PLANNING COMMUNITIES:
WHAT HEALTH HAS TO DO WITH IT

"Building a freeway to reduce traffic congestion is like loosening your belt to prevent obesity."—WALTER KULASH

Television commercials remind us that high cholesterol comes from our diet and from our ancestors, but our community also helps determine how healthy we are. Without us realizing it, the buildings, streets, and open space that make up our communities – the built environment – shape our lives, our health, our social relationships, and even influence our behavior.

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HISTORY OF URBAN PLANNING AND HEALTH

The roots of modern land use planning grew out of concerns about the public's health. People living in 19th century cities lived in the midst of farm animals, butcher shops, tanneries, and industry with virtually no sewage or sanitation. Early land use and zoning measures were established at this time to protect people from contagious diseases such as tuberculosis and cholera, which were spread by sewage, contaminated water and air, and crowded, substandard housing. Public health practitioners helped initiate zoning to keep the most toxic land uses, such as slaughter houses and tanneries, separate from housing. Otherwise, there were few limitations and communities were built with a mixture of closely-located functions, including homes, businesses, schools, transportation and manufacturing. Distances were short and people lived close to where they worked.[1]

Public health practitioners' role in land use and zoning was an effective response to the communicable disease epidemics of the 19th century. Since that time public health departments have continued to play a role in ensuring that housing and places of business are clean and free from disease, and in monitoring industry to limit exposure to environmental contaminants. As the communicable diseases of the past have been contained, chronic diseases such as heart disease, diabetes, cancer, and asthma have emerged as the leading causes of sickness and death. Over the last half century, the focus of modern public health practice has shifted to reducing risk factors for chronic disease as well as reducing the incidence of traffic injuries, community violence, and disparities in health status between people of different ethnicities and income levels. Today's public health strategies include improving the built environment along with other fundamental approaches such as increasing access to health care, providing community education, and advocating for policies that support a healthy lifestyle.

HOW THE BUILT ENVIRONMENT AFFECTS HEALTH

Heart disease, cancer, stroke, diabetes, asthma, injuries, and violence all have risk factors in common. These factors are linked to the places where people live and work, the distance between these places, and how people get from one place to another. Risk factors include limited access to places for everyday physical activity and obtaining nutritious food; poor air quality; unsafe walking and biking conditions; unsafe public gathering places; substandard housing; and compromised air quality.

> *"The farther we live from where we work and conduct our daily activities, the more driving we do, the more health and safety problems we create. More automobiles, more air pollution, more injuries."*[2]

Physical Activity

Despite evidence that regular physical activity reduces rates of obesity, diabetes, and chronic disease, most Americans don't get the minimum daily requirement of about one-half hour most days of the week.[3] A generation ago, most of us walked to school. Yet between 1977 and 1995 walking declined by 42%, while driving increased to about 89% of all trips.[4] Today, many of us live some distance from where we work, go to school, and buy our groceries. This encourages us to use the car for daily errands and trips, and discourages walking and bicycling.

Walking and bicycling, the most inexpensive and accessible forms of physical activity, are influenced by auto-oriented community design.[5] Barriers to what used to be "every day exercise" include missing or narrow sidewalks; lack of access to paths and parks; neighborhoods that are unsafe due to traffic or street violence; and long distances to useful and appealing destinations.[6] Studies show that when community design accommodates and integrates pedestrians and bicyclists, there are greater levels of walking and bicycling.[7] Thus, people are more likely to walk or bicycle for pleasure or goods and services when destinations are nearby, safe, useful, and attractive.

