



# Appendix M: Health Indicators

## INTRODUCTION

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### Concept and Purpose of the Element

The burden of disease has shifted dramatically from infectious diseases to chronic disease conditions over the past 100 years. The threat of illness and death from epidemics of smallpox, polio, and tuberculosis has largely been removed in the developed world. Advances in public health and sanitation have increased life expectancies dramatically, allowing young children to grow up free of illnesses that had previously cut their lives short. In the current age of chronic illness, the choices we make on a daily basis, and repeat for months and years, have the biggest impact on our health. The challenge facing our community is how to build health into the everyday lives of our citizens so that making choices that help prevent chronic disease are as convenient, practical, logical, and affordable as the choices that lead to poor health. The policy decisions we make today will improve local conditions in the short-term by reducing stress and enhancing well-being. By incorporating health into land use and transportation planning efforts we will protect the county's current and future residents from chronic disease for years to come.

### Links between Health and Planning

The legal and historical link between city planning and public health is strong. Planning authority originated from the mandate of a city or county to protect a community's "health, safety and general welfare." Modern American urban planning and zoning grew explicitly in response to the public health crises that arose from the rapid industrialization and urbanization of the late 19th and early 20th centuries. Early planners required sanitary sewers to prevent cholera epidemics and zoned city blocks to buffer residential neighborhoods from polluting industries, often resulting in a strict separation of uses that is still common today. Early zoning was also often used to exclude the poor and recent immigrants – and the health threats and loss of status they were perceived to represent – from wealthier neighborhoods through limits on density, commercial development, and workforce housing.

In 1926, the Supreme Court decision *Village of Euclid vs. Ambler Realty Co* cited preservation of public health as one of the basic responsibilities of local government, and interpreted zoning as an extension of the local police power to promote the "health, safety and general welfare" of a community. The result was the Zoning Enabling Act, which enabled modern zoning and is still the legal rationale for land use regulation and planning across the country. Because public health is such a tangible example of the "health, safety and general welfare" that is to be promoted through planning and the police power, it remains one of the most legally justified reasons for making planning decisions.

Despite its historical connection and legal standing, addressing public health through city planning became less common as the 20th Century progressed. One reason is that early planning practices successfully resolved many of the public health issues plaguing urban areas during the early 20th century, such as overcrowding and the close proximity of housing to heavy industry. Health professionals began to focus on disease treatment, education, and discouraging unhealthy behaviors, while planning professionals shifted their attention to such issues as economic development and transportation. In particular, planners focused on how to accommodate rapid population growth and the desire for unlimited personal mobility through driving. Zoning increasingly became a means to protect property values, and infrastructure projects more often served to bolster the tax base.



Recently, however, planning and public health professions are rediscovering the impact of planning on public health. The increased prevalence of chronic diseases in the United States, including diabetes, obesity, heart disease and respiratory illnesses has been widely recognized as one of the major social and economic challenges. Recent research has found that people's environments – where they live and work, how they travel, what they eat and where and when they play, socialize, and are physically active – have a major impact on their health and well-being.

Although conventional planning practices (such as separating residential and commercial uses, building low density areas, constructing streets primarily for automobiles, and not providing adequate transportation choices,) are not the single cause of chronic health problems in the United States, there is increasing documentation that they are often a contributing factor. Research indicates that auto-oriented, low density, single use places – as well as places underserved by parks and active recreation facilities – discourage physical activity and therefore contribute to an increased risk of heart disease, cancer, stroke, and diabetes. These four diseases are among the top ten causes of death in California; heart disease, stroke and Cancer are also the top three killers in Riverside County. Poor nutrition, which can be exacerbated by land use decisions that limit people's access to healthy food, also contribute to these chronic diseases. Physical inactivity and poor nutrition is also a primary risk factor for obesity (the fastest-growing disease in California, along with diabetes), and obesity in turn increases the risk of a myriad of chronic diseases. Conversely, research shows that higher density, walkable urban places, transportation choices, and access to recreation all increase physical activity, and thus promote positive health impacts.

Land uses and urban form have other health impacts as well. Emissions from transportation sources are strongly linked with respiratory diseases, while automobile accidents consistently kill over 40,000 Americans each year. Land use decisions also impact people's access to grocery stores, farmers markets, community gardens and other sources of nutritious foods and healthcare. Poor mental health is associated with a number of factors related to planning, including long commute times, exposure to crime, lack of transportation choice and lack of access to public spaces.

