

Building a Healthier Coachella Valley: A Toolkit for Change

Prepared for

The Coachella Valley Association of Governments

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I. An Introduction to Planning and Public Health

Modern American city planning and zoning is rooted in concerns with public health, specifically in the crises that arose from rapid industrialization and urbanization in the late 19th and early 20th century – overcrowding and the proximity of industrial pollution to housing. However, most mid-to-late 20th century planning has strayed from an explicit desire to protect the public’s health and has focused instead on how to accommodate rapid population growth and the desire for unlimited personal mobility through driving. The Coachella Valley is no exception. Recently, planners and public health officials have begun once again to understand the connections between their fields, and there is a growing consensus that these conventional suburban development patterns can negatively impact public health.

Like many other inland California communities, the Coachella Valley’s population is growing rapidly and has been doing so for decades. Agricultural land and open space is being developed as residential subdivisions, shopping centers and golf courses. Traffic congestion is increasing, and housing is becoming less and less affordable. These issues are familiar to all planners in California.

Concurrently, the Valley and the larger Riverside County area face many challenging public health and environmental realities. Riverside County is the number two county in California for cardiovascular disease and ranks similarly for rates of obesity, traffic injuries and respiratory disease.¹ Twenty eight percent of all Riverside County residents are overweight² and over 377,000 children under 14 have asthma.³ A growing body of research has highlighted the contribution of planning – street design, land use patterns, the density of development – to public health. One of the most important and consistent correlations in the literature is between conventional suburban development – as typified in the Coachella Valley – and high levels of physical inactivity and obesity.

The Coachella Valley Design for Healthy Living Project – supported by the Transportation & Land Use Collaborative of Southern California (TLUC) and the Coachella Valley Association of Governments (CVAG), with the assistance of a grant from the California Department of Transportation – has therefore commissioned this Planning and Public Health Toolkit. It is a collection of planning tools that can increase public health in your community. While some of these tools are suggested solely by public health concerns, most are already used by many planners in pursuit of other agendas – environmental sustainability, improved community life and social functioning, improved aesthetics and smart growth, for example. In other words, many of these seemingly disparate issues have solutions that look very similar. This shows that public health can be improved with the application of existing planning tools and agendas and presents

public health as an additional, highly compelling justification for a smart growth planning framework. The “Toolkit for Change” is preceded by a summary of the connections between planning and public health.

II. The Connection Between Planning and Public Health

The general consensus within urban planning and public health literature is that the way cities are planned impacts public health outcomes. What follows is a summary of the public health perspective on planning and the planning perspective on public health. One of the most consistent themes in this summary is that higher driving rates are correlated with reduced public health and that walking is associated with improved public health. Thus, the strategies that improve walking and reduce driving have the greatest impact on a wide range of health outcomes. This summary is the result of a broader body of research, available at the end of this document as Appendices A and B.

THE PUBLIC HEALTH PERSPECTIVE

The following is a summary of a range of public health outcomes and how planning and the built environment impact these health outcomes.

- **Physical Activity.** Increased physical activity is strongly correlated with reduced overall health health. Levels of physical activity in a community are impacted by a number of factors including the density of development, the mix of uses in an area and the quality of the pedestrian environment. In addition, physical activity is impacted by the availability of parks and recreation facilities..
- **Traffic Injuries and Fatalities.** Traffic accidents kill 40,000 Americans each year and the rates of injuries and fatalities are strongly tied to the design of the transportation system –the road network, the design of the roadway, the design speed of roads, and the presence or absence of safe walking routes. The research has found that design strategies such as traffic calming, narrow roadways, slower roadway design speeds, a dense street network and pedestrian safety features result in improved health outcomes.
- **Respiratory Health.** Chronic lower respiratory diseases are the fourth leading cause of death in the U.S., and they can be triggered or exacerbated by poor air quality. While air quality is a result of numerous factors, on the whole, communities with high rates of driving typically have worse air pollution and higher rates of driving are associated with suburban development patterns.
- **Mental Health.** Stress and depression result from a wide range of physical and psychological conditions but can be exacerbated by pressures of daily life including long commute times, traffic congestion, suburban isolation, or lack of access to green space.

- **Nutrition.** Increasingly poor nutrition among the general population is caused by a number of factors including processed foods and unhealthy eating habits. However, there are numerous factors of the built environment that contribute to poor nutrition including a lack of supermarkets and healthy food options and an over-abundance of fast-food restaurants in some communities.
- **Social Capital.** Social capital is a term used to describe the connectedness and social fabric in a community. Studies have found that lower levels of social capital are found in low density suburban communities where people spend more time driving. Lower levels of social capital have been linked to fewer illnesses, faster recovery from illnesses, longer life, and improved mental health. Thus, there appears to be a relationship between social capital, the pattern of the built environment and health outcomes.

THE PLANNING PERSPECTIVE

The following is a summary of the characteristics of the built environment that have been shown to have positive impacts on health outcomes.

- **Regional Location.** The location of development is an important factor in the generation of automobile trips and air pollution. Developments sited in central cities or existing urbanized areas generate fewer trips and reduced vehicle miles of travel than similar projects located on the fringe of urban areas. This impacts health in a variety of ways including making walking and biking more viable transportation alternatives and reducing driving rates which in turn reduce air pollution.
- **Density and Intensity of Development.** Research shows that increasing the population and employment density has transportation, air quality and traffic safety benefits. Studies show that higher rates of walking and transit use occur in higher density areas and thus result in improved physical activity, lower body masses and lower obesity rates.
- **Land Use Mix.** Areas with a diverse mix of uses are more likely to have higher rates of walking, biking and transit use and lower rates of vehicle travel. This has public health benefits through increased levels of physical activity, lower per-capita air pollution and improved traffic safety. While the exact mix of uses that result in public health benefits is not specifically known, uses including neighborhood retail, restaurants and taverns, grocery stores, civic uses and nearby employment destinations have been shown to result in improved health outcomes.
- **Access to Recreational Facilities.** Increased physical activity is associated with decreases in obesity and other related illnesses. Studies have found that greater access to,

and higher densities of, parks and recreation facilities, result in increased levels of physical activity in a community.

- **Access to Healthy Food Sources.** Studies have found that the availability of healthy food and the restriction of unhealthy food in key locations impacts individual consumption choices and thus health outcomes.
- **Distance from Sources of Air Pollution.** Proximity to mobile, stationary and area sources of air pollution can compromise respiratory health. Thus, locating homes and parks away from sources of emission results in positive health outcomes.
- **Transit Access and Availability.** Locations with high levels of transit service have reduced car ownership rates, fewer vehicle trips and vehicle miles of travel per person and increased rates of walking and biking. Thus, increased transit availability reduces vehicle emissions, and improves opportunities for increased physical activity.
- **Street Connectivity.** Studies have found that neighborhoods with good connectivity offer more route choices and shorter walking, cycling and driving journeys than areas with less connectivity. This results in a higher likelihood of walking and biking, a decrease in the amount of time spent in vehicles and higher levels of physical activity.
- **Pedestrian Environment.** Higher physical activity levels are correlated with comfortable sidewalks, safety from traffic and an aesthetically pleasing walking environment. Thus, designing neighborhoods that encourage walking and bicycling will increase the number of walking and bicycling trips and thereby have health benefits.
- **Bikeability.** Studies have found that access to quality bicycle facilities (such as bike lanes, bike paths, and other features such as safe bicycle storage) is correlated with higher levels of bicycling for recreation and community trips. Higher rates of bicycling improve physical activity, reduce vehicle miles traveled and have health benefits for individuals.

