rent or housing costs.³⁵ Census data indicates that 14.5% of Livingston County homeowners 65-74 years old are paying 35% or more of their income on housing costs. For those 75 and older 16.8% are paying 35% or more of their income on housing. This is 2.3 percent more than the State of Michigan overall rate. Seniors who are renting are in an even more difficult position. 59.6% of seniors 75 and older are paying 35% or more of their income on rent. The state of Michigan rate is 41.6% for seniors 75 and older.³⁶

The issues of housing affordability are even more magnified by examining Fair Market Rent figures. In Livingston County, the 2007 Fair Market Rent was \$760 for a one bedroom apartment.³⁷ Based on national figures for Social Security payments, no senior (or senior couple) could afford the fair market rent in Livingston County if the sole financial support was Social Security.³⁸ In fact, a person living solely on Social Security would need to earn between \$780 and \$1,458 more per month, depending on marital status, in order to afford an apartment. While some senior specific housing and rental supports are available in the county, there is not sufficient capacity to meet the needs of low income seniors. According to most recent housing assessments and based on local income levels, over 4,000 seniors 65 and older would need rental assistance to live in a typical local apartment complex.³⁹

Safe in Own Home

In a 2003 AARP study, 85% of people 45 and older wished to stay in their own home for as long as possible.⁴⁰ In order to stay safe in their own homes, seniors need a variety of supports from their friends, family, and the community. Home based care can be less costly than nursing home or long term care facilities, but is still very expensive. Some seniors need assistance with outside chores such as snow removal, lawn mowing, and leaf raking, while others need assistance with light housekeeping. Some in-home supports are more intense, such as help with meal preparation, toileting, or bathing. Sometimes seniors simply need someone to check in with them and help manage multiple medications. All of these supports can keep seniors in their homes for a longer period of time, and keep them safer.

Another important concept to help seniors stay in their own home is universal, or barrier-free design. Universal design allows people of all abilities to enter a home and use all of the necessary parts of the house for daily living. These features include many common sense items like first floor master bedrooms, first floor full baths, and 36" wide hallways and doorways. Homes can also be modified or built to accommodate a variety of abilities. Entryways can be built with "zero step" techniques so there are no stairs and no lip over the entrance threshold. Sinks can be plumbed to allow a wheelchair to roll underneath, and showers can be built so there is no step to trip over. In Livingston County, roughly 6% of rental units surveyed have these components⁴¹. There are an unknown number of houses built utilizing universal design concepts. However, communities across the country are embracing these principals and are stipulating that a portion of new housing developments contain homes complying with universal design. There are also certifications that builders can earn to become "Aging in Place Specialists" with a focus on universal design. Currently four builders located in Livingston County have this certification⁴².

Nutrition/Healthy Lifestyle

Good nutrition and healthy lifestyle has been linked with reductions in chronic disease, unnecessary hospitalizations, and delaying the onset of dementia and Alzheimer's.⁴³ Healthy lifestyles include physical activity, proper nutrition, and social connections. These three components are many times interconnected; people are more likely to exercise and eat well with support, and healthy choices may lead to more social connections.

As people age, many things may affect their interest in food, their ability to eat, and their ability to prepare or purchase foods. Medications and some chronic diseases may affect a person's sense of taste, which may result in a decreased appetite or loss of interest in food. These factors can be a deterrent for some seniors to consume adequate nutrients.⁴⁴ For others, the cost of food can be a barrier to eating the necessary nutrients to remain healthy and active. Still other seniors have difficulty using appliances such as the stove, or carrying groceries into the house. There are many ways to alleviate some of these problems that seniors face as they work to remain independent.

Proper nutrition is essential to keeping seniors healthy; however, information on food labels can be confusing as can the complexity of information available on healthy diets. Simple, standardized nutrition information that is easy to read would not only assist seniors with food preparation, but anyone interested in healthy eating.

