

# Executive Summary

The purpose of the Yellowstone County/City of Billings Growth Policy is to guide local officials and community members in making decisions about the community's growth, both development and redevelopment, that will affect the future of the community. The Growth Policy directs basic choices and provides a flexible framework for adapting to conditions over time. It is a collection of the goals and objectives for the community that will guide growth.

With funding from the Robert Wood Johnson Foundation, RiverStone Health, in coordination with the City of Billings Planning Division, began a Health Impact Assessment (HIA) of the Growth Policy in June of 2008. State regulatory requirements call for communities to provide a timetable for reviewing the Growth Policy at least every five years and also revise if necessary. The goal of the Growth Policy HIA is take a retrospective look at the Growth Policy that was adopted in 2003 in order to identify ways to make health a part of the decision making process related to the growth of the community by predicting health consequences, informing decision makers and the public about health impacts, and providing realistic recommendations to prevent or mitigate negative health outcomes, all of which is to be included in the updated 2008 Growth Policy. This report contains numerous recommendations concerning public policy, implementation, design and maintenance of the Growth Policy. The recommendations are intended to give decision makers, community members, designers and project implementers strategies that can be utilized to support positive health outcomes for all of the populations affected by the Growth Policy.

While the assessment is limited to Yellowstone County and its included jurisdictions, many of the findings and recommendations are relevant to the entire state of Montana and beyond. HIAs enable communities to make the goal of positive health outcomes for all people a primary element in deciding the course of future projects and policies.

## The Growth Policy Vision

With the Growth Policy affecting approximately 139,936 residents and 2,666 square miles in Yellowstone County, the need for long range planning becomes palpable in order to maintain a high level of public service and quality of life for Yellowstone County residents. Yellowstone County experienced population growth of 8.2% from 2000 to 2007, as well as a 15% progression in employment. The number of households in Yellowstone County increased from 52,084 in 1999 to 58,206 in 2006. Billings, the county's largest city with an estimated population of 101,876, is a major retail and wholesale trade, financial, energy, transportation and medical center; almost 110 acres was added to the city park inventory between 2000 and 2007.<sup>1</sup>

The Yellowstone County/City of Billings Growth Policy is an issue driven document that proposes goals and objectives to guide the following growth elements: land use, economics,

aesthetics, natural resources, open space and recreation, transportation, public services and cultural and historic resources. 235 implementation strategies were developed for the 2003 Growth Policy; of those, 203 strategies were completed or attempted. Yellowstone County and the City of Billings are positioned to lead Montana into an era of economic, social and educational achievement. The vision for the Growth Policy is to act as a decision-making guide for progression into that era, make the right choices and shaping the leadership and future of the community.

## Health and the Built Environment

“Virtually everything in our built environment is the way it is because someone designed it that way. We now realize that how we design the built environment may hold tremendous potential for addressing many of the nation’s greatest current public health concerns, including obesity, cardiovascular disease, diabetes, asthma, injury, depression, violence and social justice.”

Richard Jackson, MD MPH.

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To reflect the role the Growth Policy can play in health, it is necessary to explore the current and past relationships between health and the built environment. Initially, we defined health as “a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity,” later adding health is “a positive concept emphasizing social and personal resources, as well as physical capabilities.”<sup>iii</sup> The built environment includes all of the physical structures engineered and built by people—the places we live, work, and play; including our homes, workplaces, schools, parks and transit arrangements.<sup>iv</sup> These definitions are important in their recognition that numerous causes influence the ability to be healthy.<sup>v</sup>

As Neighborhood density has decreased over the last 100 years, the changes have had both direct and indirect impacts on our built environment and health. Today’s trend, sometimes referred to as “urban sprawl”, is characterized by huge increases in urbanized land area and in vehicle miles traveled.<sup>vi</sup>

Changes in the built environment and development patterns have contributed to loss of wildlife habitat as well as degradation of not only water resources, but water quality as well.<sup>vii viii</sup> Increases in impervious surfaces, such as parking lots, and contaminant surface water runoff contribute to a loss in availability and use of safe, clean water supplies leading to negative effects on both recreation and consumption.<sup>ix</sup>