Exposure to harmful substances ranging from particulate matter and emissions from industrial sources to toxic pesticides and ingredients with some toxicity found in every day household and pharmaceutical products are all Environmental Health related concerns that impact health. These harmful substances enter into our air and water supplies and accumulate in our bodies causing a range of health effects such as increased incidences of respiratory illnesses, cancer and other chronic health problems. Consequently decisions about the location and mix of land uses, transportation investments, design and building practices and building materials can all have an impact on the environment and human health.<sup>i,ii,iii,iv</sup>

## **DEVELOPMENT OF THE ELEMENT**

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The Healthy Communities Element was developed by Riverside County Staff with input from the Healthy Community Working Group and the assistance from Raimi + Associates. The Working Group was formed to provide technical assistance in developing the Healthy Communities Element. Members included staff from a variety of County programs and services including the following: Health, Epidemiology and Program Evaluation, Nutrition Services, Injury Prevention Services, Livable Communities Program, County Parks, County Planning, County Transportation, Environmental Health, Mental Health, Office on Aging, a physician from Department of Public Health, Clinic Management and the Inland Empire Health Plan. The Healthy Community Working Group assisted in identifying and translating the fundamental values of the element into strategies, identifying the key health issues and indicators, exploring creative and innovative methods of achieving improved health outcomes through existing and new policies and providing input on the policies and implementation actions in the Healthy Communities Element.

As part of the development of this Element, the project team, guided by the Healthy Community Working Group developed a Vision Statement and Guiding Principles for the Healthy Communities Element.



The Vision and Guiding Principles provide the conceptual foundation for the policies that follow. The Vision describes how Riverside County will be in terms of health twenty years from today if the policies of this Element are successful. The Guiding Principles express the overarching strategies that are being pursued with the adoption of the Healthy Communities Element. They are intended to add specificity to the Vision and to provide a roadmap to achieve the vision.

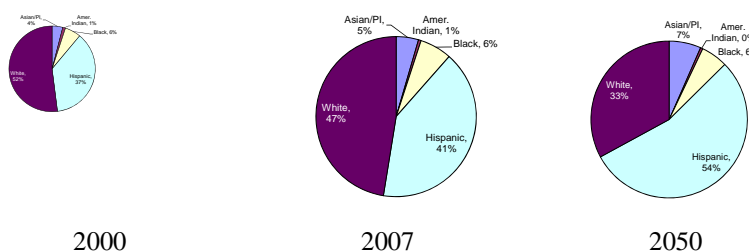
Once completed, the Element was reviewed by the General Plan Advisory Committee and then reviewed by the community before it was adopted by the Board of Supervisors.

## COUNTY HEALTH STATUS

### Current Challenges

Along with the richness of culture afforded by the county's diversity comes the challenge of serving groups of citizens with different needs and priorities. In addition to overall population growth, Riverside County has experienced shifts in its diverse racial and ethnic composition. Between 2000 and 2007, the proportion of county residents of Hispanic origin increased by 10.8%, though there was very little change in the proportion of the population that identified as Black, Asian, and Native American. By the year 2050, the Hispanic population will become the county's majority ethnic group comprising 54% of the population<sup>v</sup> (Fig. 1).

Figure 1: Population by Race/Ethnicity, Riverside County: 2000, 2007 and 2050



With nearly 40 percent of the county's population speaking a language other than English at home, it is imperative that resources and services are accessible to all.<sup>vi</sup> Health disparities exist across all groups of people represented in the county and are closely linked to availability of resources and the pattern of environmental exposures that have followed different groups over time. For example, the most recent data available indicates that Hispanic populations are more likely to live within ½ mile of a major freeway in Riverside County.<sup>vii</sup> This is concerning because exposure to diesel exhaust has been associated with increased risk for developing chronic lung diseases like asthma, cancer and heart disease.<sup>viii</sup>

As with most problems in our society, illness and disease are exacerbated by structural inequity, resource disparity, and poverty. In the current economic climate when local unemployment rates have climbed above 10 percent, more Riverside County residents will make choices that compromise their health. Those recently affected by the job loss may now be joining the more than 200,000 Riverside County residents who lived below the Federal Poverty Level (FPL) before the current recession – which in 2007 was 20,000 dollars for a family of four.<sup>ix,x</sup> Our residents living in poverty, regardless of their ethnic background, language, or skin color are extremely vulnerable to the unhealthy pressures of society and have increased exposure to environmental maladies like air pollution, toxic lead in substandard housing, and decreased opportunities to find affordable, healthy food. Intense poverty is concentrated in census tracts across the county. Public health programs often identify geographic priorities as those areas where greater than 50%

