Appendix A
BARHII's SDOH Model
Selected Sections Analysis

Social Inequities: The Social Gradient, Living with Long Term Stress, and Early Life

The Social Gradient

1. A social gradient runs through all societies. In any society, life expectancy is shorter and diseases are more common further down the social ladder (Wilkinson and Marmot, 2003). Californians die at younger ages in neighborhoods where educational attainment is lower, unemployment is higher, and poverty is more widespread (CDPH, 2013).
2. Tools and processes are available to help planners tackle the conditions that create or exacerbate poor health (Wilkinson and Marmot, 2003). If planning fails to address these factors, it not only ignores the most powerful determinants of health and wellbeing, it also ignores one of the most important social justice issues facing modern societies.

What is known

1. People further down the social ladder usually run at least twice the risk of serious illness and premature death as those near the top (Wilkinson and Marmot, 2003). The effects are not confined to the poor (Wilkinson and Marmot, 2003). Even among middle class office workers, lower ranking staff suffers much more disease and earlier death than higher ranking office workers.
2. Poor social and economic circumstances affect health throughout life (Wilkinson and Marmot, 2003). For millions of families they are perpetuated from one generation to the next, leaving families with few opportunities to make healthful decisions (CDPH, 2013). Disadvantage includes living in poor housing, having fewer family assets, having a poorer education during adolescence, having insecure employment, becoming stuck in a hazardous or dead-end job, trying to raise a family in difficult circumstances, and living on an inadequate income or pension. Both material and psychosocial causes appear to contribute to these differences and their effects extend to most diseases and causes of death
3. Across the USA, these disadvantages tend to concentrate among the same people, and their effects are profound and cumulative (CDPH, 2013; Wilkinson and Marmot, 2003). Racial and ethnic populations in the US experience a disproportionate burden of health inequities (National Expert Panel on Social Determinants of Health Equity, 2009). Even with graduate degrees, African American mothers face a higher risk of having low birth-weight babies than white women who haven't finished school (National Expert Panel on Social Determinants of Health Equity, 2009). Discrimination in access to health care, screening and treatment further contribute to inequities in health outcomes for minority racial and ethnic groups.
4. The longer people live in stressful social and economic circumstances, the greater the psychological wear and tear they suffer, and the less likely they are to enjoy a healthy old age.

Planning Implications and suggested ideas

1. Life contains a series of critical transitions (Wilkinson and Marmot, 2003). Emotional and material changes can affect health by pushing people into a more or less advantaged path (Wilkinson and Marmot, 2003). Because people who have been disadvantaged in the past are at the greatest risk in each subsequent transition, planners need to create safety nets and springboards to offset earlier disadvantage.
2. Contribute to building grassroots power by mobilizing residents to address root causes of health inequities. Find and foster strong community leaders. Identify a champion to raise the visibility of the issue of health inequities and the potential for planners to help advance solutions in partnership with local leaders (Schaff et al., 2013).
3. Acknowledge racism. Committing to addressing the root causes of health inequities is essential for establishing trust with community groups and helping other institutions focus on equity across sectors.
4. Engage staff from local health departments to ensure community priorities are linked to public health programs and services. Additionally, they can institutionalize local policy efforts for health equity rather than creating an isolated policy initiative.
5. Partner with community organizations. Local advocates and community organizations can help determine policy priorities and activities. Being responsive to these partners demonstrates commitment to supporting their work, builds trust across sectors, and ensures that the work is grounded in the experiences and perspectives of local organizations and leaders. Additionally, flexible commitment structures increase long-term engagement and sustainability.
6. Planners can develop and nurture citizen planner academies as a way to increase understanding of the intersection of planning and health. This approach may also lead to increase participation of diverse community members at city hall.
7. Planners can encourage the creation of entrepreneurial incubators which can connect community members with opportunities for small business developments that may not require having an education beyond high school.
8. Planners need the help of others to understand these complex issues and their intersections with land use, zoning and community development. A partnership with Public Health, Transportation, Community Development, Law Enforcement, Schools and Sustainability are essential to ensure that efforts are appropriate in addressing these social determinants of health in order to improve health outcomes.