More specific information on the above topics can be found in Appendices A and B at the back of this report.

III. Toolkit for Change

Planners, elected officials, appointed officials and community advocates working together can play a large role in improving the health of Coachella Valley residents.. Planning for a built environment that bolsters public health is particularly important for the Coachella Valley given the rapid pace at which its development is likely to occur. Planners have a large number of tools at their disposal that can be used to improve health outcomes. The tools generally fall into 5 broad categories of action:

1. Build Partnerships

- Establish a working relationship with the Riverside County Public Health Department
- Work with the City Council to pass a “Healthy Cities” resolution
- Create a “healthy city” coalition

2. Analyze Existing Conditions

- Analyze existing health conditions in your City
- Conduct walkability and bikeability audits

3. Revise Comprehensive and Functional Plans

- Update the General Plan to include health considerations
- Use specific plans and areas plans to promote infill development
- Expand the roadway master plan to include multi-modal transportation
- Create a bicycle master plan
- Create a pedestrian master plan
- Create or revise a parks and recreation master plan to include health considerations

4. Review Development Proposals

- Develop Health Impact Assessments (HIAs)
- Promote the use of the LEED-ND rating system
- Create project development review checklists that address health
- Address health in environmental review under the California Environmental Quality Act (CEQA)

5. Revise Standards and Implementation Tools

- Reform the zoning code to encourage mixed use
- Reform parking standards
- Implement a traffic calming program

- Work with school districts on school siting requirements

The remainder of this report presents the tools and strategies in detail.

BUILD PARTNERSHIPS

Establish a Working Relationship with the Riverside County Public Health Department

While a seemingly obvious action, it is critical that local governments in Riverside County establish a working relationship with the County Public Health Department. Over the past several years, the Riverside County Public Health Department (PHD) has evolved into a national leader on how planning impacts the built environment. As a first step in the process, planning staff should meet with the County PHD to understand how the Department can assist cities in advancing public health objectives. The Riverside PHD works with developers to ensure that new communities are built to increase physical activity, and it also conducts walkability audits of existing communities. For more information on the County PHD, visit their web page at <http://www.rivcoph.org/> or <http://www.rivco-buildhealth.org/> or call Sandy Jackson at 951-358-7171 or via email at swales@co.riverside.ca.us.

Working with Elected Officials to Promote Healthy Land Use Planning & Community Design

Forging relationships between health officials and planners is a first step towards creating healthier communities. A second step is motivating local elected officials to promote land use and design that promotes public health.. The National Association of County and City Health Officials (NACCHO) has published a fact sheet that provides guidance for planners and public health officials working together to cultivate the support of elected officials.

The fact sheet can be downloaded at:

<http://www.naccho.org/toolbox/LUP-Working-with-Officials.pdf>

Work with the City Council to pass a “Healthy Cities” Resolution

A “Healthy Cities” resolution is a good first step in incorporating public health into the planning process. It typically states that the Council desires a healthy, active community; shows that there is a relationship between planning decisions and public health outcomes; and requests that the Planning Department work with the Health Department to improve health in the community through changes to the built environment.

Some City Councils in California and in the Coachella Valley have already passed resolutions endorsing the Healthy Cities concept, and are formal participants in the California Healthy Cities and Communities (CHCC) program, (formerly called the California Healthy Cities Project). The CHCC is administered by the Public Health Institute under contract with the California Department of Health Services.⁴ Coachella Valley communities with CHCC programs include Palm Springs and Coachella. Coachella Valley cities that have not joined the program may consider doing so. For more information, please visit the Center for Civic Partnerships' website at http://www.civicpartnerships.org/docs/services/CHCC/program_Info.htm

Create a Healthy City Coalition

Since public health is increasingly inter-disciplinary, some cities have created Healthy Cities coalitions. These coalitions include a broad spectrum of city staff, elected officials and key stakeholders in the community, such as the YMCA, local gyms, hospitals, major employers, and developers. The Coalitions meet regularly and work together to develop an action plan for health in the community. They typically focus on health-related programs – such as public education on healthy food choices, weight loss contests, community walks and health fairs – and identify ways their individual work can synergize to improve public health.

Healthy Chino Coalition

The Healthy Chino Coalition is comprised of community leaders, schools, businesses, churches, service organizations, and concerned individuals, and was formed to combat the epidemic of obesity and diabetes. The Coalition fosters supportive environments, policies, and programs to promote physical activity, wellness and increased knowledge of healthy lifestyles.

The Coalition has adopted a whole-person approach to health by identifying the following five key focus areas:

- Fitness
- Health & Human Services
- Nutrition
- Public Education
- Safe & Walkable Neighborhoods

Programs implemented by the Coalition thus far include the Chino Walks program and a weight-tracking program for City employees.

(text abridged from Healthy Chino website: <http://healthychino.com>)

ANALYZE EXISTING CONDITIONS

Analyze Existing Health Conditions in Your City

As your city begins to delve into the planning/public health discussion, understanding existing public health conditions is a necessary starting point.. In addition to typical land use information, data and statistics on health can come from a variety of sources, including the public health department, the police department, schools and the County Assessor's office. The following list includes some research questions that can be explored in this analysis process, and also mentions where this data can likely be found.

Overall Health of Community

- *Causes of death.* What are the primary causes of death in the city or county? Which ones are related to the built environment?
- *Rates of Obesity/Overweight Residents.* How many adults are overweight or obese? How many youth/children are overweight or obese?

Physical Activity

- *Proximity to parks.* What is the proximity of parks to residential and commercial areas? How accessible are parks? What is the parks-to-people ratio?
- *Access to recreational facilities.* What are the recreational opportunities in the community? Where are they located and are they accessible by transit?
- *Mix of Uses.* What is the mix of land uses? What portion of homes are within walking distance of convenience-oriented retail?
- *Density of Development.* What is the residential density and non-residential intensity in different parts of the city? What density does the current general plan and zoning code allow? Is this high enough to allow for walkable neighborhoods?

Traffic Injuries and Fatalities

- *Traffic Injuries and Fatalities.* How many traffic injuries and fatalities are there per year? Where are the largest number of traffic injuries and fatalities occurring? Percentage of traffic accidents that involved pedestrians or non-motorized vehicles?
- *Mode Split.* What are the rates of driving, walking, biking and transit?
- *Commuting.* What are the average commute times and distances?

- *Transportation Network.* How walkable is the city? What percentage of roads have sidewalks on both sides of the street? What are the average block lengths in different parts of the city? What is the intersection network density or street network density?

Respiratory Health

- *Asthma and other respiratory ailments.* What are the rates of asthma and other respiratory ailments? What is the proximity of neighborhoods, schools and employment centers to roadways and pollution sources? What is the percentage of the population located within 500 feet of major roadways, heavy industrial uses or warehouse/distribution uses?
- *Air Quality/Toxic Contaminants.* What is the quality of air? What are the main toxic contaminants (e.g., particulate matter, sulphur dioxide)? What are the sources of toxic contaminants (e.g., traffic, industry, dry cleaners)? Where are the sources of contaminants located? Where are the contaminants concentrated (e.g., along roadways, downwind of industry)?