Nutrition

Recent figures attribute 35% of all cancers and 20-30% of all premature heart disease to diet.[8] A poor diet is also a risk factor for diabetes and obesity. Though we generally think of this issue in terms of personal food choices, our community environment often promotes unhealthy, super-sized food, and limits access to healthy food. Studies indicate that people who live in a neighborhood with access to a grocery store are more likely to eat a healthy diet.[9] Unfortunately, many low-income communities lack a grocery store – and are saturated with fast food restaurants and convenience stores that sell primarily liquor, sodas, and unhealthy snacks. A recent study showed that in Contra Costa County, there are 4.66 times as many fast food restaurants and convenience stores as supermarkets and produce vendors.[10]

The type, location, and number of food outlets is a result of jurisdictional zoning decisions and market forces that determine the placement of full-service grocery stores and other food outlets. Marketing and advertising unhealthy products like alcohol, tobacco, and junk food, often governed by local signage ordinances, also shapes the food environment.

An All-Too-Common Case Study

Leon Robinson drives to work in San Francisco daily. He uses his car for work during the day, so taking public transportation is not practical for him. Leon drops his son off at junior high, while his wife drives their younger daughter to elementary school. Both of the schools are within walking distance, but Leon and his wife don't feel safe letting the kids walk. Leon spends up to two hours a day commuting, much of it just sitting in traffic. At 42, Leon is overweight and was recently diagnosed with Type II Diabetes.

On the weekend, the family does grocery shopping, and the parents drive the kids to soccer practice and to their friends' houses. These errands are done by car because of time constraints and because the shopping center is more than a mile away, not easily walkable. Occasionally Leon and his wife, or sometimes the whole family, go to a weekend movie. These trips too are taken by car. Leon knows he should get more exercise, but he just doesn't have the time. He would like to live in a more convenient location, but housing prices closer to his work are too high, so he endures the commute.

Leon's lifestyle makes a case for safer streets, improved public transit, and mixed-use development that would enable Leon's family to conduct some of their activities without using the car. This would give them the opportunity to have physical activity "built-in" to their daily lives, breathe cleaner air, and become more connected to their community.

Asthma

Outdoor air pollution that triggers asthma originates from mobile and stationary sources in the built environment.[11] Mobile sources, primarily vehicle emissions, are responsible for one-third to one-half of all air quality problems. The resulting poor air quality is a risk factor for asthma, and studies confirm that children who live near busy roads are three times more likely to be treated for asthma than those who don't.[12] In addition to automobiles themselves, trains, trucks, buses, and ships involved in the movement of people and goods all have a tremendous impact on air quality. The movement of goods through California is projected to quadruple between 2000 and 2020, and without improvements, there will be a significant impact on air quality, increasing risks for asthma and other respiratory diseases.[13] Globally, vehicular emissions are a major contributor to the warming of the atmosphere, which has in turn increased pollen production and is thought by scientists to have increased asthma worldwide.[14]

Stationary sources of air pollution include power plants, refineries, and other industrial facilities that also contribute significantly to asthma risk. These sources are responsible for a significant amount of air contaminants in Contra Costa County that increase the occurrence of asthma episodes, and decrease lung function and growth.[15] These facilities produce regular emissions as a by-product of the manufacturing process, and also produce occasional toxic releases. These stationary sources are often located in close proximity to low-income communities of color,[16] contributing to health disparities.

Pedestrian and Bicycle Injuries

In California, pedestrian injuries are 17% of all traffic-related injuries, though only about 7% of all trips are made on foot.[17] This is significantly higher than the pedestrian injury rate for the United States as a whole. Although our vast network of freeways is where the most lethal traffic crashes occur, a significant number of fatal and non-fatal injuries, especially to pedestrians and bicyclists, occur on neighborhood streets. Automobile speeds and local street design are the major environmental risk factors for pedestrian and bicycle injuries.[18]

Most post-WWII communities were built to accommodate vehicle travel and often neglected the safety of pedestrians and bicyclists.[19] Street design during this time frequently included wide vehicle travel lanes, no designated space for bicycles, limited space for walking, and limited or inadequate pedestrian crossings. These and other factors encourage unsafe speeds and increase conflicts between vehicles, pedestrians, and bicyclists, contributing to injuries and death.[20]

Strategies to reduce these risks include adopting engineering measures to slow cars, known as traffic-calming, near schools and in residential and commercial areas. Community design can also support safe walking and bicycling by incorporating compact, mixed-used development that promotes a greater pedestrian presence, thus reducing the dominance of cars.[21]