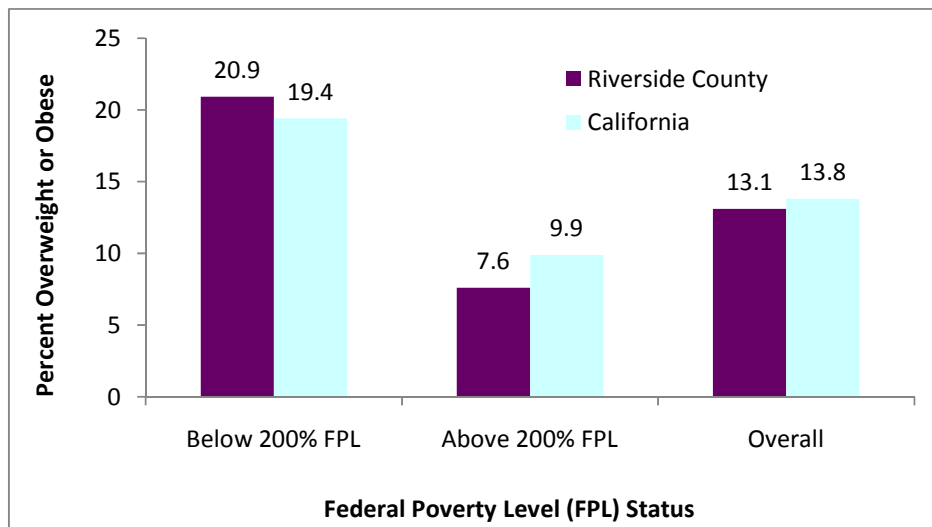
of a census tract's population earns less than 185% of the FPL, which is roughly \$32,000 per year for a family of four (Fig. 2).

Figure 2: Census Tracts Where More Than Half of Population Lives Below 185% of Federal Poverty Level: Riverside County, Census 2000



Perhaps most importantly, poverty jeopardizes the health of Riverside County's children. For example, among Riverside County youth aged 12-17, those living below 200% of FPL are nearly 3 times more likely to be overweight than youth living above 200% FPL<sup>xi</sup> (Fig. 3). In fact, the obesity epidemic threatens to make today's generation the first in this country to live shorter lives than their parents. Scientists forecast a two- to five-year drop in life expectancy unless aggressive action manages to reverse obesity rates.<sup>xii</sup>

Figure 3: Percentage of Adolescents Age 12-17 Who Are Overweight or Obese by Income Level, Riverside County and California, 2005 and 2007 Combined.

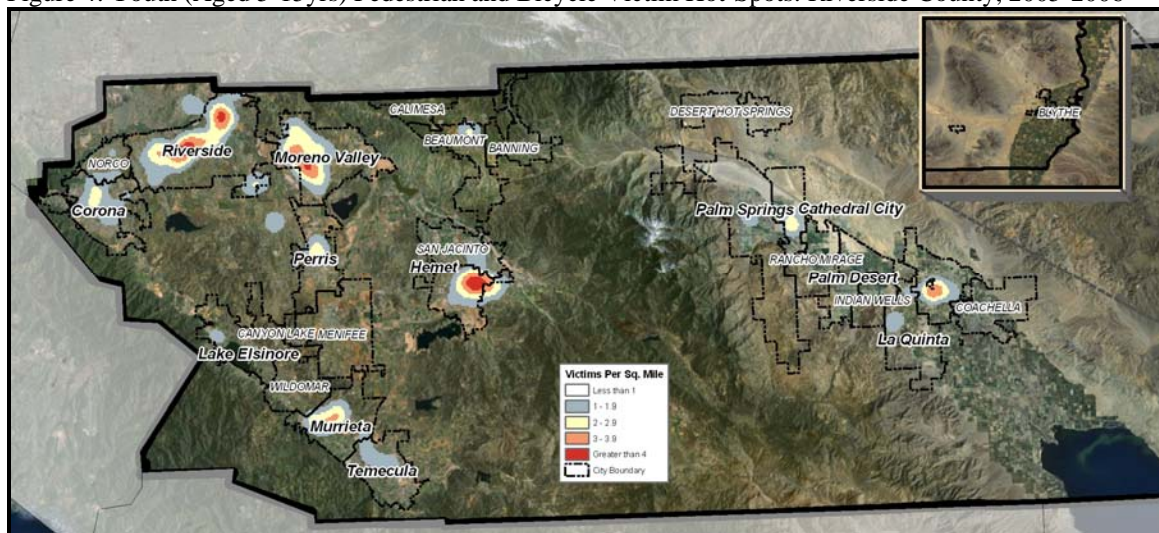




In addition, many of our children are potentially being exposed to environmental toxins, the effects of which may not be seen for years to come. According to a recent report, five schools in Riverside County rank in the 10th percentile for air quality, meaning that 90 percent of the schools in the country had better air. Twenty-five schools ranked in the 50th percentile or below.<sup>xiii</sup> Many of these schools are located in close proximity to major industrial operations that produce potentially harmful waste.

The vast geography of Riverside County poses challenges for residents by concentrating resources in urban areas and making health care access and resource acquisition difficult for rural residents. These challenges are further exacerbated by poverty which can create pockets of resource deficiency in heavily populated urban areas as well as make it even more difficult for the rural poor to access resources great distances from their homes. The county is home to more than 500,000 rural residents and 1.5 million urban dwellers. Rural residents are also more likely to live in poverty than urban residents (16% vs. 13%).<sup>xiv</sup> Despite sharing overlapping health concerns, rural and urban environments require specific solutions to their problems. For example, while preventing automobile injuries are relevant to both rural and urban citizens, the approach to prevention may take different forms. *Safe Routes to School* programs may be effective in urban environments but lack relevance in rural areas where walking to school is not feasible (Fig. 4). Whereas many Riverside County residents suffer from health conditions related to the excesses of the urban environment such as overabundance of fast food, high levels of automobile pollution, inability to find safe spaces for children to play, and raised levels of stress, the county's rural residents may find their health disrupted by an inability to access necessary services in a timely manner.