Mental Health & Social Capital

- *Mental Health.* What are the rates of depression and other mental illness? How prevalent is road rage?
- *Participation.* What are the voting rates in different neighborhoods? What percentage of the population participates in organized social activities?
- *Community Safety.* Where are pockets of crime? Where are liquor stores or blighted properties?

Nutrition

- *Access to health food.* Where are healthy food stores located? How accessible are they for all populations? (e.g., can residents walk or take transit to the stores?)
- *Number of fast-food restaurants and convenience stores.* What is the Retail Food Environment Index (RFEI) (i.e., total number of fast-food restaurants and convenience stores divided by the total number of supermarkets and produce vendors)?

Information and data to answer the above questions may be obtained from a variety of local, regional, county, state and federal sources:

City and County Sources of Data

- Coachella Valley Association of Governments (www.cvag.org)
- City GIS data

- County Assessor Data (e.g., GIS) (www.tlma.co.riverside.ca.us/gis/index.html)
- Police Departments
- Planning Departments
- Public Works Departments
- Riverside County Department of Public Health (www.rivco-buildhealth.org/)
- Riverside County Transportation Commission (www.rctc.org)
- SunLine Transit Agency (www.sunline.org)
- South Coast Regional Air Quality Management District (www.aqmd.gov)

State Sources of County Level Health Data

- California Health Interview Survey (www.chis.ucla.edu)
- California Department of Health Services (<http://www.calnutritionnetworkgis.org/>)
- The California Nutrition Network mapping application (<http://www.cnngis.org/>)
- California Center for Public Health Advocacy (www.publichealthadvocacy.org)
- Statewide Integrated Traffic Records System (SWITRS) (<http://www.chp.ca.gov/switrs/>).
- California Air Resources Board (<http://www.arb.ca.gov>)
- California Center for Health Statistics (<http://www.dhs.ca.gov/hisp/chs/default.htm>)

National Sources of Community Level Health Data

- American Community Survey (<http://www.census.gov/acs/www/>)
- National Personal Transportation Study (<http://nhts.ornl.gov/>)
- Census 2000 (<http://www.census.gov/>)
- National Center for Health Statistics (<http://www.cdc.gov/nchs/nhis.htm>)

Conduct Walkability and Bikeability Audits

A walkability audit assesses pedestrian facilities, destinations, barriers and surroundings along and near a walking route, and identifies specific improvements that would make the route more attractive and useful to pedestrians. Similarly, a bikeability audit reviews cycling conditions along specified streets to explore road sharing with cars, off-road paths, riding surfaces, intersections, behavior of drivers, end of trip facilities, directional signage, and safety.⁵

Several national and state organizations and cities have developed walkability and bikeability audit tools or checklists. A list of resources can be found in the sidebar. The CDC has also developed a Walkability Audit that can be used to assess walking routes in employment areas. The audit makes it possible to map out the most commonly used walking routes, and identify the most common safety hazards and inconveniences that keep employees from walking at work.⁶ Community groups and cities across the United States have used walkability and bikeability

audits to inform pedestrian and bicycle master plans or take individual actions (e.g., inform city engineering departments about problems).

Walkability and Bikeability Audit Resources

CDC Workplace Walkability Tool:

["http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/walkability/audit_tool.htm"](http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/walkability/audit_tool.htm)

Pedestrian and Bicycle Information Center Walkability and Bikeability Checklists:

<http://www.walkinginfo.org/walkingchecklist.htm>

<http://www.bicyclinginfo.org/cps/checklist.htm>

National Center for Bicycling and Walking, Community Assessment Tool:

http://www.activelivingresources.org/assets/community_assessment_tool.pdf

The Community Health Research Unit's guide, "Active Independent Aging: A Community Guide for Falls Prevention and Active Living," includes a Walkability Checklist that focuses on aging:

<http://www.falls-chutes.com/guide/english/resources/handouts/pdf/WalkabilityChecklist.pdf>

California's Walk to School Program's Walkability Checklist:

<http://www.cawalktoschool.com/checklists.html>

San Francisco Neighborhood Physical Assessment Project Streetscape Survey

http://www.sfdph.org/phes/publications/Transportation/Tr_Neighborhood_Physical_Assessment_Survey.pdf

Shasta Walkability Checklist

<http://www.healthyshasta.org/downloads/WalkabilityChecklist.pdf>

REVISE COMPREHENSIVE AND FUNCTIONAL PLANS

Update the General Plan to Include Health Considerations

The General Plan is the constitution for development and conservation and lays out a broad vision for change in a community. It is the bedrock on which all planning decisions are made; all other functional and sub-area plans and policy decisions must be consistent with the General Plan. Thus, the General Plan provides a tremendous opportunity to address health.

Most General Plans in California do address seismic safety, bicycle and pedestrian issues, air quality, noise, exposure to hazardous materials, and parks and recreational facilities. Even so, public health *per se* is rarely high on the list of issues that a General Plan addresses. Things such

as access to healthy food; community health and physical activity promotion; and the relationship between the built environment and public health are usually absent from conventional General Plans.

Opportunities to incorporate public health into the General Plan process are available at various stages in the process and via several components of the plan itself. These are discussed below. Sample policies and concepts that could be included in the General Plan are presented in Table 1.

- **Public Process.** General Plan updates typically involve an extensive public outreach process. Including health considerations in the discussion will serve to educate both citizens and elected officials.
- **Existing Conditions.** General Plan updates necessitate an extensive analysis of the existing physical and social conditions in the city. During this process, communities can explore key health issues in the city that could be addressed in the General Plan itself.
- **Vision Statement.** The City's commitment to and concern for public health can be included in the vision statement.
- **Land Use Decisions.** In developing the land use designations for the General Plan, the City should consider greater mixing of uses and creating land use designations that go beyond land use to address the form and character of the community. The Land Use Element should also establish policies to target growth to infill locations and preserve open spaces.
- **Multimodal Transportation Solutions.** Transportation solutions developed for the General Plan should include multimodal opportunities, including expanded bicycle, pedestrian and transit opportunities. This Circulation Element is also an opportunity to explore roadway design characteristics and their impact on health outcomes.
- **Public Facilities and Services.** The public facilities and services Element or a similar element can include policies and standards for parks and recreational facilities, school siting, libraries and health clinics.
- **Public Health Element.** Although not a State-mandated Element, cities can create a Public Health Element to formalize their public health policy as it relates to the built environment and provision of services. Topics to include in the Element should reflect the needs and concerns of the individual city and could include nutrition, respiratory health, social capital and mental health. Built environment characteristics such as mixed use development, density, parks and recreational facilities and multimodal transportation may be better located in other elements of the General Plan.

While it is not common, a handful of California cities have directly addressed public health in their General Plans. They are listed below.

- The Draft City of Anderson Health and Safety Element (January 2007) includes policies specifically addressing public health.
- Benicia’s Community Health and Safety Element provide “community health” policies.
- Walnut Creek included “community health” goals, policies and actions in its Quality of Life Element.
- The City of Richmond General Plan, which is currently being updated, will include a Public Health Element.
- The City of Chino is updating its General Plan and will include a public health element.
- Marin County has a draft General Plan that addresses a range of health topics including physical activity, nutrition and drugs, alcohol and tobacco.