Physical Activity

The Behavioral Health Risk Factor Survey asked Livingston County citizens about their level of physical activity. The results showed that 49% of people 55 and older fail to meet the recommended guidelines of 30 minutes of moderate activity 5 days per week, or 20 minutes of

vigorous activity 3 days per week.⁴⁵ Over 30% of seniors 65+ were considered inactive.⁴⁶ Eighteen percent (18%) of seniors surveyed were also considered obese (over 30 BMI), and 38% of those 55-64 years old were considered obese.⁴⁷ Roughly 46% of those 55 and older were considered overweight (BMI between 25 and 30).⁴⁸ Increased weight has been linked with higher rates of chronic disease, decreased physical function, and may hinder the healthy aging process.⁴⁹ These numbers are disturbing because research is clear that even limited increases in physical activity can increase the overall health of seniors. Poor physical health is one of the major factors linked with falls.⁵⁰

Quality of Life

A 2002 survey of Americans revealed an interesting look at senior's attitudes and perceptions of seniors by the broader community. The vast majority of people identified physical and mental decline as the entrance into "old age". In a question regarding what leads to a meaningful life, over 90% of seniors identified friends and family as key, 65% indicated spiritual life, and 40% indicated community.⁵¹

One key concept of healthy aging is enrichment opportunities. These include ongoing adult education in a variety of forms (physical and mental), and well as an active volunteer or work life. An International Demographics study released in 2004, showed that 56.7% of adults 55-64 are regular Internet users. For seniors 65-74, 36% are regular users, and nearly 16% of people 75 and older are regular users.⁵² The Internet is one mechanism that should be further explored in order to expand learning opportunities for seniors.

According to the 2005 American Community Survey, nearly 3,000 Livingston County seniors 65 and older were working in 2005. That is roughly 19% of the local population 65 and older. Workforce projections estimate that as the boomers age, they will be more likely to stay in the workforce longer, but may scale back their hours and responsibilities.⁵³ Volunteerism estimates also indicate a large increase in the number of seniors seeking meaningful volunteer opportunities in their community.⁵⁴ Livingston County can do a great deal to prepare for these changing trends, by making workplaces and volunteer opportunities more senior-friendly. Local organizations such as the Adult Center for Enrichment (A.C.E) are making low cost college classes available to seniors in the county.

Physical enrichment is also important. The social interaction and physical activity provided in team sports is a special opportunity not currently available to seniors in Livingston County. Several surrounding counties provide senior softball, volleyball, and hockey leagues, as well as senior specific times for ice skating, roller skating, and other competitive sports.

As the population becomes more spread out, the chance for seniors to become socially isolated is a concern. Seniors who are isolated or must rely more on others are more at risk for abuse, neglect, and exploitation.⁵⁵ In Michigan, 69% of adult mistreatment victims were over the age of 60.⁵⁶ In 2007 the Livingston County Department of Human Services investigated 101 reports of adult abuse, neglect, and exploitation and there are an average of 20 open cases every month.⁵⁷ National statistics suggest that elder abuse and neglect is greatly under-reported, and that there are over five times as many elder abuse and neglect cases in a community as is reported to Adult Protective services.⁵⁸

Senior Centers

One important way for a community to reach out to seniors and provide a connection point is to have a strong network of senior centers. Livingston County senior centers provide hundreds of seniors a place for warm meal, exercise programs, information, socialization, linkage to community

resources, and many more programming options. However, many are limited by their size and hours of operation.⁵⁹ Many senior centers across the country have served as a recognized place for innovative wellness programs, education, and social connections.⁶⁰

Transportation

Transportation issues were at the center of concern for nearly all of the Senior Needs workgroups and participants in the focus group and community survey. Transportation encompassed several areas, including public transportation, personal mobility (e.g. driving, walking, and bicycling), and infrastructure (e.g. roads, sidewalks, bike racks).