Figure 4: Youth (Aged 5-15yrs) Pedestrian and Bicycle Victim Hot-Spots: Riverside County, 2005-2006



## Major Illnesses

The overwhelming majority of illnesses that affect Riverside County residents are of a chronic nature. The most notable chronic health conditions include heart disease, cancer, stroke, diabetes, chronic obstructive pulmonary disease (COPD), and asthma. The top three leading causes of death—heart disease, cancer, and stroke—account for nearly 60% of all deaths in Riverside County.<sup>xv</sup> Aside from stealing years of life, these diseases typically reduce quality of life by requiring patients to take a barrage of costly medications, make frequent doctor and hospital visits, and make exercise and leisure activities painful or intensely onerous.



### Environmental Health

While chronic disease accounts for the bulk of morbidity and mortality in Riverside County, we must remain vigilant for new infectious diseases that continue to evolve and "emerge." Changes in human demographics, behavior, land use, etc. are contributing to new disease emergence by changing transmission dynamics to bring people into closer and more frequent contact with pathogens. This may involve exposure to animal or arthropod carriers of disease. Increasing trade in exotic animals for pets and as food sources has contributed to the rise in opportunity for pathogens to jump from animal reservoirs to humans.

Meanwhile, infectious diseases that have posed ongoing health problems in developing countries are re-emerging in the United States (e.g., food- and waterborne infections, dengue, West Nile virus). The rise in the transmission of food borne illnesses are facilitated by the dining habits of people in this State as they gravitate toward eating out more often. Also, as the main food sources have become more centralized we can see the effects in large scale outbreaks covering multiple communities, Counties and/or States.

People today are exposed to an unprecedented amount of harmful substances ranging from particulate matter and emissions from auto and industrial sources to toxic pesticides and ingredients with some toxicity found in every day household and pharmaceutical products. These harmful substances enter into our air and water supplies and accumulate in our bodies causing a range of health effects such as increased incidences of respiratory illnesses, cancer and other chronic health problems.

Environmental characteristics like traffic safety and air and water quality can also have direct and indirect health consequences. While traffic accidents may entail immediate life threatening circumstances, perception of safety can influence behavior to the point of increasing chronic disease risk. If children and parents feel unsafe in their neighborhoods due to perceived risk from automobiles or poor air quality, they are less likely to be active outdoors and, consequently, more likely to maintain sedentary lifestyles, increasing their risk of obesity, diabetes, and heart disease.

## HEALTH INDICATORS

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As part of our efforts to present the urgent need for policies that will shape community design and the health of future generations, it is important to document the current health of residents in a measurable and discrete manner so that as changes are adopted and the environment changes, progress toward achieving health goals can be monitored at the population level. A compilation of health, social, and environmental indicators is provided below. The indicators are grouped into meaningful topic areas that correspond to the policy components of the Health Element. They are provided here to lend support and justification for the policies of the Health Element.

### OVERALL HEALTH

- **Inland Empire residents not in good health**

The Riverside San Bernardino-Ontario Metropolitan area ranked 127<sup>th</sup> out of the 184 areas surveyed for the percent of residents who say they are in good health, according to a recent analysis using the CDC's SMART BRFSS data.. (<http://www.webmd.com/news/20081117/healthiest-us-city-lincoln-neb>)

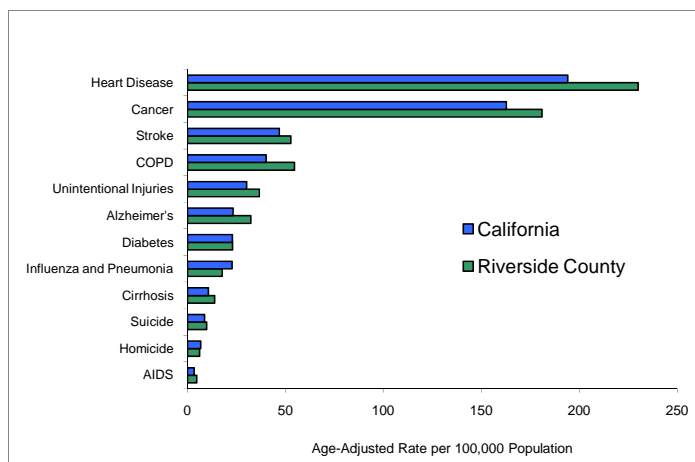
- **Health not improving**

The percent of Riverside County residents claiming excellent health fell 4 percentage points from 2003 to 2005 while the percent of those in Fair health increased from 12 percent to 15 percent during the same period. (CHIS 2003 and 2005).