Table 1: Sample General Plan Policies and Concepts

General Topic Area	Sample Policy Ideas
Overall community health and active living	<ul style="list-style-type: none"> ❑ Pass a “healthy living” or “healthy city” resolution ❑ Hire a public health coordinator to oversee the city’s health-related activities ❑ Conduct community health assessments ❑ Develop a land development review checklist to ensure projects enhance public health outcomes ❑ Form a public health commission ❑ Monitor health outcomes over time

General Topic Area	Sample Policy Ideas
Land Use	<ul style="list-style-type: none"> ❑ Allow and promote mixed use development ❑ Target growth to infill locations in downtowns and along major transportation corridors, among other locations ❑ Encourage transit-oriented development in all land use designations ❑ Promote neighborhood-serving businesses within walking distances of residential areas ❑ Create growth management policies ❑ Preserve open spaces and agricultural lands ❑ Establish jobs-housing balance targets ❑ Develop urban design policies and standards that create more attractive and walkable communities
Transportation	<ul style="list-style-type: none"> ❑ Refine roadway standards and street networks to support multi-modal transportation ❑ Prioritize the addition of new pedestrian amenities, such as crosswalks and sidewalks, where needed ❑ Establish a traffic calming program ❑ Create or enhance the city’s bicycle network ❑ Analyze unsafe pedestrian areas in the city based on current data, and develop a priority list of physical improvements ❑ Monitor and improve traffic safety and reduce the potential for traffic accidents ❑ Create connectivity standards for new developments ❑ Create TDM (Traffic Demand Management) programs for existing employers in the city and require TDM programs for new employers
Physical Activity	<ul style="list-style-type: none"> ❑ Improve school access through safe routes to school programs, walking school buses, traffic calming, and pedestrian improvements around schools ❑ Create a walkable communities task force dedicated to improving walkability ❑ Create measured walking routes/guides around the city ❑ Create an attractive walking environment

General Topic Area	Sample Policy Ideas
Healthy Eating/Nutrition	<ul style="list-style-type: none"> ❑ Work with the school district to provide healthy food choices within schools and to minimize the sale of carbonated beverages, processed foods, and foods containing partially hydrogenated oils ❑ Develop community gardens throughout the city ❑ Allow the produce-growing parcels within the city ❑ Pursue opportunities for farmers' markets ❑ Prohibit drive-through restaurants, liquor stores or cigarette sales stores within ¼ mile of schools ❑ Modify zoning code to limit fast-food restaurants in specific locations of the city such as near schools ❑ Develop programs to educate and train kids about healthy eating ❑ Work with public health officials to develop an educational campaign around nutrition and physical activity. Activities could include: presentations to school children, health fairs, checklists of healthy and unhealthy foods, etc.
Parks and Recreational Facilities	<ul style="list-style-type: none"> ❑ Locate parks within a ¼ mile walking distance of all new homes ❑ Create a network of multi-use trails across the city ❑ Establish joint use agreements with schools to allow use of park facilities
Schools	<ul style="list-style-type: none"> ❑ Promote walk to school/walking school bus programs ❑ Work with school districts to reduce minimum size requirements for school siting and to locate and design schools to be focal points of community life ❑ Develop joint use agreements with school districts for after-school use of school parks, playing fields and open spaces

General Topic Area	Sample Policy Ideas
Respiratory Health	<ul style="list-style-type: none"> ❑ Prohibit residential development within 500 feet of major freeways and other sources of air pollution ❑ Monitor emissions from commercial and industrial sources to ensure that there are no negative impact on residents ❑ Convert city fleets vehicles to clean burning fuel sources ❑ Refine building codes to improve indoor air quality
Social Capital	<ul style="list-style-type: none"> ❑ Develop public participation and engagement programs to ensure that all residents are part of the community ❑ Establish community services and programs for youth ❑ Facilitate the provision of safe, accessible activities, facilities, and services for the elderly and persons with disabilities
Mental Health	<ul style="list-style-type: none"> ❑ Facilitate the provision of accessible mental health care facilities and services ❑ Reduce driving times to alleviate driving-related stress and road rage ❑ Beautify the city’s public realm by reducing litter; increase green spaces and landscaping; support street and business façade improvements; and incorporate public art ❑ Enhance visual amenities by preserving hills, open spaces, creeks and other landscape features
Access to Quality Health Care	<ul style="list-style-type: none"> ❑ Ensure that all community members have affordable and convenient access to primary, preventative and specialty health and dental care ❑ Increase provider capacity ❑ Increase health insurance options ❑ Enhance access to public benefit programs ❑ Increase awareness of preventative health care ❑ Enhance access to mental health programs ❑ Promote a wide range of health services

General Topic Area	Sample Policy Ideas
Drugs, Alcohol and Tobacco	<ul style="list-style-type: none"> ❑ Adopt and enforce tobacco and control laws ❑ Reduce the number and frequency of outlets that sell tobacco and alcohol ❑ Raise awareness of alcohol and other drug issues ❑ Support substance abuse education ❑ Expand evidence-based prevention and treatment programs ❑ Increase tobacco cessation services ❑ Improve access to treatment services ❑ Zone for alcohol outlets
Crime and Safety	<ul style="list-style-type: none"> ❑ Consider lighting for safety in design review ❑ Promote Crime Prevention Through Environmental Design techniques into urban design projects ❑ Support neighborhood watch or policing programs

Use Specific Plans and Area Plans to Promote Infill Development

Specific plans and area plans are detailed plans for a small portion of the community. These plans can be used to either encourage the redevelopment of existing areas of the city or to plan undeveloped areas. Specific plans provide an opportunity to address public health because they establish the land use mix, intensity of development, the lay out of the street network and the location of community facilities, as well as guidelines for street and streetscape design.

A creative and innovative specific plan can develop a community “sense of place,” improve walkability, and bridge the gap between monotonous urban development and a livable neighborhood.⁷ So long as they are consistent with the general plan, specific plans allow for considerable flexibility in being tailored to a specific area,. A specific plan can either replace a City’s zoning ordinance and design guidelines or enhance existing regulations.

Expand the Roadway Master Plan to Include Multi-modal Transportation

The design of the transportation system plays an important role in how we choose to get around and therefore in the amount of physical activity we get on a day-to-day basis. The key policy document for cities regarding transportation is the Roadway Master Plan. Too often, the Roadway Master Plan is only about moving cars and pays little attention to the needs of other users. Further, the roadway standards in the master plan often prescribe the construction of

roadways that support driving to the detriment of other users such as pedestrians, cyclists and transit vehicles.

Roadway master plans present an opportunity to shift the focus away from efficient vehicular movement towards smart growth, livable communities and integrated multi-modal transportation planning. Considerations towards this end include the following:

- **Include Context Sensitive Street Design Standards.** Context Sensitive Street Design (CSSD) is an approach to roadway planning, design and street operation, that is designed to meet regional transportation goals (such as the movement of traffic) while also respecting and enhancing neighborhood quality. CSSD respects traditional street design objectives for safety, efficiency, capacity, and maintenance, while integrating community objectives and values relating to land use compatibility, livability, sense of place, urban design, cost and environmental impacts.
- **LOS standards.** LOS (Level of Service) standards typically seek to maintain traffic flow as their highest priority. This often comes at the expense of walkability. Cities should be aware of how “improved” LOS – widened streets, added driving lanes, dedicated turn lanes, retimed traffic signals⁸ and CEQA mitigations requiring traffic “improvements” – can be detrimental to pedestrians. LOS design standards that value walk- and bikeability can contribute to public mobility and health.
- **Network and connectivity standards.** Low street connectivity leads to traffic bottlenecks and congestion, and discourages walking. Establishing standards for better connectivity can improve walkability and encourage pedestrian activity.
- **Narrow streets.** Street standards have often made streets wider than necessary, in the interest of accommodating large trucks and emergency vehicles. Wider streets encourage faster driving speeds and result in higher rates of serious injury or fatality when crashes occur. Conversely, narrower streets enhance walkability, reduce traffic speeds and reduce the severity of crashes when they occur. Existing wide streets can be narrowed through building medians, widening sidewalks and adding on-street parking, curb bulb-outs, tree planters, chicanes or bike lanes.
- **Multimodal streets (or complete streets).** This method of street design provides facilities for all users – cars, trucks, bicycles, transit and pedestrian. The extent to which each mode is emphasized can vary from street to street (and along a corridor) but all should include safe facilities for a variety of modes. And all should, at a minimum, include safe pedestrian facilities such as sidewalks separated from the street and safe pedestrian crossings.