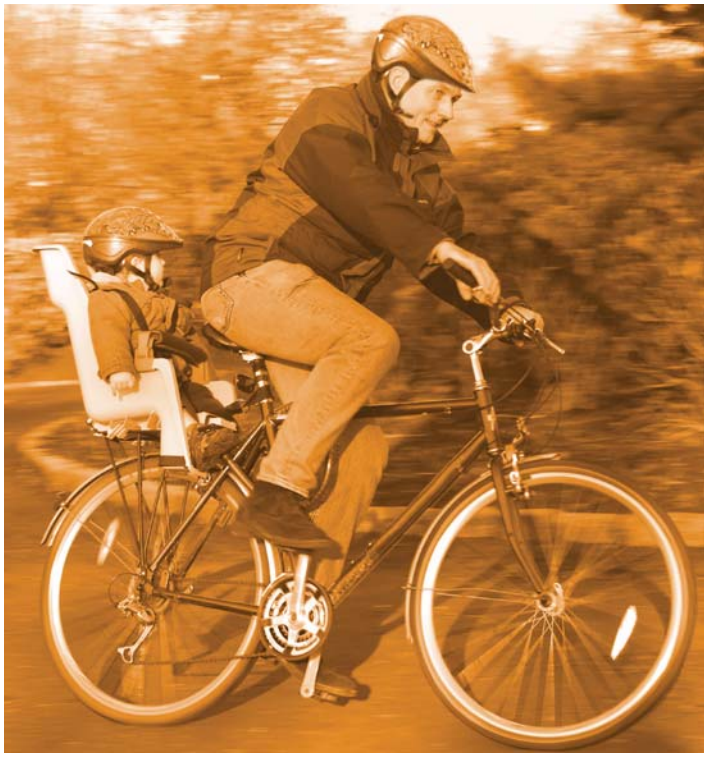
Three out of the top 10 most congested Bay Area commutes are in Contra Costa County. These include the #1 most congested location, Interstate 80 westbound in the morning, and #6 and #8, Highway 4 westbound in the morning and eastbound in the evening.

source: Metropolitan Transportation Commission

Homicide and Assault

Community violence is a significant public health threat in many communities. Patterns of homicide and assault generally correspond to patterns of housing segregated by poverty and race. In low-income communities, inadequate school systems, substandard housing, poor physical infrastructure, and lack of a thriving local economy lead to community deterioration, loss of community pride and hope, joblessness, and substance abuse – all of which contribute to higher rates of street violence.[22]

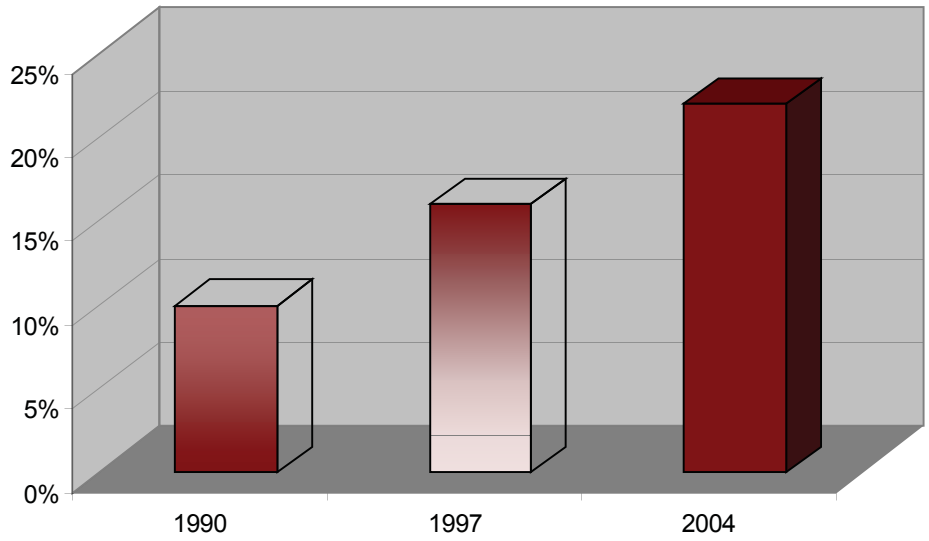
Along with other interventions, land use and transportation planning can help curb community violence. Research shows that crime rates are influenced by the design of both the buildings and the space surrounding the buildings. The "eyes on the street" concept inherent in mixed-use development, with residences above retail, makes it more likely that residents perceive the street as "their" space and will take action if they observe criminal behavior.[23] Inclusionary housing, where mixed income levels are included in the same development, is another promising strategy to help reduce violence. Incorporating sound built environment principles in low-income communities is an important part of the solution to crime and violence. However, careful planning is needed to ensure that existing residents are not displaced.