- **Impairment of daily activities due to physical/mental health**  
Over 100,000 adults (8%) in Riverside County had more than 5 days a month where their ability to work or perform daily activities was limited by their physical/mental health. (CHIS 2005).
- **Ranking in heart disease mortality rates**  
Riverside County is ranked 53rd for heart disease mortality out of the 58 counties in California. The age-adjusted rate for coronary heart disease mortality was approximately 25% higher than the rate for California and the national rate (Fig. 5). (Community Health Profile, 2008: Riverside County Department of Public Health)

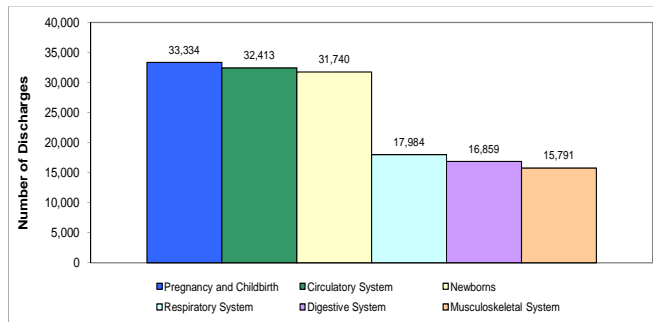
Figure 5: Population Growth in Riverside County, Department of Finance Estimates and Projections, 1970-2050



- **Causes of hospitalization**  
Disease of the circulatory system, like heart disease and stroke, account for more than 1/3<sup>rd</sup> of all non-birth/newborn related hospitalizations. These are partially influenced by obesity and levels of physical activity (Fig. 6). (Community Health Profile, 2008: Riverside County Department of Public Health)



Figure 6: Leading Hospital Discharge Categories, Riverside County, 2005

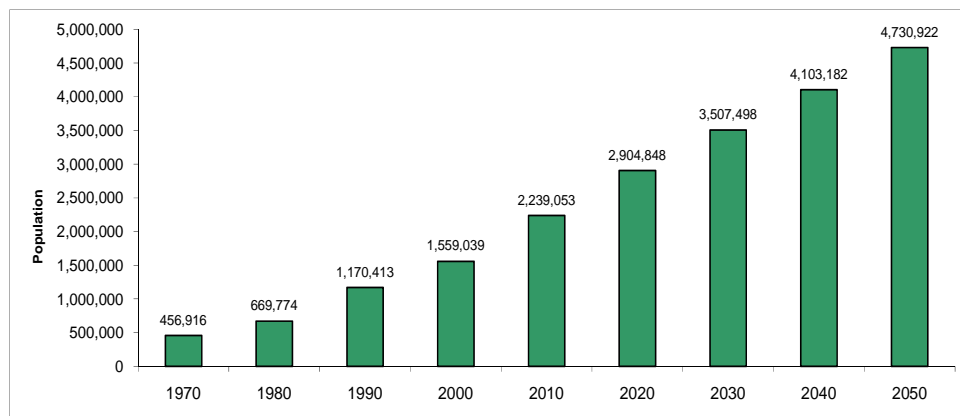


## LAND USE AND COMMUNITY DESIGN

- **Population growth**

The county experienced a 40% increase in population during the last decade; contributing to its ranking as the fastest growing county in the state. Riverside County ranks fourth in population size in California, with a projected population size reaching 4.7 million by 2050, making it the second largest county in the state (Fig. 7). (Community Health Profile, 2008: Riverside County Department of Public Health)

Figure 7: Population Growth in Riverside County:  
Department of Finance Estimates and Projections, 1970-2050



- **Population density**

Riverside was ranked 460<sup>th</sup> out of 3140 counties for population density with 214 persons per sq. mile. New York County was ranked 1<sup>st</sup> with 66,718 persons per sq. mile. The least dense place was the Yukon, Alaska at 0.045 ppl/sq.mi ([www.dataplace.org/rankings](http://www.dataplace.org/rankings)).

- **Number of single family detached housing units**



Roughly two-thirds (67%) of housing units in Riverside County are “single-unit, detached” compared to 58% in California. (American Community Survey 2006 and 2007).

- **Median size of house**

The median number of rooms in a house is 5.4 in 2007, compared to 5.2 in 2000. The median in California is 5.0 (American Community Survey 2006 and 2007, Census 2000).