Create a Bicycle Master Plan

Bicycling can be both a recreational activity and a safe and non-polluting transportation option. Bicycling works best in a compact built environment with good bicycle facilities. One way to encourage this is by creating a bicycle master plan. Bicycle master plans set out a framework for a bicycle-friendly environment. The plan normally surveys existing conditions, analyzes needs and opportunities, proposes bike routes and improvements, and suggests an implementation strategy.

Bicycle master plans propose concrete changes in the built environment that can encourage cycling and thus have public health benefits. Examples of concepts that could be included in bicycle master plans include:

- Creating a network of bicycle facilities throughout the city that link key destinations. Examples of bicycle facilities include multi-use trails, bicycle lanes on roadways or bicycle boulevards. Bicycle boulevards are roadways that prioritize bikes through signage, traffic controls and street design.
- Promoting compact land uses that enhance public spaces and neighborhood commercial districts
- Working with neighboring cities to connect bicycle networks between jurisdictions
- Cycling and walking events and activities, particularly on trails and cycling routes.
- Cycling commute campaigns. These often involve contests as to which workers and worksites commute most by non-motorized modes.
- Bicycle parking and clothes changing facilities at worksites, transportation terminals and other destinations.
- Education programs that teach cycling skills.
- Safe bicycle parking throughout the city and in particular at key destinations such as retail areas, parks and schools.

Create a Pedestrian Master Plan

Our health is undeniably linked to the amount of physical activity we get, either recreationally or in carrying out our daily activities. Having a safe, aesthetically-pleasing and comfortable pedestrian environment that links key destinations is key to encouraging people to walk. Acknowledging this, hundreds of communities in North America have developed pedestrian master plans. Generally, pedestrian master plans provide a comprehensive framework for identifying pedestrian needs and deficiencies, examining potential improvements and prioritizing

implementation strategies. They are often coupled with bicycle master plans. Pedestrian master plans can be developed for an entire city or for a specific area, such as a downtown.

The goals of individual pedestrian master plans vary by jurisdiction and may include:

- Improving pedestrian safety and access by minimizing exposure to collisions by reducing motor vehicle use, minimizing consequences of collisions by reducing vehicle speeds in key pedestrian areas, and minimizing accident risk at busy intersection and along busy corridors
- Providing new or improved pedestrian amenities/streetscaping
- Improving the pedestrian environment for children, seniors and people with disabilities
- Promoting land uses that enhance public spaces and neighborhood commercial districts
- Educating citizens about the health benefits of walking, collision reduction, walking programs, or other related topics

Pedestrian Master Plan Best Practices

The Sacramento Transportation and Air Quality Collaborative produced a manual entitled *Best Practices for Pedestrian Master Planning and Design*, which can be used as a guide for developing a pedestrian master plan.

The manual can be downloaded from the Collaborative's website:
www.sactaqc.org/Resources/Agreements/PedPlanningDesign.pdf.

Create or Revise a Parks and Recreation Master Plan to Include Health Considerations

Access to parks and recreational facilities relates to physical activity levels, and by extension, public health problems including obesity, heart disease, and diabetes. "Access" refers to the location of parks and recreational facilities relative to residences and workplaces as well as facility cost, accessibility for people with special needs and location relative to public transportation.

Parks and recreation master plans can help achieve positive public health outcomes by eliminating disparities in access to facilities, improving the quality and safety of facilities, and expanding programs. Parks and recreation master plans typically analyze existing park and recreation properties, programs and services, and recommend expansion or improvement opportunities. Additionally, they can provide design guidelines and development standards for parks and trails.

Though each city needs to tailor its parks and recreation master plan to the community's specific needs, some general considerations when developing a parks and recreation master plan include the following:

- Create neighborhood parks to provide space for physical activity and green space within a close distance of residences. Ideally each home should be located within a ¼ mile walking distance of a park.
- Promote joint use of public facilities for physical activity. Work with other public agencies to open up their properties to the public for use for physical activity. For example, work with school districts to overcome the obstacles to using school facilities such as parks during non-school hours.
- Enhance the use of existing parks and recreational facilities. Create a wide variety of programs during all hours of the day to serve all populations including children, the elderly and those with physical disabilities, and improve the quality and character of existing parks.
- Establish a comprehensive network of multi-use trails that encourages walking, biking, and physical activity, and that links residential areas, workplaces, commercial centers and community facilities.
- Create urban gardens or orchards.
- Consider the availability of public transportation and pedestrian/cycling routes to access existing or proposed facilities.
- Determine funding mechanisms and/or developer fees to pay for new or improved facilities.

REVIEW DEVELOPMENT PROPOSALS

Develop Health Impact Assessments (HIAs)

The Health impact assessment (HIA) is a relatively new tool that was created to understand the health implications of various policy decisions. According to the World Health Organization European Centre for Health Policy, an HIA is “a combination of procedures, methods and tools by which a policy, program or project may be assessed and judged for its potential effects on the health of the population and the distribution of these impacts within the population.” While the HIA is relatively new in the United States, it has been used widely in Europe and is being advocated for use in government decision-making by the World Bank and the World Health Organization.

HIAs provide a means for local boards of health to become more integrated into the planning process and to ensure that the health component is considered in land use decisions. Similar to Environmental Impact Reports, HIAs provide a practical framework for identifying health impacts and ways of addressing them.

There are generally five steps to developing a HIA. These include the following:

1. **Screening.** Determine which health-impacting projects, policies and programs should be evaluated.
2. **Scoping.** Identify which health impacts should be included.
3. **Appraising the Health Impacts.** Identify how many and which people may be affected, and assess how they may be affected.
4. **Recommending to Decision-Makers.** Decide on report formats, report length and depth for the specific audience.
5. **Evaluating and Monitoring.** Monitor what is happening as the project/program/policy unfolds and is implemented, and evaluate whether the HIA has achieved its objective.⁹

San Francisco Initiates Community HIA

Since 2003 the San Francisco Department of Public Health has been developing a practice of Health Impact Assessment (HIA) for land use development. The goal is to improve the way that development in the city impacts community health resources. The City's approach involves a critical analysis of land use plans and development projects and uses public health, urban planning, and social science evidence to make a comprehensive environmental and social assessment.

In November 2004, the San Francisco Department of Public Health initiated the Eastern Neighborhoods Community Health Impact Assessment (ENCHIA) to analyze how development in several San Francisco neighborhoods would affect the social and physical environments that are most important to health. This HIA reflects the first attempt at a comprehensive health impact assessment of land use planning in the United States. Information on the ENCHIA can be found at <http://www.sfdph.org/phes/ENCHIA.htm>.