With more vehicle miles traveled (VMT) comes the likelihood for more vehicle crashes; correspondingly, increased pedestrian injuries and fatalities. Automobiles now claim more than 40,000 lives each year in the United States.<sup>x</sup> In addition, further VMT contribute to overall releases of air pollutants.<sup>xi</sup> “Mobile sources” (mostly cars and trucks) account for approximately 30% of emissions of oxides of nitrogen and 30% of hydrocarbon emissions;<sup>xii</sup> however, in automobile dependent areas, the proportion may be substantially higher.<sup>xiii</sup>

Furthermore, carbon dioxide and other vehicle emissions contribute to accumulation of greenhouse gases in the atmosphere<sup>xiv</sup>, which may ultimately impact health by affecting the transmission and spread of infectious diseases<sup>xv</sup>

Our built environment also affects individual mental health as well as population-wide well-being. The built environment may indirectly influence development and maintenance of socially supportive networks within a community. Higher levels of this type of “social capital” have been linked to lower levels of morbidity and mortality.<sup>xvi</sup> Similarly, housing type and quality, neighborhood quality, noise, indoor air quality and light have all been linked to personal mental health.<sup>xvii</sup> Lastly, it has been reported that walkability and mixed use of neighborhoods are related to an enhanced sense of community and social capital.<sup>xviii xix</sup>

Possibly the most evident link between the built environment and health relates to the occurrence of overweight and obesity in the United States. Research tells us that communities that portray the effects of less-dense development are associated with populated areas.<sup>xx</sup> One study reports that, after controlling for individual differences, those living in sprawling communities are more likely to walk less during their leisure time, weigh more, and have a greater prevalence of hypertension than those living in more compact places.<sup>xxi</sup> To add, the likelihood of obesity seemingly increases in mixed land use, but rises with increases in time spent in a car per day.<sup>xxii</sup> The built environment may also play a role in controlling weight by controlling food access and availability. It has been shown that grocers are more likely to be located in areas that represent a higher socio-economic status, and also that fruit and vegetable intake is positively associated with the presence of a grocery store.<sup>xxiii xxiv</sup>

The built environment does not fully account for Americans increasingly sedentary lifestyles, and physical inactivity does not tell the entire story of the national epidemic on being overweight. Still, by having the potential to affect health in the aforementioned ways, there is sufficient evidence for linking health and the built environment to warrant the inclusion of health considerations in project and policy decisions. With this, there is reason to believe that the Growth Policy, which will directly affect 2,666 square miles and 139,963 Yellowstone county residents, will play a role in the future health of the people who live, work and play in the jurisdiction.

## A Health Impact Assessment

A Health Impact Assessment (HIA) is “a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.” HIA is most often used to address built environment projects and is a beneficial tool for public health, planning, community residents and policymakers to ensure that health remains a critical consideration when making decisions about the built environment. This type of assessment can provide valuable evidence about the health impact of a project and can add emphasis to any policy or funding opportunity.<sup>xxv</sup> Often, the result of an HIA is a set of evidence-based recommendations that seek to negate or minimize potential or actual negative impacts on health and bolster health promoting aspects of a policy, program or project.<sup>xxvi</sup> The ultimate goal of each HIA project is to provide a healthier living environment for everyone in the community.

The steps of an HIA include: **screening**, which determines if an in depth assessment is necessary and if HIA will add value to the decision-making process; **scoping**, identifies the particular issues that should be addressed in the HIA and determines a management approach for the HIA; **assessment**, which considers the nature and magnitude of health impacts and the affected populations; **reporting**, which circulates the results of the HIA to decision makers, individuals implementing the plan/policy, and community stakeholders; and **evaluation**, which reviews the effectiveness of the HIA process and evaluates the actual health outcomes as a result of the project or policy.