Living with Long Term Stress

Stressful circumstances make people feel worried or anxious and unable to cope (Wilkinson and Marmot, 2003). Stress is known to damage health and may lead to premature death.

What is known	Planning Implications
1. Social and psychological circumstances can cause or exacerbate long-term stress. 2. Long periods of insecurity and lack of supportive relationships are damaging and become more common on lower rungs of the social hierarchy. 3. Continuing anxiety, insecurity, low self-esteem, social isolation, and lack of control over work and home life, can have powerful effects on health (Wilkinson and Marmot, 2003). They increase the risk of poor mental and physical health and premature death (Wilkinson and Marmot, 2003). Physical health is affected when hormonal and nervous systems sense an emergency and prepare individuals for physical flight or fight (Wilkinson and Marmot, 2003). Turning on these stress responses, affects cardiovascular and immune systems (Wilkinson and Marmot, 2003). This matters most when stress is frequent or long-term (Wilkinson and Marmot, 2003). Over the long term, individuals become vulnerable to a wide range of conditions including obesity, infections, diabetes, high blood pressure, heart disease, stroke, depression and aggression.	1. Although healthcare services can treat biological and psychological stress responses, attention must be focused upstream to reduce the major causes of stress. 2. In schools, workplaces and other institutions, the physical and social environment and material security are important to health. Institutions that give people a sense of belonging, participating and being valued, tend to be healthier places than those where people experience being excluded, disregarded, and used (Wilkinson and Marmot, 2003). 3. Planners can recognize that community-based programs need to address both psychosocial and material needs. In particular, programs and services can support families with young children by encouraging community activity, education and rehabilitation to promote healthy coping skills and combat social isolation, and material and financial insecurity (Wilkinson and Marmot, 2003). 4. Urban design and place-making may be some of the most influential planning areas that can help alleviate community stress. Accessible community oriented nodes that include well-designed and functional amenities, open spaces, playgrounds plazas and green areas can help mitigate isolation by increasing a sense of place and belonging. Special consideration of design is critical in directing human behavior.

Early life

The foundations of adult health are laid down in early childhood and before birth (Wilkinson and Marmot, 2003). Support for young children and their families create an impact on health that lasts a lifetime.

What is known	Planning Implications
1. High risk among children is significantly related to poor socioeconomic circumstances, and can best be reduced through improved preventive healthcare (before pregnancy, during pregnancy, and early childhood) and education levels of adults and children. 2. Good education can increase parents' awareness of their children's' needs, their receptivity to information about health and development, and their confidence in their own effectiveness (Wilkinson and Marmot, 2003). 3. Poor circumstances during pregnancy and early childhood development are associated with deficiencies in nutrition, insufficient exercise, inadequate healthcare, maternal stress, a greater likelihood of maternal smoking and misuse of drugs and alcohol (Wilkinson and Marmot, 2003). These factors are associated with slow growth, insecure emotional attachment, poor stimulation, and poor emotional support (Wilkinson and Marmot, 2003). They can lead to reduced readiness for school, low educational attainment, problem behavior, and the risk of social marginalization in adolescence and adulthood (Wilkinson and Marmot, 2003). They raise the lifetime risk of poor physical health and reduced physical, cognitive and emotional functioning in adulthood (Wilkinson and Marmot, 2003). 4. Good health habits (e.g., healthy eating and exercise) are associated with good parental and peer group experiences, good education, and protection from chronic illness.	1. The health of children and their families can be improved in the long run by increasing general levels of education and providing good access to preventative healthcare (Wilkinson and Marmot, 2003). 2. Support healthy parent-child interactions through home visiting, preventing child abuse, encouraging good parent-teacher relations within schools, increasing parental knowledge of children's emotional and cognitive needs, and stimulating prosocial cognitive development and social behavior in children (Wilkinson and Marmot, 2003). 3. Ensure good access to healthy food and adequate social and economic resources for young mothers and babies to reduce the risk of disease and malnutrition. 4. Planners can ensure that considerations for breastfeeding spaces and childcare centers are provided as part of the development processes for job centers. 5. Planners should visit early education schools to introduce the future generations and their families to introduce them to planning is and how it this profession helps communities to improve quality of life. 6. Planners can support accessibility to these programs by allowing for appropriate land uses and zoning, that enable these programs to locate in neighborhoods and close to those needing services.