The Corradino Group recently completed a transportation study for the Livingston Essential Transportation Services (LETS). As part of the study, the group conducted a local survey. Over 12% of respondents said they had difficulty getting their transportation needs met.⁶¹ Based on growth projections, LETS can expect a 29% increase in ridership by 2015.⁶² Seniors and seniors with disabilities made up 60% of the LETS riders in 2005.⁶³ As the demands on LETS continue to grow, seniors may have more difficulty getting to places they need to go.

One of the greatest concerns that Americans have for seniors is social isolation.⁶⁴ Being mobile is extremely important to a senior's mental and physical health. Livingston County is a vehicle dependent community, making it difficult to walk to the grocery store or to doctor appointments. While public transportation is one way to provide rides to seniors, especially to appointments and essential services, it cannot meet every need. Currently, seniors do not have access to public transportation 24/7 which can limit a senior's ability to participate in community events, performances, and civic activities.

Walkable communities are an important part of a community's mobility plan. Walkable communities have been linked with increased business sales, increased property values, and overall health of the community.⁶⁵ Recent studies have shown that seniors will walk more regularly if it is safe, and if sidewalks or paths lead to places of interest and need.⁶⁶ Other key elements to promote walkability in a community are pedestrian crosswalks and wide sidewalks to accommodate wheelchairs.⁶⁷

Traffic Statistics

In Michigan, drivers 65 and older make up nearly 15% of the active driving population. That percentage is expected to increase as seniors live longer, more active lives.⁶⁸ While drivers 65 and older *are not* the most likely population to have an accident, they *are* most likely to have a fatal accident.⁶⁹ Some road conditions make it especially difficult for older drivers. These include confusing or sharp turns, poorly lit roadways, and difficult to read road signs. The State of Michigan has developed strategies and recommendations for communities to deal with these structural issues that could make driving easier for everyone.⁷⁰ In addition to structural changes, several insurance companies, in collaboration with occupational therapists and senior providers, have developed driver safety courses and driving assessments to help seniors pinpoint driving deficits and create strategies to deal with those issues.

Recommendations

Four major themes emerged from the work of the senior needs assessment study that help frame the planning and implementation in future years. Specific recommendations for each of the five study areas (Health, Housing, Nutrition/Healthy Lifestyle, Quality of Life, and Transportation) have been merged into the four theme areas and are listed below.

Active Aging

The concept of active aging includes healthy aging of the body and mind. Poor health has been linked with a decrease in independence, and increasing isolation among the senior population. Active aging also refers to seniors physically active and disease free for as long as possible. Currently, 72% of people 65 and older report having been told they have high cholesterol and 58% report having been told they have hypertension.⁷¹ Healthy lifestyles have been linked with reductions in chronic disease, unnecessary hospitalizations, and delays in the onset of dementia and Alzheimer's.⁷²

Many seniors and soon-to-be seniors are also living with chronic disease such as diabetes, severe asthma, and heart disease. It is important that seniors are provided tools to manage these conditions in order to prevent hospitalizations or even death. Self-management programming provided in community settings such as senior centers and libraries reaches seniors where they congregate and provide essential information for managing their condition.

Recommendations

1. Develop a geriatric assessment model in Livingston County through partnership with St. Joseph Mercy Health System. Increase number of physicians specializing in geriatrics that practice in the county.
2. Encourage the use of existing wellness activities and the creation of additional activities based on programs and practices recommended by the National Council on Aging, other research based models, and local senior input.
3. Provide education and training opportunities and promote the use of technology for seniors focusing on prevention including chronic disease self management models, physical activity, good nutrition, safe driving, medication management, and self advocacy.

Aging in Place

The vast majority of seniors prefer to stay in their home of choice for as long as possible. Home-based care may be less costly than nursing home or long term care facilities, but there may be many barriers to people living safely in their own home.