HIAs are flexible and can be adapted to meet the needs of the project and the project staff. They can be done at your desk in a day (rapid assessment) or can be a year long process that results in a comprehensive report (comprehensive assessment). Most typically HIAs will be conducted prospectively; which is to say, before any action has been taken and during the planning stage. Less standard are retrospective HIAs, which are carried out after a program or project has been completed or after a policy has been implemented. It is used to inform the ongoing development of existing work.<sup>xvii</sup>

## The Growth Policy HIA Methodology

The Yellowstone County/City of Billings Growth Policy HIA provides an opportunity to examine the potential health impacts of all development and redevelopment opportunities for the most populated county in Montana. The HIA recognizes the health impacts of the Growth Policy on all affected populations; it provides a comprehensive public health analysis of the project to inform decision makers. Lastly, the HIA creates a body of work that can be used to inform public health and transportation practitioners, citizens, developers and elected officials throughout the county as well as enhance the Growth Policy revision process.

Researchers with expertise in public health and planning were assembled to conduct the HIA of the Growth Policy. The purpose of the multidisciplinary team was to convene a panel with expertise on issues relating to city planning, including transportation, land use, economic development, environmental management, and public policy, as well as public health, including epidemiology and environmental health.

### The Plan

To conduct the HIA, the team had to establish an understanding of the composition of the Growth Policy and its margins, which, at the start of the HIA process, was entering its first revision process. The team utilized the *2003 Yellowstone County/ City of Billings Growth Policy* as its basis for the HIA. The 2003 Growth Policy provides a framework for land use, economics, aesthetics, natural resources, open space and recreation, transportation, public services and cultural and historic resources. By taking a retrospective look at the 2003 Growth Policy to assess the parameters of the potential to impact the health of the community, the team was able to identify key strengths and weaknesses of the Growth Policy as it pertains to health. Recommendations based upon the retrospective findings were provided to the governing bodies of the Growth Policy for use during the revision process.

## Affected Populations

As of 2007, the population of Yellowstone County was 139,936; the number of households in Yellowstone County increased by 10% from 1999 to 2006. To characterize the health status of the population living within the borders of Yellowstone County, a Community Health Assessment was conducted in 2006. While no single health issue emerged as critical, the CHA identified mental health, unintentional injury, heart disease, physical activity, and nutrition as areas that warranted improvement. With the population of Yellowstone County projected to grow steadily in the next several years, significant opportunities for health improvement exist in Yellowstone County through a more comprehensive growth plan.

## Potential Health Impacts of the Growth Policy

The Growth Policy HIA resulted in the identification of one critical overarching issue: although several of the issues that are addressed in the 2003 Growth Policy speak to health issues indirectly, there is a need for the document to take a more direct approach to health. Taking this into consideration, researchers recommended that a list of health issues currently being faced by the residents of Yellowstone County, policies to address each of the issues identified, and strategies to ensure the implementation of the policies be included in the 2008 Growth Policy.

## Prominent Local Health Issues

The critical overarching issue that was pinpointed was that the 2003 Growth Policy, while mentioning the importance of smart growth in the built environment, does nothing to identify issues, policies and strategies specific to improving the health of the community. Researchers have identified the foremost health issues currently facing Yellowstone County as emergency preparedness, nutrition, pedestrian safety and traffic, physical activity, social capital, safety and crime, and affordable housing and living wage jobs.

## Emergency Preparedness

Anecdotal evidence provides us with a basis for planning and preparing communities for unexpected emergencies. Events such as Hurricane Katrina, and more locally the 2006 Emerald Hills Fire, have taught much about the ways in which communities are designed. When planning new developments as well as when maintaining older, more historic neighborhoods, it's important to consider emergency preparedness elements such as providing neighborhood residents and emergency responders with more than one entrance and/or exit and to identify and map neighborhoods as to the level of risk associated with natural disasters. The Growth Policy can serve as a means to address emergency preparedness issues for all residents as Yellowstone County and the City of Billings continues the redevelopment and the development process.