Living conditions: Physical Environment: Housing, Transportation, Land Use and Air Quality

Housing

1. To foster greater health equity, we must address underlying policies that shape community conditions and opportunities for good health.
2. Use tools such as health impact assessments to ensure a focus on health equity. The creation and ongoing application of tools to analyze policies for health equity impacts ensures resources are appropriately targeted.

What is known	Planning Implications
1. Low-income residents and people of color often face barriers to good health, such as dilapidated housing, poor air quality, underfunded schools, limited access to healthy food and parks, and few economic opportunities. 2. These conditions are linked to higher rates of asthma attacks, obesity, diabetes, heart disease, and mortality. For instance, an African American born in West Oakland, California, can expect to die 15 years earlier than a white child born in the Oakland Hills area of California (Schaff et al., 2013). 3. Discriminatory policies and practices tied to race and socioeconomic status have resulted in disinvestment in low-income communities and communities of color (National Expert Panel on Social Determinants of Health Equity, 2009). For example, redlining, a “practice where banks refused to grant home-purchase loans in certain areas based on their ethnic/racial composition,” prevented people of color from buying homes in certain neighborhoods. This practice limited their ability to accumulate wealth, leading to a reduced tax base and decreased capital investment in critical community infrastructure (e.g., schools, parks, and businesses). Other policies have similarly diverted critical resources away from low-income communities of color (National Expert Panel on Social Determinants of Health Equity, 2009).	1. Strategic Partnerships: Partner with government institutions across sectors to bring a health equity focus to advisory boards such as Transportation Commissions, community and technical advisory working groups, the School District strategic planning task forces, etc. 2. Advocacy: Improving health involves improving housing standards and enabling all citizens to play a full and productive role in the life of their community. It requires reducing the impact and levels of educational failure, exclusion and deprivation, and insecurity and unemployment. 3. The use of Health Impact Assessment may be a useful tool to evaluate the distribution of benefits and detriments as a result of proposed housing developments. 4. Planners should be well versed on the implication of historical “redlining” practices in order to effectively dismantle existing remnants in housing polices and practices. 5. Social capital can be built in vulnerable communities by empowering residents to act in partnership with city and county governments and community-based organizations to improve their neighborhood conditions (walkability, complete streets, 6. Decisions and plans made by the transportation, land use, and community design sector can affect whether communities and streets are designed to support walking. This sector can change the design of communities and streets through roadway design standards, zoning regulations, and building codes76 and improve the pedestrian experience through landscaping, street furniture, and building design.85 This sector is also integral in the planning and implementation of public transit systems.

Transport

Healthy transport means less driving and more walking and cycling, backed up by better public transport (Wilkinson and Marmot, 2003).