Economic Costs of Dispersed Development

These health and safety issues have costs for individuals, businesses, our health care system, and for cities and counties. This graph outlines some of those costs.

The following graph illustrates dramatically rising adult obesity rates over a 15-year period, increasing from 9.8% in 1990 to 22% in 2004



In 2003, California spent $7.7 billion on obesity-attributable healthcare costs, over nine times the cost of providing health insurance to all uninsured men, women, and children in California (Finkelstein, et al, 2004; UCLA, 2005).

Costs of Dispersed, Auto-Oriented Development

- As of 2003, combined housing and transportation costs had increased to 57% of the average household budget.[24]
- San Francisco's Bay Area Economic Forum estimates that businesses lose $2B per year while employees sit in traffic.[25]
- A house built in the urban fringes costs $10,000 more in public services than one built in the urban core.[26]
- Moving to an area with lower housing costs often doesn't pay off for low-income Americans. Moving to an inexpensive outer suburb, but continuing to work near a city center, often results in commuting costs that equal or outstrip the savings on housing.[27]

- Free or under-priced parking actually costs cities and counties significantly in wasted land use, traffic congestion, and poor air quality.[28]

POLICIES AND BEST PRACTICES FOR A HEALTHY BUILT ENVIRONMENT

If the way communities are built contributes to health problems, communities can also be planned and constructed in a way that reduces risk factors for chronic disease, traffic injuries, and violence – and improves health and quality of life for residents of all income levels. Local cities, Contra Costa County, and others across the state and nation are beginning to learn about, plan and develop, or re-develop, healthier communities. A combination of best practices and policies that incorporate compact development, mixed-use, transportation alternatives, traffic calming measures, and inclusionary housing, are all part of creating a healthier, safer, and more livable community.

Compact, mixed-used development emphasizes having less of a development "footprint" in the same amount of space and the co-location of residences, goods and services, and transit. Alternatives to automobile transportation such as bus rapid transit, pedestrian and bicycle facilities, light rail, and rail rapid transit have the potential to dramatically reduce automobile dependence. If implemented on a broad scale these practices will create healthier local communities, and contribute to a reduction in global warming.

The Impact of Built Environment Strategies on Health

This table illustrates the links between land use, transportation, and open space practices, their impact on the built environment and subsequent health outcomes.

STRATEGY	BUILT ENVIRONMENT IMPACT	HEALTH OUTCOME
Transportation Neighborhood traffic calming,[29] bicycle lanes and paths, wide sidewalks, street trees,[30] transportation options[31]	–Slows traffic & makes neighborhood streets safer for pedestrians and cyclists –Provides alternatives to automobile travel –Decreases air pollution, carbon dioxide emissions	–Reduces injuries –Increases opportunities for walking or cycling to transit, reducing risk for chronic diseases –Reduces obesity and associated diseases –Reduces asthma
Land Use Compact mixed-use development;[32] co-location of housing, jobs, services, transportation; inclusionary zoning;[33] healthy food retail and restrictions on unhealthy food outlets;[34] reduced density of alcohol outlets;[35] land use patterns that encourage neighborhood interaction and a sense of community;[36] multi-use school facilities that can be used evenings and weekends	–Decreases automobile use –Decreases air pollution, carbon dioxide emissions –Creates useful and attractive pedestrian destinations –Supports healthy food retail and restricts poor quality food and alcohol outlets –Can foster "eyes on the street" –Ensures that housing development includes affordable homes	–Increases walking and bicycling, reducing risk for chronic diseases[3] –Reduces asthma –Reduces obesity and associated diseases –Increases neighborhood safety, reduces violence and creates a sense of community safety and security
Open Space Parks,[37] trails, urban forests, community gardens and urban farms, paths, greenways, street trees[38]	–Creates attractive destinations and space for recreation –Can connect parts of the community –Improves air quality –Improves quality of life	–Increases physical activity, thereby reducing risk for chronic diseases –Decreases asthma –Reduces stress and isolation associated with violence –Helps create a sense of community