## HEALTHY TRANSPORTATION SYSTEM

- **Inland Empire residents drive more than most Americans**

The Riverside-San Bernardino-Ontario metropolitan area is ranked 14<sup>th</sup> out of 100 metropolitan areas for the number of Vehicle Miles Traveled (VMT) per capita, and 10<sup>th</sup> overall for total VMT (Brookings Institute, Metropolitan Policy Program: The Road Less Traveled, 2008)

- **Getting to work**

In Riverside County, the average (mean) commute time to work was 31.6 minutes in 2007 compared to 25.1 minutes in the U.S. (American Community Survey 2007)

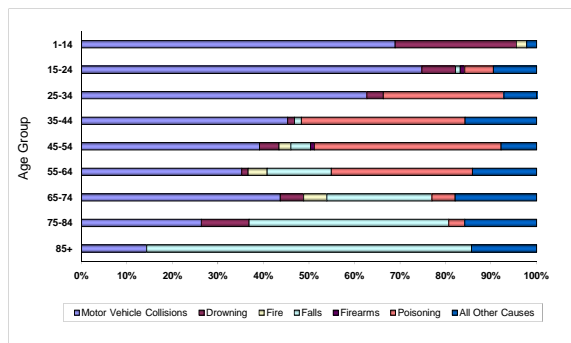
- **Youth injured in pedestrian/bicycle collisions with motor vehicles**

In the time period of 2005 and 2006 there were 486 youth pedestrian/bicycle victims injured by motor vehicles in Riverside County. Three of these bicyclists and seven pedestrians were killed. Forty children were severely injured. (Statewide Integrated Traffic Reporting System (SWITRS) 2005 and 2006)

- **Motor vehicles are a leading cause of death among youth**

Nearly 70% of children (aged 1-14 years) who died from unintentional injury in 2005 did so as a result of a motor vehicle crash(Fig. 8). (Community Health Profile, 2008: Riverside County Department of Public Health)

Figure 8: Unintentional Injury Mortality by Injury Type Within Age Groups, Riverside County, 2005





- **Number of vehicles per household**  
The percent of occupied housing units with no car available decreased from 7% in 2000 to 4.5% in 2007. During the same time period the percent of houses with 3 or more cars increased from 19% to 26%. (American Community Survey 2007, Census 2000)
- **Rates of walking**  
Roughly 1/3<sup>rd</sup> of adults do not walk for transportation, fun, or exercise. (CHIS 2003 and 2005)

## SOCIAL CAPITAL

- **Unemployment rate**  
In February 2009, the unemployment rate in Riverside County is estimated at 12.6%. (California Employment Development Department, Labor Market Information Division.  
<http://www.labormarketinfo.edd.ca.gov/>).
- **Voting rates**  
73.0% of registered voters voted in the 2008 presidential election.  
<http://www.smartvoter.org/2008/11/04/ca/rv/president.html>)
- **Poverty**  
In Riverside County, 12% of the overall population had an income placing them below the Federal Poverty Level and 14% of families with children under the age of 5 were in poverty. These numbers likely underestimate the number of people in poverty since they are calculated using a federal scale that does not account for California's higher cost of living and also do not reflect the recent economic downturn. (American Community Survey 2007 and  
<http://aspe.hhs.gov/POVERTY/07poverty.shtml>)
- **Education**  
Roughly 20% of the population over the age of 25 has not received a high school diploma compared to around 16% of the U.S. population. (American Community Survey 2007)
- **Violent crime rates**  
Between 2005 and 2006 violent crime increased 8.4% in Riverside County, with Robbery and Aggravated Assault increasing 23.4% and 2.8%, respectively. (California Department of Justice, Criminal Justice Statistics Center 2006)
- **Homicide deaths**  
Roughly 15% of all deaths among 1-24 year olds in Riverside County were due to homicide, placing it in the middle third of the 58 counties in California. (Children Now Scorecard 2008, from RAND 2001, 2003, and 2005).



## PARKS, TRAILS AND OPEN SPACE

- **Children within walking distance of outdoor space**  
As of 2003, 71% of children 0-18 were within walking distance to a park, playground, or open space. This scored a medium ranking among counties in the same income and population density category. (Children Now Scorecard 2008, from CHIS 2003).
- **Population within walking distance of a park**  
Roughly 500,000 people do not live within a half-mile of a park in Riverside County. That's 30% of the county's population. (Census 2000. Riverside County Department of Transportation and Land Management (TLMA) Parks Data 2008).

## ACCESS TO HEALTHY FOODS AND NUTRITION

- **Rates of overweight and obesity**  
Nearly 2 out of 3 adults and 15 percent of youth are overweight or obese in Riverside County. (CHIS 2005)
- **Number of adult diabetes diagnoses**  
There were over 115,000 adults diagnosed with diabetes living in Riverside County as of 2005, an increase of roughly 40,000 people since 2003. (CHIS 2003 and 2005)
- **Number of adult heart disease diagnoses**  
There were nearly 140,000 adults diagnosed with heart disease living in Riverside County as of 2005, an increase of roughly 50,000 people since 2003. (CHIS 2003 and 2005)
- **Percentage of overweight or obese teens and adults**  
The percent of overweight or obese teens and adults increased 2% from 2003 to 2005. Nearly 2 out of every 3 adults in Riverside is overweight or obese. (CHIS 2003 and 2005)
- **Children within a healthy weight zone**  
Only 68 % of children in Riverside County are considered to be a healthy weight. (Children Now Scorecard 2008, from Healthy Kids Survey 2003-05, and 2005-07).
- **Fast food consumption among youth**  
Over 40,000 teens and children eat fast food two or more times a day. (CHIS 2003 and 2005)
- **Consumption of fruits and vegetables**  
80% of teens, 50% of adults, and 50% of children do not eat the recommended 5 fruits and vegetables a day. (CHIS 2003 and 2005)