What is known	Planning Implications
1. Cycling, walking and public transport promote health by providing exercise, reducing fatal accidents, increasing social contact, and reducing air pollution (Wilkinson and Marmot, 2003). Regular exercise promotes a sense of wellbeing and protects against heart disease, limits obesity, diabetes, and depression (Wilkinson and Marmot, 2003). Cycling, walking and public transit also increase the level of social interaction on the streets (Wilkinson and Marmot, 2003). Reducing road traffic decreases harmful pollution and reduces motor vehicle-related injuries and deaths (Wilkinson and Marmot, 2003). 2. Well planned urban environments which separate cyclists and pedestrians from car traffic increase the safety of cycling and walking (Wilkinson and Marmot, 2003). Transport policy plays a key role in reducing sedentary patterns by reducing reliance on cars, increasing walking and cycling, and expanding public transport. 3. Roads divide communities and one side of a street from another; with fewer pedestrians, streets cease to be social spaces and pedestrians may become isolated and face increased risk of attack (Wilkinson and Marmot, 2003). Furthermore, suburbs that depend on cars can isolate people without cars, especially the young and old. Social isolation and lack of community interaction are strongly associated with poorer health (Wilkinson and Marmot, 2003).	1. Nationwide and local efforts to promote public transportation, cycling and walking can reduce people's dependence on cars and counter the negative health effects associated with dependence on private cars for transportation (Wilkinson and Marmot, 2003). 2. Public transportation should be improved for longer journeys with regular and frequent connections for suburban and rural areas (Wilkinson and Marmot, 2003). 3. Changes in land use are needed such as converting roads to green spaces, dedicating roads for the use of pedestrians and cyclists, increasing bus and cycle lanes, and stemming the growth of out-of-town suburbs and supermarkets (Wilkinson and Marmot, 2003). Roads can give preference to cycling and walking in smaller towns. 4. Planners should fully understand the negative impacts on health as a result placing greater focus on moving cars. Planners should approach development review from a multi-model mobility perspective that takes into consideration how people move and how far they have to travel to access opportunities and services.

Land Use

The way land is used can impact health determinants and health outcomes.

What is known	Planning Implications
1. The physical design and social and business structures of neighborhoods determine some health pathways. Our choices are often limited by our environments. For example, where there is a high concentration of "unhealthy" goods and services, such as liquor stores and fast food restaurants, people's health behaviors and perceptions about the neighborhood are shaped accordingly (ACPHD, 2008). Similarly, the locating of pollution-releasing facilities (diesel bus depots, hazardous waste sites) in residential areas reveals land use decisions that disproportionately burden low-income communities with an excess of air toxics that, in turn, result in serious health problems. 2. Decisions about land-use planning and regulation are often made without specific review or discussion of the potential health consequences (Salkin and Ko, 2011). For example, public health professionals assert that development that does not enable physical activity (no sidewalks, dangerous intersections, poorly lighted areas), access to healthy food (no grocery stores, farmers' markets, or other convenient opportunities to obtain fresh food), or provide for clean air and water can reduce positive health outcomes and lead to increases in obesity, heart disease, asthma, and other preventable illnesses (Salkin and Ko, 2011). 3. Residential segregation is the spatial stratification of neighborhoods resulting in economic, educational, housing and other policies and practices that unfairly disadvantage many racial and ethnic groups (National Expert Panel on Social Determinants of Health Equity, 2009). Despite the passage of civil rights legislation, segregation continues to be a problem. Major disasters such as Hurricane Katrina revealed the plight of marginalized communities and showed how systemic poverty exposes large populations to danger during disasters (National Expert Panel on Social Determinants of Health Equity, 2009).	1. Engage communities in decision-making about locally wanted and unwanted land use. 2. One tool planners can use to inform community decisions about the health implications of development policies or proposals is the Health Impact Assessment (HIA). [1]The goal of HIA is to apply available research about health impacts to specific land-use questions to develop evidence-based recommendations to inform decision-making (Salkin and Ko, 2011). HIA is a practical, typically six-step process or procedure that is used to judge the potential health effects of a policy or project on a given population, with the aim of maximizing the proposal's positive health effects. Specifically, HIA can convert public health data into practical information that is useful to a decision maker in planning a new program or policy. HIA systematically evaluate the potential impact of a policy, program, or project on the health of a population and the distribution of those effects within the population, and therefore can be a valuable tool in land use planning. Information obtained from an HIA regarding land use decisions can be used to predict health outcomes based on quantitative and qualitative data and scientific findings. 3. Good housing, health-conscious zoning, landscaping/urban greening that incorporates tree canopy, form base codes and strong crime prevention can make communities healthier and safer. 4. A broad range of policies can shape much better community conditions. Access to health care, reliable and affordable transportation, social supports and a fair criminal justice system will help buffer the impacts of living in poorer neighborhoods. 5. 5. Adoption of Healthy City Resolutions, Health Elements into General Plans, incorporating Active Design into Design Guidelines can advance achieving positive health outcomes at the neighborhood and community levels.