## Nutrition

Increases in obesity and chronic diseases associated with poor diets have led to concern that some low-income and rural communities lack access to affordable and nutritious foods,

allowing some areas to become food deserts. A food desert is a district with little or no access to foods needed to maintain a healthy diet.<sup>xxviii</sup> A healthy diet includes fruits, vegetables and whole grains and is low in fat, added sugar and salt. Healthy diets are recommended for the prevention of cardiovascular disease and the prevention of such chronic diseases as diabetes, hypertension, stroke and certain types of cancer. Access to food stores and food service places, particularly grocery stores, differs by socioeconomic status, with grocers locating in wealthier neighborhoods and convenience stores and fast food establishments situating themselves in areas of lower socio-economic status.

## Pedestrian Safety and Traffic

A key characteristic of today's growth and development can be seen in the relationship that has evolved between low density development and more automobile travel: vehicle miles traveled increase as neighborhood density decreases.<sup>xxix</sup> Automobile use offers extraordinary personal mobility and independence; however, it is also associated with health hazards, including motor vehicle crashes and pedestrian injuries and fatalities. Each year, automobiles cause about 6,000 fatalities and 110,000 injuries among pedestrians nationwide.<sup>xxx</sup> While many factors contribute to the high rate of pedestrian fatalities, including alcohol abuse, inadequate lighting, and pedestrian behavior, the increase in high-speed, pedestrian-hostile roads in expanding areas likely plays an important part. Walking offers important health benefits, but safe and attractive sidewalks and paths are needed to attract walkers and ensure their safety.<sup>xxxi</sup>

## Physical Activity

We have good evidence to support that a lack of physical activity is contributing to obesity and other health problems. People have always moved about as part of everyday living—as part of doing their jobs, taking care of their homes and families and as they travel from place to place. What has changed is the amount of physical activity people get in the course of everyday life. A movement from dense neighborhoods to more spread out, automobile-dependant neighborhoods has led to a decline in daily physical activity. In general, the trend has been that few people try walking or bicycling to reach destinations because communities are being planned such that the distances between destinations do not warrant physical activity. The way we plan our communities can have a strong impact on the amount of activity community members are engaging in; therefore the Growth Policy can play an important role in increasing opportunities for physical activity.<sup>xxxii</sup>

## Social Capital

Social capital can be defined as the collective value of a network whose purpose is to inspire trust in and provide support for other members of that community. It is the degree to which people feel that they live in and belong to a socially cohesive group, and the range of activities and resources that emerge as a consequence of those ties. Research has shown that social networks and community involvement have positive health consequences. The way we design and build communities and neighborhoods affects social capital. Research also shows pedestrian-oriented, mixed use neighborhoods are expected to enhance social capital because they enable residents to interact. Residents living in walkable, mixed-use

neighborhoods are more likely to know their neighbors, to participate politically, to trust others and to be involved socially. Individuals with high social capital tend to live longer, and are mentally and physically healthier.<sup>xxxiii</sup>

## Safety and Crime

Neighborhoods that have diverse functions, residential, commercial, institutional, and leisure, may be safer than single function areas. Multi-function areas attract a continual flow of people throughout the day and evening, providing a level of informal surveillance. Dissimilarly, criminal activity is more likely to occur in places that are quiet and deserted. Research indicates that the physical characteristics of neighborhoods and the residences are more important than the demographic characteristics of the people living in the neighborhood in predicting levels of crime and fear of crime; reducing crime will only partially the fear of crime in neighborhoods. In order to also reduce the fear of crime, efforts must be made to create a built environment that promotes safety and reduces crime.<sup>xxxiv</sup>

## Affordable Housing and Living Wage Jobs

Three inter-related aspects of residential housing have an overall affect on the health of families: the physical conditions within homes, conditions in the neighborhood surrounding the homes, and housing affordability. When adequate housing protects individuals and families from harmful exposures and provides them with a sense of security, privacy, stability and control, it can make important contributions to health. Good physical and mental health depends on having homes that are safe and free from physical hazards. Along with conditions in the home, conditions in the neighborhoods have been increasingly shown to have affects on short and long-term health and longevity. The shortage of affordable housing limits families' and individuals' choices about where they live.<sup>xxxv</sup>