Communities with these characteristics don't just happen. They are the result of complex transportation and land use planning processes. City or County General Plans, Specific Plans, Redevelopment Areas, Zoning Codes, local street design standards, and Transportation Plans all contribute to how healthy we are. Among transportation and land use strategies that support health are:

Land Use, General Plans, and Zoning

- **Prioritize business development in suburban residential communities to reduce vehicular traffic to urban job centers.**
- **Establish or revise zoning to create useful, attractive, accessible destinations, where residents can easily conduct daily business without a car.**
- **Utilize selected Crime Prevention Through Urban/Environmental Design (CPTED) and other strategies to create safe, crime-free public spaces; avoid those that create barriers between neighborhoods.**
- **Establish development with good connections to homes, shops, schools, and offices so people have many walking and bicycling choices.**
- **Enact inclusionary housing policies – different income levels in same neighborhood or development to create inclusive communities.**
- **Take every opportunity to establish green space, from parks large and small to street tree and urban forest programs to edible landscaping and community gardens. Maximize the extent to which all community residents can walk to these facilities.**
- **Accommodate urban agriculture and community gardening in the Open Space Element.**
- **Create joint use agreements with school to allow use of playgrounds and community meeting space.**
- **Protect agricultural lands by maintaining parcels large enough to support agricultural production and prevent conversion to non-agricultural uses.**
- **Develop local policies that support the establishment of full-service grocery stores, farmers' markets, and other fresh produce outlets.**
- **Limit the number and concentration of fast food restaurants and outlets that sell tobacco and alcohol.**
- **Add a Health Element to your jurisdiction's General Plan and incorporate health principles in its other elements.**

Traffic and Transportation

- **Improve access to transit and transportation alternatives; set high goals for getting people out of their cars.**
- **Revise local street standards and policies to create safer, more accessible environments for pedestrians, bicyclists and all users; including multi-modal goals and levels of service.**
- **Create a separate bicycle plan and pedestrian plan referenced in the Circulation Element of your General Plan; include designated Pedestrian Districts, and an interconnected network of sidewalks, on-street bike lanes, and designated bike trails.**
- **Establish Neighborhood Traffic Calming Plans throughout your jurisdiction to slow traffic and maintain neighborhood safety.**
- **Establish parking policies that charge fair-market prices for parking, and return the resulting revenue to the jurisdiction for public improvements.**
- **Adopt and implement "Complete Streets" policies that call for accommodating all users of the road.**
- **Develop "Safe Routes to Schools" programs to improve pedestrian and bicycle safety, especially for children.**

Contra Costa is a diverse county both in its geography and its people, so "one size does not fit all." While these policies and practices apply to all communities, the needs, interests, practical considerations, and solutions will be different for each community. For this reason, community involvement and the involvement of health professionals can be a meaningful addition to community planning processes.