[1] Salkin and Ko (2011). The Effective Use of Health Impact Assessment (HIA) in Land-Use Decision Making, Zoning Practice, October 2011. http://www.healthimpactproject.org/resources/document/Salkin-201_Effective-Use-of-HIA-in-Land-Use.pdf

Air Quality

1. Almost 160 million persons live in areas of the United States that exceed federal health-based air pollution standards (Laumbach, 2010). The two air pollutants that most commonly exceed standards are ozone and particulate matter.
2. Protecting health and the environment are essential for sustainable development in any modern society.

What is known	Planning Implications
1. Ozone and particulate matter can harm anyone if levels are sufficiently elevated, but health risk from air pollution is greatest among vulnerable populations (Laumbach, 2010). 2. Children, older adults, and other vulnerable persons appear to be more sensitive to lower levels of air pollution (Laumbach, 2010). Sensitivity to ozone pollution is strongly associated with unemployment or lower occupational status (Bel, Zanobetti and Dominici, 2014). 3. Both ozone and particulate matter can cause pulmonary inflammation, decreased lung function, and exacerbation of asthma and chronic obstructive pulmonary disease (Laumbach, 2010; Sousa, Alvim-Ferraz and Martins, 2013). Particulate matter is also strongly associated with increased cardiovascular morbidity and mortality. Studies have linked air pollution with the incidence of acute coronary artery events and cardiovascular mortality (Teng, Williams, Bremner, Tohira, Jacobs and Finn, 2014).	1. Persons who are aware of local air pollution levels, reported daily by the U.S. Environmental Protection Agency as the Air Quality Index, can take action to reduce exposure; these actions include measures to limit exertion and time spent outdoors when air pollution levels are highest, and to reduce the infiltration of outdoor air pollutants into indoor spaces. 2. Planners can reduce exposure to diesel particulates by eliminating diesel trucks in residential neighborhoods; enforcing the no-idling law near schools, requiring the use of clean technology in new ships and trucks; reducing emissions in existing fleets; and implementing existing state and federal emissions reductions regulations. 3. Study the impact of trucking and shipping operations on low-income and vulnerable populations. 4. Incorporate public health input on air pollution impacts in local land use planning and development decisions.[2] 5. Environmental Impact reports should include full analysis of the correlation of air pollution and respiratory related diseases. This area of analysis should be done in collaboration with local public health departments. 6. While advocating for walking, biking and transit use is the most desired approach to improving air quality, we recognize that many people will not give up their cars. Planners can improve air quality by incentivizing zero emission vehicles/electric vehicle use by providing parking reductions for plug-in electric vehicle charging stations.

[2] Life and Death from Unnatural Causes, Health and Social Inequity In Alameda County, Alameda County Public Health Department, 2008.

Economic & Work Environment

Work and Unemployment

Job security increases health, wellbeing, and job satisfaction (Wilkinson and Marmot, 2003). Workplace stress increases the risk of disease. People who have more control over their work have better health (Wilkinson and Marmot, 2003). Higher rates of unemployment cause more illness and premature death.