One barrier is housing and repair costs. According to most recent assessments, based on income levels, over 4,000 Livingston County seniors 65 and older would require rental assistance if they sought an apartment at fair market rent.⁷³ Another major barrier to aging in place is transportation. In a recent Livingston County transportation survey, over 12% of respondents said they had difficulty getting their transportation needs met.⁷⁴

Health complications may also make it difficult for seniors to maintain stability in their own homes. In 2000, falls for seniors 65 and older accounted for 1.8 million emergency room visits nationwide, and cost roughly \$16.4 billion.⁷⁵ Not only are falls costly, but they also limit a senior's mobility and independence. A strong system of support is necessary to keeping seniors safe in their homes.

Recommendations

1. Ensure all seniors have access to safe, affordable housing through the following efforts:
 - a. Increase access to Housing Choice Voucher program for seniors
 - b. Advocate for senior friendly ordinances in local townships

- c. Increase capacity and access to in-home supports in the county including, but not limited to home chore and maintenance assistance, respite, home health care, case management, medication management, home delivery of prescriptions, food, and supplies, and medical equipment lending.
2. Increase availability and use of home modification by:
 - a. Promoting the use of Aging in Place specialists
 - b. Developing a secure stream of funding and low interest loans for home modifications
 - c. Publicizing availability of home modification supports through 211
 - d. Creating incentives to increase the use of universal design (barrier free) in new construction
 3. Develop fall prevention education and information to seniors and their caregivers and work with local facilities to better track injuries related to falls in the community.

Community Engaging Seniors

Community engaging seniors includes outreach to seniors who are homebound and socially isolated, or seniors who have other unique needs and offering inclusive and interactive enrichment opportunities. Seniors who are isolated or reliant on others for their care are more at risk for abuse, neglect, and exploitation.⁷⁶ Developing and coordinating a system of volunteers who can provide outreach, education, transportation, and support to seniors and their caregivers are essential to a complete senior system.

Engagement also recognizes that seniors are an important asset to our community and that enrichment opportunities must be inclusive and welcoming. Workforce projections estimate that as the boomers age, they will be more likely to stay in the workforce longer, but may scale back their hours and responsibility.⁷⁷ Volunteerism estimates also indicate a large increase in the number of seniors seeking meaningful volunteer opportunities in their community.⁷⁸

Recommendations

1. Increase use of volunteers to assist seniors in the community. Work with the Livingston County United Way to strengthen existing work on development of a local Volunteer Center to ensure pool of volunteers are secured to assist with senior needs including transportation, home chores and maintenance, and grocery and prescription deliveries. Explore the Yale model that pairs volunteers with hospitalized seniors.
2. Encourage education and employment within the senior population by:
 - a. Supporting the development and use of technology at key access points in the county such as senior centers and libraries to connect seniors with information and opportunities
 - b. Supporting sustainability and expansion of adult community education in the county
 - c. Engaging employment and economic development groups in discussions about workforce needs of seniors
 - d. Securing funds for workforce re-training
3. Increase outreach to home bound seniors to assess needs, connect with services, and prevent elder abuse/neglect and exploitation. Train current in-home providers and volunteers to utilize the same assessment and information and referral process.

Community Infrastructure and Supports

Community infrastructure and supports includes access to information and service delivery systems delivered in a multitude of ways. Use of technology to ensure up-to-date, accurate information on senior related issues is essential to ensure efficient and timely information to seniors and their caregivers. Senior Centers are another critical component of the information and service delivery systems. Senior Centers across the country have been the operating place for innovative wellness programs, education, and social connections.⁷⁹ Currently, senior centers in Livingston County are limited by their size, hours of operation, and funding.⁸⁰

A primary recommendation from the Senior Needs focus group was the coordination of information and resources that exist within the community, including marketing, distribution of information, and the centralization of data. Seniors and their families complain about how complicated and difficult it can be to find information when it is needed most. A coordinated information system, utilizing existing avenues is essential to creating tangible community changes for seniors.