A NEW ROLE FOR PUBLIC HEALTH

In recent years planners, engineers, elected and appointed officials, and community residents have begun to incorporate health concepts and language into their community planning work. At the same time, public health practitioners have begun to learn about the ways in which land use and transportation planning can improve community health. As this movement progresses, new roles are emerging for public health to;

- **Provide data on the extent and nature of local health problems.**
- **Where quantitative local data is unavailable, provide qualitative data from community focus groups, key informant interviews, and community meetings.**
- **Identify the health impacts of proposed developments to shape local and state policies.**
- **Provide input on the development of health goals or a health element within general plans, regional transportation, and regional comprehensive plans.**
- **Participate in ongoing local land use and transportation planning and policy development.**
- **Provide training and foster the involvement of residents in community planning processes.**
- **Educate the public, planners, elected officials and others on the links between land use and health.**

In Contra Costa County, planners and health professionals are working together to promote health through land use and transportation planning. Under the direction of the County Board of Supervisors, the county's Community Development, Health Services, and Public Works Departments are working together on a Planning Integration Team for Community Health (PITCH). PITCH's purpose is to identify and coordinate land use and transportation planning efforts to improve community health in Contra Costa's unincorporated communities.

Contra Costa Health Services (CCHS) is working with two local cities to include a Health Element in the City General Plan, and, foster resident and business capacity to incorporate pedestrian safety and "walkability" into a Redevelopment Plan. CCHS has provided input into several Community-Based Transportation Plans, and is currently working with planners, community groups,

and residents to develop an alternative truck route to decrease residents' exposure to diesel particulate matter. Because built environment approaches are just one part of a comprehensive approach to health improvements, CCHS will continue to integrate built environment approaches, where sensible and realistic, into its other public health activities.

Facts & Figures

In Contra Costa County, as in California, the three leading causes of death are heart disease, cancer and stroke. Other serious conditions that lead to death and decreased quality of life include diabetes, obesity, asthma, injuries, and homicide. Below is a closer look at the health and safety conditions that affect Contra Costa residents. All health data were taken from the *Health Indicators for Selected Cities and Places in Contra Costa County* (Contra Costa Health Services, 2004) unless otherwise indicated.

Health Disparities

- The National Institute of Health defines health disparities as differences in the incidence, prevalence, mortality, and rate of diseases and other adverse health conditions between specific population groups. Many of these differences can be attributed to social determinants of health, e.g., education, income level, ethnicity, quality of housing, and neighborhood safety and quality of life.
- People of color are disproportionately represented among the poor and living in poor neighborhoods can have a direct negative impact on health.
- In Contra Costa, African Americans, Latinos, and those living in low-income communities are at greater risk for poor health outcomes. The health data that follows reveals significant disparities in Contra Costa County.

Heart Disease

- Heart disease is the leading cause of death in the country, and in Contra Costa, where it accounts for 27% of all deaths.
- From 2000-2002 about 5,623 Contra Costa residents died from heart disease, approximately 1,875 each year.
- People living in San Pablo, Oakley, Richmond, Antioch, Brentwood and Pittsburg, as well as African Americans and men, are more likely to die from heart disease compared to the county overall.

Cancer

- Cancer is the second leading cause of death in the country, and in Contra Costa, where it accounts for 25% of all deaths.
- From 2000-2002, there were 5,037 Contra Costa residents who died of cancer, approximately 1,675 each year.
- Residents of San Pablo, Oakley, Martinez, Brentwood, and Richmond are more likely to die from cancer compared to the county overall.
- African Americans are more likely to die from cancer compared to Contra Costa as a whole. Asians and Latinos are less likely to die from cancer compared to the county as a whole.

Stroke

- Stroke is the third leading cause of death in the country, and in Contra Costa, where it accounts for 9% of all deaths.
- From 2000-2002, 1,810 Contra Costa residents died of stroke, approximately 600 each year.
- Residents of San Pablo, Oakley, Pittsburg and Richmond are more likely to die from stroke compared to the county overall.
- African Americans in Contra Costa are more likely to die from stroke and Asians, Latinos, and Whites are equally likely to die from stroke.