What is known	Policy and Planning Implications
1. Typically, having a job is better for health than having no job; job insecurity increases anxiety and depression, and heart disease risk (Wilkinson and Marmot, 2003). Very unsatisfactory or insecure jobs can be as harmful as unemployment. It is now known that health effects begin when people feel their jobs are threatened, long before they become unemployed (Wilkinson and Marmot, 2003). 2. Work environments, social relations at work, and management styles all contribute to stress and social status differences in health, illness, and premature death (Wilkinson and Marmot, 2003). Health suffers when people have little opportunity to use their skills and have low decision-making authority (Wilkinson and Marmot, 2003). Jobs with high demands and low levels of control over work are most strongly related to illness and absence from work. In addition, receiving inadequate rewards for work input is associated with cardiovascular risk (Wilkinson and Marmot, 2003). 3. Social supports at work appear to offer protection from workplace stress. 4. Unemployment puts health at risk; after allowing for other factors, unemployed people and their families suffers a substantially increased risk of premature death (Wilkinson and Marmot, 2003). The health effects of unemployment are related to psychological and financial consequences, especially debt.	1. Improved work hours and conditions at work lead to a healthier workforce, leading to improved productivity, and opportunities to create a healthier workplace. 2. Appropriate involvement in decision-making benefits employees at all levels of an organization (Wilkinson and Marmot, 2003). Thus involving employees in the design of their work and their environment, increases employee control and has the potential to improve job satisfaction, income, self-esteem, and overall health. 3. Workplace health and safety protections should also include workplace health services with appropriately trained providers and appropriate interventions. 4. Access to credit unions and banks may be beneficial for reducing debt. 5. Planners should think about the potential for short term and long term employment opportunities for their own community members as part of entitlement processes. 6. Planners should be involved in diversifying the local economy. As such, they can ensure that in the event that a main industry collapses, opportunities for community members to enter a variety of lines of work and new job training programs are available. 7. In many communities small business accounts for the largest sector of jobs. Planners need to give consideration to preserving these small community businesses, which employ local residents.

Poverty and Income Inequality

People who live with poverty have disproportionately worse health outcomes than other Americans. Childhood poverty can negatively impact health across the life course and possibly affect future generations by disrupting neurocognitive and biological mechanisms needed for achievement.

What is known	Planning Implications
1. Poverty[3] denies people access to good housing, education, transport and other factors vital to full participation in life (Wilkinson and Marmot, 2003).In recent years, income disparities reached levels that were last seen during the Great depression (National Expert Panel on Social Determinants of Health Equity, 2009). 2. As the income gap has grown between those who are wealthy and those who are poor, so has the gap in life expectancies. People in the highest socioeconomic groups can expect to live 4.5 years longer than those in the lowest socioeconomic groups (National Expert Panel on Social Determinants of Health Equity, 2009). Poverty and deprivation have a major impact on health and premature death (Wilkinson and Marmot, 2003). The stresses of living in poverty are particularly harmful during infancy, pregnancy, childhood and old age (Wilkinson and Marmot, 2003). 3. Health can be compromised by living in neighborhoods blighted by concentrations of deprivation, high unemployment, poor quality housing, limited access to services, and a poor quality environment (Wilkinson and Marmot, 2003). The greater the length of time that people live in disadvantaged circumstances, the more likely they are to suffer from health problems like cardiovascular disease (Wilkinson and Marmot, 2003). Poverty and social exclusion increase the risks of divorce, illness and disability, and social isolation. 4. The chances of living in poverty are heavily weighted for some social groups (Wilkinson and Marmot, 2003). Those most at risk include the unemployed, ethnic minority groups, refugees and homeless people (Wilkinson and Marmot, 2003).	1. Public health policies can remove barriers to health care, social services and affordable housing. Labor market, education and social policies and legislation offer some protection from discrimination, social stratification, and poverty (e.g., through minimum wage guarantees). 2. Social capital can be built in vulnerable communities by empowering residents to act in partnership with city and county governments and community-based organizations to improve their neighborhood conditions (Alameda County Public Health Department, 2008). 3. Neighborhood-level strategies can address unfavorable social conditions, and increase protective and resiliency factors (Alameda County Public Health Department, 2008). 4. Planners can modify land use and zoning barriers that may be preventing disadvantaged neighborhoods to flourish. 5. Improving quality of life in disadvantaged neighborhoods and communities should be one of the top priorities for planners, planning commissioners and elected officials. 6. Access, or lack thereof, to transit and transportation options is often one of the greatest contributors to residents remaining in poverty. Inability to access education, jobs and healthcare contributes to poverty and income inequality.

[3] Absolute poverty is the lack of the basic material necessities of life. Relative poverty is defined as living with 60% of the national median income.

Social Environment: Social Exclusion, Social Cohesion, and Support

Social Exclusion, Social Cohesion, and Support

1. Social exclusion and discrimination cause hardship, resentment, and premature death. Reducing social and economic inequality and social exclusion can lead to greater social cohesion and better health.
2. Social cohesion is defined as the quality of social relationships and the existence of trust, mutual obligations and respect in communities and wider society (Wilkinson and Marmot, 2003). Friendships, good social relations and strong supportive networks improve health at home, work and in the community.