## Priority Growth Policy Recommendations

The goal of the Growth Policy HIA was to identify potential health impacts and make recommendations that can increase positive health outcomes and decrease or mitigate negative health outcomes. The following is a list of all recommendations:

- Work with neighborhood task forces to create emergency preparedness plans, and provide annual updates and presentations
- Support neighborhood development that provides more than one entrance and/or exit for residents
- Reduce the number of cul-de-sacs and dead-end streets
- Plan neighborhoods that foster disaster and evacuation routes
- Engage the fire department and other local emergency responders in neighborhood plans
- Identify floodplains that may be utilized for emergency flood corridors
- Adopt subdivision regulations that require adequate fire protection
- Subdivision design, building placement, and landscaping can be modified to minimize wildfire risk

- Identify and map areas of wildfire risk
- Create ways to mitigate problems that could potentially pose vector-borne and rodent-associated health threats, e.g., West Nile Virus and Hantavirus
- Strive to increase access to nutritious foods for residents in all neighborhoods
- Encourage the presences of grocers within mixed-use neighborhoods
- Improve ways to access existing grocers
- Support community gardens
- Promote the operation and expansion of local farmers' markets
- Install traffic calming devices in residential neighborhoods to discourage cut-through traffic and ensure pedestrian safety
- Maintain routine upkeep of pedestrian walkways, e.g., removal of gravel on sidewalks, etc.
- Provide wide shoulders on roadways where sidewalks do not exist
- Encourage subdivisions to incorporate safe routes to school during the planning process; create opportunities for existing communities to identify safe routes to school
- Require subdivisions to provide for the continuation of pedestrian and bicycle access as identified by Heritage Trails Plan
- Educate all commuters: automobile, bicycle, etc. on bicycle right-of-way and traffic laws
- Create ways to make physical activity part of everyday living an a logical alternative to automobile transportation
- Create mixed use developments that offer convenient places to work and shop within walking distance of residences
- Encourage physical activity for school-aged children by providing safe routes to school
- Develop trails that can be utilized for transportation to destinations, e.g., downtown
- Identify and map new and existing trails
- Continue to promote the "Buses and Bikes" program
- Provide neighborhoods and their members with the tools necessary to become a successful community
- Encourage community gathering places
- Prioritize construction of Aquatic Center/Community center in Heights
- Encourage neighborhoods to give back to the community through activities such as annual cleanup day
- Amend Public Nuisance Ordinance to address the removal of boarded up and abandoned houses in neighborhoods
- Create ways to protect the lives and properties of all citizens and visitors; improve the quality of life in our communities
- Create large, open space play areas in parks to keep kids off the streets
- Provide adequate street lighting
- Ensure adequate resources for pubic safety and crime prevention
- Encourage Neighborhood Watch programs
- Provide adequate traffic control

- Provide a safe and secure environment in neighborhood parks by enforcing laws and addressing use by transient and homeless populations as camping areas
  - Enable the development of affordable housing by providing development incentives
  - Make recommendations for land use that may include rehabilitation and redevelopment
  - Attract businesses with a minimum average annual wage equal to the living wage index
  - Continue to improve marketing for our community to employers paying a living wage
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Overall, the Growth Policy has the potential to have a largely positive impact on the health of Yellowstone County residents. The retrospective HIA identified several strategies of the Growth Policy that touch upon the topic of community health; however, the recommendation was made to consider incorporating a separate Community Health section into the revised 2008 Growth Policy. The next phase of the HIA provided recommendations to overcome or mitigate some of the pertinent health issues that were identified by the team. The Yellowstone County/City of Billings HIA reinforced the link between public decisions and public health consequences and promoted a continuing dialogue between decision makers, city planners and public health experts on strategies to create a healthy city.

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<sup>i</sup> Montana Department of Commerce, 2007.

<sup>ii</sup> Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1947 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100); and entered into force on 7 April 1948

<sup>iii</sup> Constitution of the World Health Organization- *Basic Documents*, Forty-fifth edition, Supplement, October 2006.

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