Injuries

- Unintentional injury (all injuries except homicide and assault) is the fifth leading cause of death in Contra Costa. Car crashes are the leading cause of unintentional injury death among all age groups combined.
- From 2000-2004, 3,960 Contra Costa residents were hospitalized as a result of motor vehicle crashes; 15% of these were pedestrians and bicyclists, higher than the national average of 11%.
- Residents of San Pablo and Martinez are more likely to die from unintentional injury compared to the county overall.
- Residents of Antioch, Martinez, Richmond, and San Pablo are more likely to suffer pedestrian injuries, and residents of Concord and Richmond have higher rates of bicycle injuries.[39]

More Facts & Figures

Diabetes

- Almost 6% of Contra Costa residents have been diagnosed with diabetes, virtually the same rate as the Bay Area.
- African Americans in Contra Costa (12%) are more likely to be diagnosed with diabetes compared to the Bay Area (5%) as a whole.
- African American and Latino, as well as people living in San Pablo, Richmond, and Pittsburg, are more likely to die from diabetes compared to the county overall.
- Diabetes is on the rise. Experts predict that if current trends continue, one in four African American and Latino children born in California will develop diabetes in their lifetime. Increases in diabetes will increase chronic health conditions such as heart disease, stroke, blindness, kidney failure and leg and foot amputations.

Obesity

- Obesity is a significant risk factor for heart disease, cancer, stroke, and a major contributor to soaring rates of diabetes.
- In Contra Costa County 3,635 fifth graders, or 31%, are overweight. Fifth graders in the Byron (47%), Pittsburg (46%) and West Contra Costa (42%) school districts are more like to be overweight compared to the county overall.
- Twenty percent of Contra Costa adults are obese, a rate slightly higher than all of California.
- African American (32%) and Latino (21%) Bay Area residents are more likely to be obese compared to the Bay Area adults overall (16%).

Childhood Asthma

- In Contra Costa County about 15% of children 0-14 years have asthma.[40]
- From 1998-2000, 1,256 Contra Costa children ages 0-14 were hospitalized for asthma, or about 419 annually.[41]
- The hospitalization rate for children who live in Richmond and San Pablo (42/10,000 children) is much higher than the state average (18/10,000 children).
- From 2001-2003 the percentage of African American children diagnosed with asthma in Contra Costa County increased from 14% to 26%.
- In Contra Costa, the hospitalization rate for African American children (63/10,000) is almost five times that of White children (13/10,000).[42]

Homicide

- Homicide is the third leading cause of death among all Contra Costans under 25 years of age.
- From 2000-2002, 183 Contra Costa residents, died from homicide, approximately 60 each year.
- Over half (97) of these homicides were African American men. Men living in Richmond are 13 times more likely to die from homicide than people living in other areas of the county.
- Most of the homicide deaths occurred among African Americans (107), followed by Whites (37), Hispanic/Latinos (19), Asians (14), and other (6).

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WHERE DO WE GO FROM HERE?

Past land use and transportation planning practices have contributed to serious health, safety and quality of life problems for local communities and for the planet. They have also contributed to the dramatic health disparities. These factors, along with projected state population increase of 12.5 million over the next 25 years, demands that we accelerate the pace of healthy urban planning.

We need to get out of our cars, find ways to make it safer, easier, and more attractive to walk and bicycle, and find alternative modes of transportation to and from work. We must also create communities where goods, services, jobs, schools, residences, and parks are located within easy traveling distance by foot or bicycle. And we must do these things in a way that benefits residents of all ethnic groups and income levels.

Studies indicate that public interest and demand for communities with these characteristics is high.[49] Residents and community leaders alike place a high priority on health, equity, and quality of life for themselves, and for others. Many planners and engineers have become skilled at applying healthy land use and transportation practices, and health departments have gained significant capacity to contribute to urban planning.

These factors create an unprecedented opportunity to work across sectors and with the public to create healthy, livable communities for everyone. A great deal can be accomplished working at the local level, within each jurisdiction and with neighboring jurisdictions. When we revise or amend a General Plan, or create a Redevelopment Area, or set transportation priorities, we have excellent opportunities to create a healthier community. This in turn, will influence policy at the state and national level, improving the health of our communities for future generations.

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