What is known	Planning Implications
1. Social exclusion results from processes like racism, discrimination, prejudice, hostility, and stigma which prevent people from participating in education and training, and gaining access to employment, housing, services and social activities (Wilkinson and Marmot, 2003). 2. Being excluded from the life of society and treated as less than equal leads to worse health and greater risk of premature death (Wilkinson and Marmot, 2003). Social isolation and exclusion are associated with increased rates of premature death. They are socially and psychologically damaging, materially costly, and harmful to health. People who receive less social and emotional support are more likely to experience less wellbeing, more depression, greater risk of pregnancy complications, and high levels of disability from chronic diseases (Wilkinson and Marmot, 2003). People who live in (or have left) prisons and psychiatric hospitals are particularly vulnerable. 3. Social support and good social relations are strong contributors to health. Good social relations can reduce physiological responses to stress, improve recovery from disease, and pregnancy outcomes in vulnerable women (Wilkinson and Marmot, 2003). 4. Social support gives people the emotional and practical resources they need; belonging to a social network makes people feel cared for, loved, esteemed and valued, and encourages healthy behavior (Wilkinson and Marmot, 2003). This has a powerful effect on health. 5. Access to social support varies by social and economic status (Wilkinson and Marmot, 2003). Social isolation and exclusion are exacerbated by poverty. 6. Whereas high levels of mutual support increases trust and protects health, social and income inequality breaks down social cohesion and good social relations (Wilkinson and Marmot, 2003). 7. Communities with high levels of income inequality tend to have less social cohesion and more violent crime and disease (Wilkinson and Marmot, 2003).	1. Interventions to reduce poverty and social exclusion are needed at both the neighborhood and individual levels. The social fabric of neighborhoods needs to be strengthened. Residents need to be connected and supported and feel that they hold power to improve the safety and well-being of their families. All residents need to have a sense of belonging, dignity and hope. 2. Strengthen community capacity building efforts using a place-based approach (Alameda County Public Health Department, 2008; Schaff et al., 2013). 3. Improving the social environment in schools, the workplace and communities helps people to feel valued and supported in multiple areas of their life and contributes to health, especially their mental health (Wilkinson and Marmot, 2003). 4. Designing facilities to encourage meetings and social interaction in communities can improve safety, communication and mental health, and add to vibrancy of public areas. 5. Urban Design and place-making are tools available to planners to enhance social cohesions. 6. Planners should have above-average cultural-competency skills. As such, they can better discern the complexities and the value of community needs and wants.

Risk Behaviors

Violence and Safety

What is known	Planning Implications
1. Violence and safety affect everyone's health, not just perpetrators and victims of violence. 2. In addition to contributing to death and disability, violence exacerbates various chronic diseases by inducing chronic stress and fear, which in turn evokes unhealthy physical responses (e.g. high blood pressure), confines residents to their homes and eliminates the health benefits of walking or bicycling to jobs, stores, and services. 3. Residents in high crime areas mistrust neighbors and public institutions leading to further social disintegration, which perpetuates further violence and stifles economic development. 4. Poverty and educational attainment are significantly associated with violence. Victims with low educational attainment or who live in high poverty neighborhoods, commonly account for fatal intentional injuries, one of the highest among causes of death.	1. Upstream policies and programs that influence poverty, educational attainment and others can also in turn, reduce violent crime. Local and state health departments are adopting upstream health policies and programs to approach public health issues, particularly those that are considered social determinants of health.[4] 2. Traditionally, health and law enforcement institutions have acted independently in their responses to violent crime despite the interconnectedness of its causes and consequences. Partnerships between public health essential services and community stakeholders can integrate these historically separate downstream and upstream services into a holistic approach to prevent violence. [5] Planners should be involved as a thinking partner to explore how existing planning policies can actually alleviate crime rates and violence occurrences. Many Planning Departments incorporate Crime Prevention Through Environmental Design (CPTED) principals into their policies. 3. Establish partnerships between health departments and local law enforcement departments so that local data about violence, health, and contributing social and environmental factors can be shared and analyzed. Cross-sector expertise can then be shared to identify or design appropriate services, infrastructure and interventions to prevent violence.