Promote the Use of the LEED for Neighborhood Development Rating System

The Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) Rating System is a national standard for neighborhood location and design that integrates

the principles of green building, new urbanism and smart growth. A pilot for the LEED for Neighborhood Development rating system was released in early February, 2007.

LEED for Neighborhood Development certification provides independent, third-party verification that a development's location, design and construction meet accepted high standards for environmentally responsible development.¹⁰ The system rewards efficient use of land and the building of walkable communities. Credits towards certification are awarded under the following categories: smart location and linkage, neighborhood pattern and design, green construction and technology, and innovation and design process.¹¹

LEED for Neighborhood Development can help revitalize existing urban areas, decrease land consumption, decrease the need to drive, decrease polluted stormwater runoff, and build communities where people of a variety of income levels can coexist, and where jobs and services are accessible by foot or transit.¹² This can improve public health by encouraging physical activity, decreasing vehicle emissions and improving air quality and mental health.

Cities can use LEED for Neighborhood Development in two ways. First, cities can encourage all new development projects to pursue certification once LEED for Neighborhood Development program is released for use. Second, cities can use the content of the rating system as a guidepost for new development. For example, cities can review development proposals against the requirements of the rating system and make recommendations for project improvements that bolster health and environmental outcomes.

Create Project Development Review Checklists that Address Health

A new development can be designed any number of ways, and so this can be a good point to encourage cross-cutting design measures that increase public health. Numerous agencies have created development review checklists to ensure that new projects help improve health outcomes. Checklists can be incorporated with other planning goals – greenhouse gas reduction plans, smart growth land use guidelines, multi-modal transportation goals, for instance – that call for similar design techniques.

Timing is important. Cities should meet with the developers and the site master planner early on, before design is finalized, to discuss the desired outcomes and some of the primary areas where health can be improved during the site design process. These areas include:

- Access to parks and recreational facilities that provide a range of facilities, including passive and active recreation.

- A complete network of sidewalks that are designed for pedestrian comfort. This includes sidewalks on both sides of the street, appropriate width of sidewalks, and planting strips with street trees to provide shade and safe pedestrian cross walks.
- A network of bicycle routes that are designed for safety and consider such things as road widths, curb cuts and driveways; address potential hazards; provide linkages to bicycle routes outside the site; and provide bicycle parking.
- A street network that has a high level of connectivity and is not gated or walled off from adjacent developments, retail uses or public services such post offices or schools.
- Street design that supports walking, including the narrow streets (which are more attractive for pedestrians and reduce the “heat island effect” because the amount of pavement is reduced) and traffic calming measures such as bulb-outs in high pedestrian areas, pedestrian signals, frequent pedestrian crossings and traffic circles to slow traffic.
- A mix of land uses within walking distance, so that vehicle trips and miles traveled are reduced and active transportation, such as walking and biking, is increased.

Two examples of communities that have project review checklists are Shasta County and the City of San Francisco’s Health Development Measurement Tool. The first is a simple checklist to see how well projects meet certain specific standards. The second is a more detailed measurement tool where the city can identify desired outcomes and then analyze whether the project has met those outcomes (http://www.sfdph.org/phes/enchia/enchia_HDMT.htm).

Address Health in Environmental Review Under the California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires public agencies to prepare an Environmental Impact Report (EIR) when a decision may adversely impact the environment. The law specifically requires the EIR to identify changes in the environment that may adversely impact human health and the environment, either directly or indirectly. Local jurisdictions can develop locally relevant indicators and standards for impact assessment, or follow the standards of significance in Appendix G of the CEQA Guidelines.

CEQA does not directly address all of the health impacts discussed in this report, but its concern over environmental impacts and toxicity is obviously a related one.¹³ The analysis of health impacts within CEQA has been largely limited to the study of air pollution and toxic chemicals. However, CEQA allows local jurisdictions to create their own standards of significance to review the environmental impacts of a project and some communities have used these standards to review the health impacts of a project. For example, the San Francisco Department of Public Health is one example of a public health department that has been actively using CEQA health

analysis requirements to consider the impacts of involuntary displacement, housing affordability, residential segregation, open space adequacy, and pedestrian safety. In several cases, this consideration has resulted in the mitigation of adverse impacts through changes in project design.¹⁴ Other cities can similarly use CEQA to address public health impacts of proposed projects.

REVISE STANDARDS AND IMPLEMENTATION TOOLS

Reform the Zoning Code to Encourage Mixed Use

As the links between land use planning and public health are being rediscovered, communities are beginning to consider zoning code reform as a means of enhancing community health and livability. Most local zoning ordinances support low density development with a large separation of uses, thereby encouraging more driving and deterring physical activity. Some zoning ordinances disallow mixed use, neighborhood shopping and other features that support walkability. Zoning influences how much farmland is nearby, whether farmers' markets and community gardens are permitted uses, and where grocery stores and fast food restaurants are located, and thus plays a role in people's access to healthy food.

Many planners, particularly proponents of smart growth and new urbanism, view zoning code reform as a means for removing regulatory barriers that prevent the design of more livable neighborhoods. As such, they argue that zoning code reform can serve as a catalyst for neighborhood revitalization, increased physical activity, and better access to healthy foods. Through code reform, communities can reduce automobile dependency (and thus air pollution), and enhance walkability by allowing mixed use development and making streets more aesthetically pleasing.¹⁵

Cities can choose from several types of code reform models including traditional neighborhood development (TND), reverse zoning or TND lite, unified development codes, and form-based codes (FBCs). Many communities have adopted TND ordinances and transit-oriented development districts as parts of larger strategies to revitalize older communities and design more livable neighborhoods. Communities have also consolidated their land use and environmental regulations into unified development codes.¹⁶

FBCs, in particular, are gaining attention as an effective means of achieving mixed use since they focus on building type, dimensions, façade features, and the location of parking. They also pay special attention to the width of streets and the design of public spaces. Uses are not ignored, but the parameters for use regulation tend to be broader. With FBCs, the basic principle is that design, rather than use, is the primary building block for zoning.^{17 18}

The Form-Based Codes Institute has identified the following advantages of FBC:¹⁹

- FBCs are prescriptive (they state what you want), rather than proscriptive (what you don't want) and thus can achieve a more predictable physical result. The elements controlled by FBCs are those that are most important to the shaping of a high quality built environment.
- FBCs encourage public participation because they allow citizens to see what will happen where, often leading to a higher comfort level about greater density, for instance.
- FBCs can regulate development at the scale of an individual building or lot, and encourage independent development by multiple property owners. This obviates the need for large land assemblies and the megaprojects that are frequently proposed for such parcels.
- The built results of FBCs often reflect a diversity of architecture, materials, uses, and ownership that can only come from the actions of many independent players operating within a communally agreed-upon vision and legal framework.
- FBCs work well in established communities because they effectively define and codify a neighborhood's existing "DNA." Vernacular building types can be easily replicated, promoting infill that is compatible with surrounding structures.
- Non-professionals find FBCs easier to use than conventional zoning documents because they are much shorter, more concise, and organized for visual access and readability. This feature makes it easier for non-planners to determine whether compliance has been achieved.
- FBCs obviate the need for design guidelines, which are difficult to apply consistently, offer too much room for subjective interpretation, and can be difficult to enforce. They also require less oversight by discretionary review bodies, fostering a less politicized planning process that could deliver huge savings in time and money and reduce the risk of takings challenges.