## HEALTHCARE AND MENTAL HEALTH CARE

- **Licensed hospital beds**  
In 2005, there were 80,932 licensed hospital beds in California, a rate of 2.2 beds per 1,000 residents. Riverside County had 2,880 licensed beds in 2005, a rate of 1.47 per 1,000 residents, 33% lower than



the California rate. (Office of Statewide Health Planning and Development (OSHPD), Regional Medical Facility Profile, 2008)

- **Physician to population ratio**  
Nationally, there were 198 active physicians per 100,000 residents in 2000. California maintains a higher rate of active physicians with 231 physicians per 100,000 residents. Yet, Riverside County has only 125.8 active physicians per 100,000 residents. (Center for Health Workforce Studies University at Albany, SUNY (2004). California Physician Workforce Supply and Demand through 2015. Regional Medical Facility Profile, 2008: Riverside County Department of Public Health)
- **Health insurance**  
The percent of children with health insurance increased from 89.9% in 2005 to 93.1% in 2007. However, the percentage of insured adults (18-64 yrs) fell from 80.8% to 77.7% during the same time period. (CHIS 2005 and 2007)
- **Usual source of care or medical home**  
In 2007, roughly 76,000 children and teens in Riverside County had no usual source of care to go to when sick. (CHIS 2007)
- **Adolescents at risk for depression**  
25% of adolescents are at risk for depression in Riverside County. (Children Now Scorecard 2008, from Healthy Kids Survey 2003-05, and 2005-07)
- **Suicides**  
There are nearly 200 suicides a year in Riverside County. Between 2006 and 2007, there were more than 5 suicides a year among children below the age of 18. Among high school students, Hispanic females and Black males are most likely to think about and attempt suicide when compared to their classmates. (Death Statistical Master Files 2006-2007: California Department of Public Health. Riverside County Sheriff-Coroner. Prevention and Early Intervention, 2008: Riverside County Department of Mental Health)
- **Prevalence of mental illness**  
The State of California estimates that 114,240 Riverside County residents have some form of mental illness. The latest estimate is that 60% of these individuals are not receiving needed mental health services. (Prevention and Early Intervention, 2008: Riverside County Department of Mental Health)

## SCHOOLS, COMMUNITY FACILITIES AND CHILDCARE

- **Percent of children who walked/biked to school**  
Roughly 20% of school aged children in Riverside County walked/biked to school versus 30% in California overall. (CHIS 2005)
- **Child care availability**  
Riverside County child care centers currently have 15 slots available for every 100 children aged 0-5. This is much lower than the 22 slots per 100 in California overall, meaning that Riverside needs to increase its child care capacity significantly just to get on par with the State. (Child Care Licensing Division, 12/2008; American Community Survey 2007, and American Community Survey 2005-2007)



## ENVIRONMENTAL HEALTH

### Air Quality

- **Asthma-related hospitalizations**  
In 2005, the greatest percentage of asthma-related hospitalizations were among those under age 18 (38%), followed by those over 65 (19%). Blacks experienced the greatest rate of hospitalizations in 2005, at 225.7 per 100,000 population, versus 99.5 and 81.2 per 100,000 for Hispanics and whites, respectively. (Community Health Profile, 2008: Riverside County Department of Public Health. Data from Office of Statewide Health Planning and Development (OSHPD), 2005)
- **Risk of cancer from diesel soot and other toxic air pollutants**  
The cancer risk from diesel soot and other toxic air pollutants increased 2 percent in Riverside County between 1998 and 2005, a period in which the regional risk dropped by 8 percent. (Press Enterprise 9/10/2008; South Coast Air Quality Management District (AQMD))
- **Cost of poor air quality**  
Poor air quality costs Riverside and San Bernardino counties an estimated \$6.3 billion in health care expenses, sick days and deaths with the average cost of \$1,500 to \$1,600 per person. (Press Enterprise, 11/13/2008: Cal State Fullerton's Institute for Economic and Environmental Studies).
- **School children exposed to excess air pollution**  
29 of 155 (19%) private schools in Riverside County are located within a ¼ mile of a major highway. In addition, 55 of 498 public schools (11%), and 83 of 392 (21%) licensed child care centers are located within a ¼ mile of a major highway. The licensed child care centers have a capacity to provide care for over 5,500 young children. (Network for Healthy California GIS, Child Care Licensing Division, 2008)
- **Housing locations place residents at risk**  
Nearly 350,000 Riverside County residents live within a ½ mile or less of a major highway, including roughly 40,000 children under the age of 5. (Census 2000)

### Hazardous Waste/Substances

- **Growth in chemical waste production**  
48 Riverside County facilities produced nearly 6,200 tons (12,385,985 lbs) of chemical waste that required disposal. In 2002, 49 County facilities produced roughly 4,800 tons of waste that required management. (EPA, TRI Explorer Waste Quantity: Chemical Report data for 2006 and 2002, accessed 11/20/2008)
- **School children at risk from potentially harmful toxins**  
According to a recent report, 5 schools in Riverside County rank in the 10th percentile for air quality, meaning that 90 percent of the schools in the country had better air. Twenty-five schools ranked in the 50<sup>th</sup> percentile or below. Many of these schools are located in close proximity to major industrial operations that produce potentially harmful waste.