Recommendations

1. Develop and publicize a centralized resource for accessing information of interest to seniors including housing, transportation, health care, in-home supports, employment, and wellness and recreational activities. Ensure information is accessible to seniors through 211, printed materials, and/or in key locations in the community such as senior centers and libraries. Ensure specialized information on health care, disease management, and other health issues is available to seniors through physicians, health care systems, and at key places in the county.
2. Develop a community infrastructure which supports senior needs for mobility, health care, food, and social interaction and wellness activities.
 - a. Senior Centers – Strengthen and expand senior centers in the county to be a central location for accessing wellness and education services, recreation activities, health care information and services, and information and referral for services and supports.
 - b. Transportation – Develop a comprehensive public and private transportation system based on the Michigan Senior Mobility Plan and recommendations from The Corradino Group that includes 24/7 services, fixed routes, reflective lines, larger letters on street signs, and development of accessible pedestrian sidewalks and crossings to ensure a walkable community.
 - c. Health Care – Encourage the centralization and coordination of health care services in the county by locating several health care services in one place or in key locations where seniors gather and live. Coordinate transportation and medical appointments to assist with accessing services.
 - d. Food – Increase capacity and outreach of existing food system including:
 - i. working with local grocers to provide grocery deliver and online or phone shopping lists
 - ii. providing magnifying glasses in stores and ensuring signs are easily read by seniors
 - iii. advocating for changes in label colors and readability

- iv. partnering with local farmers markets to develop a Senior Project Fresh Project in Livingston County.
3. Increase capacity and training for existing non-profit and for-profit senior services and supports to be able to serve all seniors seeking assistance including low income and at risk seniors and their caregivers. Ensure consistent training and information to service staff to increase consistency and quality across the service system.

Feedback From Community Stakeholders

In August 2006, almost 300 Livingston County seniors were surveyed at the Annual Senior Power Day event. The questions focused on what their spending priorities were related to services. Seniors centers, housing, and in-home services were ranked as the top three services they would pay for if they had additional funds (source). These three were followed by health care, community services, and transportation.

In addition to these general survey results, additional community input was sought on the draft recommendations developed by the Senior Needs Assessment task forces. This feedback was extremely important to the planning groups since the focus groups and survey data allowed them to examine new ideas and to confirm that the recommendations were reflecting the needs of community members. A focus group was conducted in March 2007 with 25 community members from education, health and human services, seniors, and businesses that work with seniors or senior related issues. The number one recommendation from the focus group was the need for coordination of information and resources that exist within the community. This included marketing, distribution of information via 211 and senior centers, and the centralization of data collection ensuring that seniors and their families have easy access to the information they need and for community leaders to plan for future needs.

In May of 2007 a survey was conducted to seek additional community input on the draft recommendations developed as part of the senior needs assessment project. Twenty-eight surveys were returned, with 75% of the respondents between the ages of 65 and 84. Respondents prioritized the following recommendation areas:

- Utilize existing resources, particularly senior centers as a place to gather, get information, and socialize
- Ensure that information is easy to access and understandable
- Transportation is coordinated and accessible
- Walkable and senior friendly communities
- Local services and resources such as housing and home chore services are affordable and accessible.
- Providing supports to seniors most at risk, including those who are home bound, isolated, or experiencing elder abuse and neglect
- Wellness programs and retirement planning resources

Conclusion

With the projected increase in the Livingston County senior population coupled with the current limited access to community supports, transportation, housing, and recreation opportunities, Livingston County needs to prioritize senior needs in the county. This needs assessment document is a starting point to address gaps that were identified and to engage seniors and their families, community and business leaders in focused efforts to ensure that Livingston County is a supportive

community for seniors to reside. While some recommendations listed in this report have private sector solutions, others will require efforts by local municipalities and non-profit organizations including the faith community.

The mechanism to ensure implementation and further work is to develop an oversight committee to take these recommendations, further examine the current system, and develop specific strategies and action steps to make these recommendations a reality. To this end, the final recommendation of this report is to develop a county Leadership Council on Aging that would provide direction and oversight to this initiative. Members of the Council would include key leaders in the community including business, government, non-profits, faith community, and seniors.