Form-Based Code Elements

Form-based codes commonly include the following elements:

- *Regulating Plan.* A plan or map of the regulated area designating the locations where different building form standards apply, based on clear community intentions regarding the physical character of the area being coded.
- *Building Form Standards.* Regulations controlling the configuration, features, and functions of buildings that define and shape the public realm.
- *Public Space/Street Standards.* Specifications for the elements within the public realm (e.g., sidewalks, travel lanes, street trees, street furniture, etc.).
- *Administration.* A clearly defined application and project review process.
- *Definitions.* A glossary to ensure the precise use of technical terms.

Form-based codes also sometimes include:

- *Architectural Standards.* Regulations controlling external architectural materials and quality.
- *Annotation.* Text and illustrations explaining the intentions of specific code provisions.

(Source: Form-Based Codes Institute website: <http://www.formbasedcodes.org/definition.html>)

Reform Parking Standards

The amount, cost and location of parking has a tremendous impact on the quality of the built environment and the mode choices that we make. This, in turn, has an impact on health. Plentiful and cheap parking encourages driving. In transit-intensive neighborhoods, excess parking requirements increase pollution and congestion, reduce safety and access for pedestrians and cyclists, slow public transit, and drive up business and housing costs.²⁰²¹ Parking that is ill-placed (e.g., big box surface lots) can adversely affect the streetscape, discouraging pedestrian activity. Strategies to reduce both parking supply and demand are considered one approach to mitigating the negative health and environmental effects of traffic and congestion. Similarly, strategies to improve the placement of parking within an area or street environment can indirectly improve the walkability of a street.

Parking standards are typically included in the zoning code. Reducing the minimum amount of parking required for new development and charging fair market prices for parking can reduce vehicle trips and volumes, resulting in the following direct and indirect public health benefits:

- Increases in physical activity because of increased public transit use
- Improvements to air quality (and related health outcomes such as asthma)
- Reductions in traffic injuries and fatalities

- Reductions in traffic-related noise (and related stresses such as lack of sleep and annoyance)

A variety of parking management tools are available to cities to counteract the adverse impacts of cheap parking and high parking requirements. Some examples are briefly discussed below:

- *Reduce parking requirements in the codes, especially for infill and transit-oriented development:* Requirements are applied with consideration to specific geographic and demographic factors that affect parking demand at a particular location.
- *Set parking maximums instead of minimums:* Limit the maximum amount of parking capacity allowed at particular sites or within a particular area, especially in growing commercial centers.
- *Allow for shared parking arrangements:* Parking spaces can be shared by more than one user, which allows parking facilities to be used more efficiently
- *Provide or encourage commuter financial incentives:* These incentives include parking cash-outs where commuters who are offered subsidized parking are also offered the cash equivalent if they use alternative travel
- *Allow on-street parking in pedestrian-rich areas:* Instead of, or in addition to, off-street parking in surface lots; this will encourage lower traffic speeds on the street
- *Locate surface parking behind or on side of buildings:* To maintain a pedestrian-friendly streetscape.

Implement a Traffic Calming Program

Traffic calming refers to a set of design features and strategies used by urban planners and traffic engineers to slow down or reduce traffic, thereby improving safety for pedestrians and bicyclists. Traffic calming is a self-enforcing set of physical and visual cues that encourage drivers to travel at slower speeds. It is “self-enforcing” because the physical design itself, instead of an arbitrary speed limit, limits speed.²² The term "traffic calming" can also apply to a number of transportation techniques developed to educate the public and provide awareness to unsafe driver behavior.²³

Some of the most common traffic calming strategies include:

- Traffic circles
- Raised circles in the middle of intersections
- Speed humps

- Curb extensions or “pinch points”
- Raised sections of road designed to reduce speeds
- Raised crosswalks
- Median islands
- Narrow streets
- Textured paving at intersections or along stretches of street
- Street trees and planting strips between sidewalks and the street²⁴

Traffic calming can reduce the incidence and severity of collisions.²⁵ Additional benefits can include reducing traffic-related noise, improving the aesthetics and “street life” of a street, and increasing neighborhood interaction. Since each street and neighborhood is unique, the decision to adopt traffic calming measures should be considered on an individual basis. Traffic calming strategies can be integrated into bicycle and pedestrian master plans. Alternatively, some cities have incorporated traffic calming policies into their general plans or have implemented separate traffic calming programs or procedures.

City of San Jose Traffic Calming Toolkit

The City of San Jose prepared a Traffic Calming Toolkit to assist community leaders with an understanding of the City’s Traffic Calming Program. The Toolkit is designed to provide community leaders with a model to guide residents toward a better understanding of the available tools and the necessary steps to seek basic and comprehensive traffic calming services. Such a toolkit could serve as a model for Coachella Valley communities seeking to implement traffic calming measures.

The Toolkit can be downloaded from the City’s website:
<http://www.sanjoseca.gov/transportation/forms/toolkit.pdf>

Work with School Districts on School Siting Requirements

Requirements that schools be sited on large parcels make it difficult for schools to locate within existing communities and force schools to locate on the urban fringe where large contiguous tracts are available and land is less expensive. Since World War II, there has been a shift from smaller, centrally located, neighborhood schools to larger, consolidated suburban schools. The resulting increased distances between home and school has equated to more driving by car or bus to get students to school. By some estimates, 20% of rush hour traffic consists of parents driving their children to school. Centrally located schools increase the ability of students to walk or bike to school, thus creating the possibility for a daily source of physical activity. Indeed, studies

suggest that the lack of opportunity to walk or bike to school is among the factors that contribute to the growing rate of obesity among American children.²⁶

To address these issues, cities have several options including:

- Work with school districts to site new schools in appropriate locations that can be easily accessed by and integrated into the surrounding community. This is particularly important for elementary schools since they are smaller and generally serve local neighborhoods.
- Rehabilitate and reuse older neighborhood schools before new schools are constructed miles away, recognizing that they can serve as community focal points and contribute additional community amenities.
- Relax minimum acreage standards so that there are opportunities to build new schools on infill parcels in existing neighborhoods.
- Centrally locate schools within new neighborhoods.
- Ensure new school sites are designed with continuous, predictable and safe sidewalks and bike paths that present few barriers to walking and cycling.

Since school siting on the urban fringe has a ripple effect of encouraging sprawl out towards the school, and such sprawl often strains municipal services and infrastructure, it is in the interest of cities to coordinate with school districts. Some of the techniques that jurisdictions have used to foster communication between school districts and land use planning include school siting ordinances, inter-jurisdictional, joint-use agreements, and consideration of school siting in the land use and public facilities elements of the general plan.²⁷

IV. Conclusion

While we don't yet know everything about the emerging intersection between planning and public health, we do know a lot. Public health is generally enhanced by development according to smart growth principles: higher density, mixed-use, transit-oriented development, walkable and bikeable streets, and access to public transit. High rates of driving mean a less active and less healthy population. Conveniently, many of the planning principles that promote public health are the same ones planners already use to promote environmental sustainability, social cohesion, and economic development. Most of the tools and policy levers that can achieve these principles – presented in the toolkit above – are already available to planners and can be utilized immediately. With these principles in mind, the Coachella Valley can enhance the health of its citizens through the process of informed decision making.