Addiction

The use of alcohol, tobacco and drugs is influenced by the wider social setting in which people live, work and play. Addictive substances are often a response to social breakdown and an important factor in worsening health inequities (Wilkinson and Marmot, 2003).

What is known	Planning Implications
1. Alcohol dependence, illicit drug use and cigarette smoking are all markers of social and economic disadvantage (Wilkinson and Marmot, 2003). Often used to numb the pain of harsh socioeconomic conditions, addictive substances may offer users the illusion of an escape from adversity, but dependence can lead to downward social mobility (Wilkinson and Marmot, 2003). 2. The impact on health is profound. 3. Social deprivation - whether measured by poor housing, low income, lone parenthood, unemployment, or homelessness - is associated with high rates of smoking and low rates of quitting (Wilkinson and Marmot, 2003). Smoking constitutes a drain on personal income and is a significant cause of ill health and premature mortality. 4. The use of addictive substances is fostered by aggressive marketing and promotion by transnational corporations and organized crime (Wilkinson and Marmot, 2003). Their activities are a major barrier to efforts to reduce use, especially in the case of tobacco.	1. Dealing with problems of addiction is a societal issue. Treatment and policy interventions will only succeed if we address the complex social and economic circumstances that foster addictions (Wilkinson and Marmot, 2003). 2. Managing legal alcohol and drug use requires support for people who have developed addictive patterns (Wilkinson and Marmot, 2003). But shifting responsibility to the end user is ineffective (Wilkinson and Marmot, 2003). It requires that we address the patterns of social deprivation in which addictions are deeply rooted (Wilkinson and Marmot, 2003). 3. Interventions are needed that reduce the availability of addictive products and the recruitment of young people for marketing and promotion. 4. Land use regulations and zoning may be a useful tool to reduce substance abuse at the neighborhood level. The long term addiction prospect may be more detrimental to community heath than short term economic benefits as a result of granting occupancy permits to an operation that legally sells addictive substances.

[4] Applying **Social Determinants of Health: Indicator Data** for Advancing Health Equity (Bay Area Regional Health Inequities Initiative. Unpublished; Available at: http://barhii.org/resources/downloads/sdoh_indicator_guide_sample.pdf; Accessed August 1, 2014).
[5] Application of **Uniform Crime Reports** and local public safety indicators to reduce crime and promote physical activity

Food

What is known	Planning Implications
1. Good diet and adequate food supply are central for health and wellbeing (Wilkinson and Marmot, 2003). Food shortages and lack of variety cause malnutrition and deficiency diseases; excess intake contributes to obesity, diabetes, cardiovascular and other chronic diseases (Wilkinson and Marmot, 2003). 2. People's food choices are determined more by the availability, cost and nutritious quality of food than by health education (Wilkinson and Marmot, 2003). 3. Social and economic conditions result in a social gradient in diet quality that contributes to health inequalities (Wilkinson and Marmot, 2003). Poor people tend to substituted cheaper processed foods for fresh foods (Wilkinson and Marmot, 2003). People on low incomes (e.g., young families, elderly people, and the unemployed) are least likely to eat well.	1. Government agencies, nonprofit organizations and food organizations can ensure a. support for and access to sustainable and local food production and distribution; b. a stronger culture of food health, especially for school-aged children, to foster the value of preparing food and eating together; instead of the proliferation of processed or fast food (Wilkinson and Marmot, 2003); c. the integration of public health perspectives in the food system to provide affordable nutritious food for all, especially the most vulnerable; d. Democratic decision-making and accountability in food regulation. 2. Land use and zoning regulations may assist communities in the development of locally grown food production and distribution systems. a. support for use of organic waste in composting and bio-fuel production provides multiple benefits including new local business and jobs while improving air quality.