Investing in seniors is morally responsible and economically sensible. Current and future seniors comprise a large demographic and economic force in Livingston County. When implemented, the recommendations contained in this report will raise the overall quality of life in Livingston County for all residents, especially seniors, and make Livingston County a supportive and welcoming environment in which to live.

APPENDIX A

Steering Committee and Staff

Maggie Jones (Chair)	Livingston County Commissioner
Michael Markel	St. Joseph Mercy Livingston Hospital
Mary LePios	Citizen
Jennifer Lavelle	Livingston County Department of Public Health
Carrie Shrier	Michigan State University Extension
Mary Phillips	Community Mental Health
Mark Swanson	Howell Senior Center
Judy Shewach	LACASA
Jim McGuire	Area Agency on Aging 1-B
Nancy Rosso	Livingston County United Way
Ted Westmeier	Livingston County Department of Public Health
Alissa Parks	Human Services Collaborative Body
Julie Cieszkowski	Data collection, plan of work
Samantha Mundy	Survey creation, editing
Emily Ladd	Coordinator

Health Workgroup

Michael Markel (Chair)	St. Joseph Mercy Livingston Hospital
Kris Mazzie, RN	Triumph Home Health Care
Kathy Sarb	Area Agency on Aging 1-B
Beverly Mostowy	OLHSA
Ted Westmeier	Livingston County Department of Public Health
Alice Andrews	Hartland Senior Center
Patty Flynn	Catholic Social Services
Tom Wyllie	Area Agency on Aging 1-B
Denise Burden	Metro Home Health Care
Anita Clos and Katherine Beck-Ei	St. Joseph Mercy Health System (Ann Arbor)
Sue Ann Daniel	In House Hospice

Housing Workgroup

Mary Phillips (Co-Chair)	Community Mental Health
Mark Swanson (Co-Chair)	Howell Senior Center
Pamela Bolam	Be Our Guest Adult Day Center
Lenora Fuller	OLHSA
Salli Christensen	Arc of Livingston
Kim Christopherson	Community Mental Health

Alissa Parks
Amy Smyth

Human Services Collaborative Body
Area Agency on Aging 1-B

Nutrition/Healthy Lifestyle Workgroup

Jennifer Lavelle (Co-Chair)	Livingston County Department of Public Health
Carrie Shrier (Co-Chair)	Michigan State University Extension
Saralee Bloese	Howell Area Aquatic Center
Denise Burden	Metro Home Health Care
Donna Gehringer	Livingston County United Way
Bob Heinel	Veteran's Affairs (information only)
Karen Jackson	Area Agency on Aging 1-B
Christina Lovgren	Senior Nutrition
BJ Morrison	OLHSA
Michelle Ounanian	Gleaners Community Food Bank
Carol Ringle	Hartland Senior Center
Mark Swanson	Howell Senior Center
Judy Trudeau	St. Joseph Mercy Livingston Hospital

Quality of Life Workgroup

Judy Shewach (Chair)	LACASA
Mark Robinson	Catholic Social Services
Nancy Hall	Brighton Senior Center
Helen Kropik	Fowlerville Senior Center
Allison Krys Kelley	OLHSA
Kim Christopherson	Community Mental Health
Kathy Poland	Area Agency on Aging 1-B
Liz Wark	Senior
Mary Griffith	Senior

Transportation Workgroup

Mary LePios (Chair)	Citizen
Darlene Fraley	Catholic Social Services
Alice Andrews	Hartland Senior Center
Kathy Holcomb	Fowlerville Senior Center
Sharon Holland	Citizen
Dave Links	Livingston Essential Transportation Service
Andrea Stepien	VIABIL, Inc
Shawn Lindberg	Community Mental Health
Gerry Briggs	Senior
Mary M. Felty	Senior
Veronica Norkiewicz	Senior
Anthony DiCola	Livingston Essential Transportation Service