(USA Today online report accessed Dec. 2008

[http://content.usatoday.com/news/nation/environment/smokestack/search/CA/~Riverside+County/~n/ame/~1/.](http://content.usatoday.com/news/nation/environment/smokestack/search/CA/~Riverside+County/~n/ame/~1/))

**Infectious Disease**

- **West Nile Virus**

West Nile Virus (WNV) remains a potential health hazard in Riverside County. Controlling mosquito populations is important for community health. Unmonitored swimming pools and other sources of standing water can provide havens for mosquitoes which can increase WNV activity in surrounding areas. The number of cases increased substantially in 2008 after large decreases in 2006 and 2007 (Fig. 9). (Riverside County Department of Public Health)

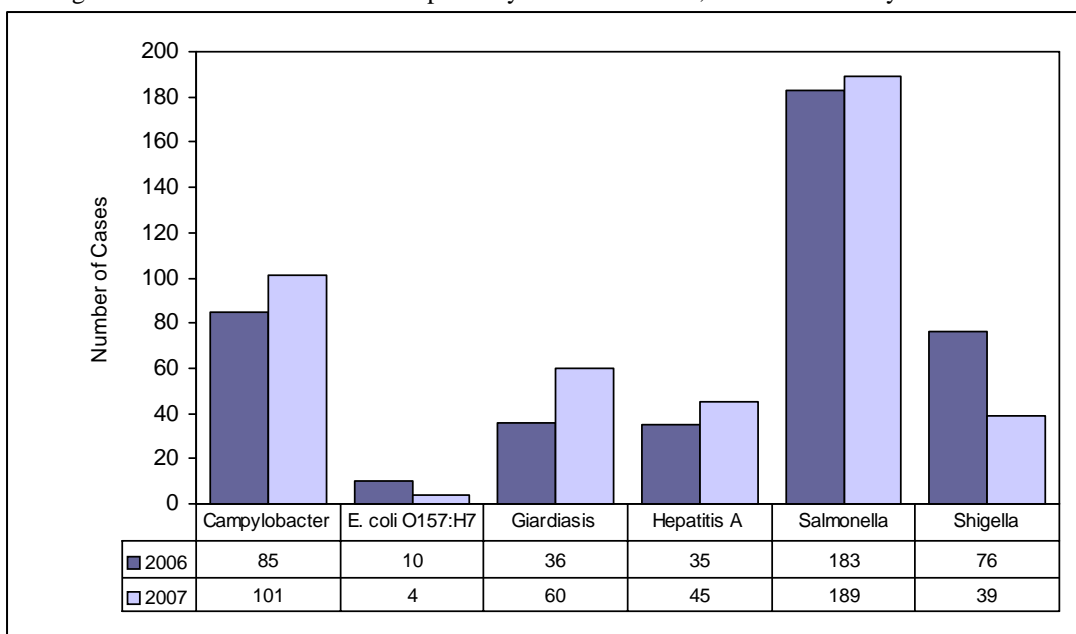
Figure 9: Reported West Nile Virus (WNV) Cases, Riverside County 2000-2008

Disease	2000	2001	2002	2003	2004	2005	2006	2007	2008
West Nile Virus	0	0	0	0	116	103	4	17	62

- **Diseases Spread by Food and Water**

Although infectious diseases commonly spread by contaminated food and water do not typically cause epidemic levels of illness or death, prevention and containment remains an integral part of public health. For the past 7 years, salmonellosis has been the most commonly reported disease spread by food and water in Riverside County. Rates for enteric infections of salmonella, shigella, campylobacter, and giardia are higher among 0-4 year olds compared to other age groups. There was a 66.6% increase in the number of giardiasis cases from 2006 to 2007 (Fig. 10). (Riverside County Department of Public Health, Communicable Disease Report 2007)

Figure 10: Incidence of Diseases Spread by Food and Water, Riverside County 2006-2007



# County of Riverside General Plan

*DRAFT- Health Indicators HCE 04/07/09*



- <sup>i</sup> D. Stokols et al., *Traffic Congestion, Type A Behavior, and Stress*, Vol. 63, *Journal of Applied Psychology*, at 467-480 (1978).
- <sup>ii</sup> R. Novaco et al., *Transportation, Stress, and Community Psychology*, Vol. 7, *American Journal of Community Psychology*, at 361-380 (1979).
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