Doug Anderson
Amy Smyth
Phyllis Daniel

Peoples Express
Area Agency on Aging 1-B
Brighton Senior Center

Works Cited

FOOTNOTES

- ¹ Petroni, Gary. "The Impact of Changing Population within Livingston County." Southeastern Michigan Health Association. Estimates created by University of Michigan, Institute for Labor and Industrial Relations, Michigan Department of Transportation, April 2006.
- ² Petroni, Gary. 2006.
- ³ Mark Grunewald and Associates, Inc. "These Four Walls...Americans 45+ Talk About Home and Community," AARP: May, 2003.
- ⁴ Johnson, Richard, Gordon Mermin, and Cori Uccello. "When the Next Egg Cracks: Financial Consequences of Health Problems, Marital Status Changes, and Job Layoffs at Older Ages." Center for Retirement Research at Boston College, December 2005.
- ⁵ Behavioral Health Risk Factor Survey, Livingston County data, 2004.
- ⁶ United States -National Institutes of Health
- ⁷ United States Census, American Community Survey, 2005
- ⁸ Corradino Group of Michigan. Countywide Public Transportation Improvement Study, 2007
- ⁹ Abt Associates. "The Effect of Reducing Falls on Long Term Care Expenses." US Dept of Human Services: April, 2004
- ¹⁰ Michigan Office of Services to the Aging. "The Governor's Task Force on Elder Abuse: Final Report." August 2006.
- ¹¹ Petroni, Gary. "The Impact of Changing Population within Livingston County." April 2006
- ¹² AARP
- ¹³ National Council on Aging. www.ncoa.org
- ¹⁴ Senior Center attendance and program records
- ¹⁵ Petroni, Gary. "The Impact of Changing Population within Livingston County." Southeastern Michigan Health Association. Estimates created by University of Michigan, Institute for Labor and Industrial Relations, Michigan Department of Transportation, April 2006.
- ¹⁶ Area Agency on Aging 1B, Migration Map, US Census Data, prepared by APB Associates
- ¹⁷ Roberts, Sam. "Making the Return Trip: Elderly Head Back North." New York Times, February 26, 2007.
- ¹⁸ AARP. "Aging, Migration, and Local Communities: The Views of 60+ Residents and Community Leaders." September 2006
- ¹⁹ 2000 Census 5% PUMS files, tabulated with PDQ-Explore, prepared by APB Associates* Adjusted figures calculated with 1995-2000 migration figures doubled to reflect 1990-2000 figures.
- ²⁰ Taylor, Paul, Cary Funk, and Courtney Kennedy. "Baby Boomers Approach Age 60: From the Age of Aquarius To the Age of Responsibility." Pew Research Center: December 2008.
- ²¹ Johnson, Richard, Gordon Mermin, and Cori Uccello. "When the Next Egg Cracks: Financial Consequences of Health Problems, Marital Status Changes, and Job Layoffs at Older Ages." Center for Retirement Research at Boston College, December 2005.
- ²² Johnson, 2005
- ²³ Himmelstein, David, et al. "Market Watch: Illness and Injury as Contributors to Bankruptcy." Health Affairs. February 2, 2005.
- ²⁴ Johnson, 2005
- ²⁵ Behavioral Health Risk Factor Survey, Livingston County data, 2004
- ²⁶ Johnson, 2005
- ²⁷ Behavioral Health Risk Factor Survey, Livingston County data, 2004.
- ²⁸ Behavioral Health Risk Factor Survey, Livingston County data, 2004
- ²⁹ Abt Associates. "The Effect of Reducing Falls on Long Term Care Expenses." US Dept of Human Services: April, 2004
- ³⁰ Behavioral Health Risk Factor Survey, Livingston County data, 2004
- ³¹ Boulton, Guy. "Filling the Needs of Older Patients." Milwaukee Journal Sentinel. June 9, 2007.
- ³² Medicare Participating Physician Summary Report, 2006. and US Census 2005 American Community Survey
- ³³ Arnst, Catherine. "The Right Cure for Ailing Elder Care?" Business Week. June 11, 2007.
- ³⁴ Boulton, Guy, 2007.
- ³⁵ US Department of Housing and Urban Development
- ³⁶ Census 2000
- ³⁷ US Department of Housing and Urban Development

-
- ³⁸ United States Department of Social Security
- ³⁹ United States Census, American Community Survey, 2005
- ⁴⁰ Mark Grunewald and Associates, Inc. "These Four Walls...Americans 45+ Talk About Home and Community," AARP: May, 2003.
- ⁴¹ Housing Locator System. www.michiganhousinglocator.com
- ⁴² National Association of Home Builders Director of Certified Aging in Place Specialists (www.nahb.org)
- ⁴³ United States -National Institutes of Health
- ⁴⁴ Bound for Good Health, National Institutes on Aging, 2000
- ⁴⁵ Behavioral Health Risk Factor Survey, Livingston County data, 2004
- ⁴⁶ Behavioral Health Risk Factor Survey, Livingston County data, 2004
- ⁴⁷ Behavioral Health Risk Factor Survey, Livingston County, 2004
- ⁴⁸ Behavioral Health Risk Factor Survey, Livingston County data, 2004
- ⁴⁹ Bound for Good Health, National Institutes on Aging, 2000
- ⁵⁰ Abt Associates, Inc. "The Effect of Reducing Falls on Long Term Care Expenses." US Department of Health and Human Services, April 2004.
- ⁵¹ National Council on the Aging. "American Perceptions of Aging in the 21st Century: A Myths and Realities of Aging Chartbook." 2002.
- ⁵² Non Profit Association, December 2004
- ⁵³ Petroni, Gary. "The Impact of Changing Population within Livingston County." April 2006
- ⁵⁴ AARP
- ⁵⁵ Michigan Office of Services to the Aging. "The Governor's Task Force on Elder Abuse: Final Report." August 2006.
- ⁵⁶ Michigan Department of Human Services, "Adult Protective Services Fact Sheet," 2003.
- ⁵⁷ Livingston County Department of Human Services adult protective services data
- ⁵⁸ The National Elder Abuse Incidence Study - Final Report, September 1998. Prepared for The Administration for Children and Families and The Administration on Aging in The U.S. Department of Health and Human Services by The National Center on Elder Abuse at The American Public Human Services Association in Collaboration with Westat, Inc.
- ⁵⁹ Senior Center attendance and program records
- ⁶⁰ National Council on Aging. www.ncoa.org
- ⁶¹ Corradino Group of Michigan. Countywide Public Transportation Improvement Study, 2007
- ⁶² Corradino Group of Michigan, 2007
- ⁶³ Corradino Group of Michigan, 2007
- ⁶⁴ NCOA, 2002
- ⁶⁵ Creating Communities for Active Aging, NHTSA
- ⁶⁶ Creating Communities for Active Aging, NHTSA
- ⁶⁷ Creating Communities for Active Aging, NHTSA
- ⁶⁸ Office of Highway Safety Planning. 2005 Michigan Traffic Crash Facts
- ⁶⁹ OHSP, 2005
- ⁷⁰ Governor's Traffic Safety Advisory Commission. "Michigan Senior Mobility Action Plan," November 2006.
- ⁷¹ Behavioral Health Risk Factor Survey, Livingston County data, 2004.
- ⁷² United States -National Institutes of Health
- ⁷³ United States Census, American Community Survey, 2005
- ⁷⁴ Corradino Group of Michigan. Countywide Public Transportation Improvement Study, 2007
- ⁷⁵ Abt Associates. "The Effect of Reducing Falls on Long Term Care Expenses." US Dept of Human Services: April, 2004
- ⁷⁶ Michigan Office of Services to the Aging. "The Governor's Task Force on Elder Abuse: Final Report." August 2006.
- ⁷⁷ Petroni, Gary. "The Impact of Changing Population within Livingston County." April 2006
- ⁷⁸ AARP
- ⁷⁹ National Council on Aging. www.ncoa.org
- ⁸⁰ Senior Center attendance and program records