V. Endnotes

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Appendix A – The Connection Between Planning and Public Health

PHYSICAL ACTIVITY

An estimated 64% of U.S. adults aged 20 years and older are now classified as overweight or obese. Obesity is directly correlated to levels of physical activity, and physical activity is impacted by planning decisions. Since 1980, obesity has doubled among U.S. adults, and since the early 1970s, the percentage of children and adolescents who are defined as overweight has more than doubled.¹ Predictably, the incidence of diabetes has increased tremendously during this period. Obesity increases a person's risk of illness or death due to diabetes, heart disease, stroke, a number of different cancers, and other medical conditions.² By 2005, 20.8 million people, or 7% of the population, suffered from diabetes, with some demographic groups such as people over 60 years old, African Americans and Latino Americans suffering even higher rates.

Along with food choice, level of physical activity is the major factor that determines body weight, overall mental and physical well-being, and resistance to illness and disease. Even moderate physical activity can have significant health benefits, and the U.S. Surgeon General recommends that citizens get 30 minutes of moderate physical activity per day. Unfortunately, over the past 20 years, the amount of physical activity Americans get has declined substantially. Today we spend more and more time sitting – behind a desk, in front of a computer or television, or behind the wheel of a car – and are less likely to be walking or bicycling to work, shopping or school. In fact, more than 60% of U.S. adults do not engage in the amount of activity recommended by the Surgeon General.³

Recent studies have suggested a correlation between obesity and urban sprawl.⁴ In sprawling communities people almost always drive more and walk less. Longer driving times increase one's chances of being overweight or obese, and so it is not surprising that people in sprawling communities have higher likelihoods of obesity and some obesity-related conditions such as hypertension.^{5 6} A recent study in Atlanta found that each additional hour per day spent driving was associated with a 6% increase in the likelihood of being obese, while each additional kilometer walked per day was associated with a 4.8% reduction in the odds of obesity.⁷

Opportunities to walk to perform routine daily tasks are more limited in sprawling communities. On the other hand, walking, bicycling and transit use increase in places that have a mix of residential, commercial and office land uses, compact residential and commercial development,

and walkable street and sidewalk networks.⁸ This, in turn, is associated with more overall physical activity and a lower likelihood of being obese.⁹

TRAFFIC INJURIES AND FATALITIES

More than 40,000 Americans die in vehicle crashes each year. In 2004, accidents were the fifth leading cause of death in the United States, and 40% of those accidents were motor vehicle crashes.¹⁰ The likelihood and severity of traffic accidents are influenced by land use and transportation patterns: vehicle volume, automobile dependency and traffic safety. Sprawling communities encourage automobile dependency, and the more we drive, the more likely we are to be involved in an accident.¹¹ .. Research has also found that in denser cities, where there are more opportunities to walk and use transit, pedestrian fatalities¹² and per capita traffic fatality rates tend to be lower,¹³ contradicting assumptions that “busier” areas are more dangerous for pedestrians and motorists.

Even if a dense place has more total accidents, they tend to be at a lower speed and have a lower chance of causing severe injury. Sprawling communities tend to have wide streets that are designed to move cars more efficiently and at higher speeds. In fact efficient and high-speed vehicle movement is a goal of most traffic engineers. As a result, accidents are more severe – for motorists, pedestrians and cyclists alike – when they do happen. One study found that an increase in the average speed from 20 to 30 mph was associated with 7.6 times greater risk of pedestrian injury. A pedestrian’s chance of being killed also increases as vehicle speeds increase.¹⁴

Street environment factors, such as parked cars, landscaping, crosswalks, and the presence of pedestrians or bicycles, can affect accident rates by either encouraging or discouraging driver alertness and caution. Where more people are out walking or bicycling, crashes between motorists and pedestrians or bicyclists are less likely.¹⁵ Where roadways are narrower and have street trees, on-street parking and landscaping, lower crash rates and fewer crash-related fatalities occur, despite similar traffic volumes and speed limits.^{16 17}

Thus, research has found that roadway design has an impact on automobile travel speed, which in turn has an impact on fatality and injury rates for drivers, pedestrians, and cyclists.

RESPIRATORY HEALTH

Asthma and other respiratory diseases are a leading cause of death and doctor visits in the U.S. In 2004, chronic lower respiratory diseases were the fourth highest leading cause of death in the U.S.¹⁸ Asthma is now the most common chronic childhood disease, occurring in approximately 54 of every 1000 children.¹⁹ And rates are increasing – the percentage of children who had asthma more than doubled between 1980 and 1995, from 3.6% to 7.5%.²⁰

Asthma and other respiratory conditions are triggered and exacerbated by poor air quality. Though air quality is affected by various factors, including climate, wind patterns, and emissions from industry and vehicles, transportation-related pollutants – ozone, sulfur dioxide, and particulate matter – are one of the largest contributors.²¹ Many of these transportation-related pollutants are respiratory irritants and contribute to higher rates of asthma. They are also associated with a higher incident and severity of other respiratory symptoms, impaired lung function, and other health problems.²²

A strong relationship exists between air quality and driving rates. Driving rates are a direct function of how cities and towns are built. Compared to more compact communities, lower-density communities have higher vehicle ownership rates and residents who drive longer distances.²³ Suburban communities tend to generate higher per-capita vehicle emissions²⁴ and have higher peak ozone concentrations than more compact areas.²⁵ These conditions, particularly when they are concentrated along major roadways, contribute to greater respiratory disease and poorer lung function, particularly among children and the elderly.^{26 27} Reducing the amount we drive and our proximity to major roadways can help minimize our exposure to transportation-related respiratory irritants.

MENTAL HEALTH

An estimated 26.2% of Americans ages 18 and older — about one in four adults — suffer from a diagnosable mental disorder in a given year.²⁸ Mental health issues related to conditions in the built environment can include increased stress and depression. Though stress can be exacerbated by any number of circumstances, it is often correlated with long daily commutes and traffic congestion.²⁹ Though some people enjoy their driving time, research suggests that for most people automobile commuting is more stressful than other forms of travel.³⁰ Travel distance and volumes are also contributing factors to road rage.³¹

Although the relationship between sprawl and mental health is somewhat inconclusive, sprawl can isolate people socially and limit the independence of non-drivers, increasing the potential for

depression. On the other hand, some studies have found that the suburbs may also have positive mental health benefits where they afford access to nature and green space³² or feelings of peace and refuge.³³

Nature, parks and other green spaces can be linked to mental health in other ways. For example, the ability of children with Attention Deficit Hyperactivity Disorder (ADHD) to focus and concentrate has been shown to improve with exposure to parks and other green spaces.³⁴ Green spaces have positive effects on physiological measures, such as heart rate, skin conductance, muscle tension, and blood pressure.³⁵

NUTRITION

Poor nutrition decreases public health. The decline in physical activity and increase in obesity rates in the U.S. have been accompanied by the increased availability of less nutritious foods - prepackaged, highly processed, or high in sugar and fat. Urban sprawl has reduced the amount of accessible farmland and limited the availability of fresh, locally produced food in many urban areas.³⁶ Inadequate public transportation, the relocation of supermarkets to the suburbs, the proliferation of fast food restaurants, and the absence of healthy food at neighborhood convenience stores have also been implicated in the lack of access to nutritious food.³⁷

In California as a whole, there are 4.18 times as many fast-food restaurants and convenience stores as supermarkets and produce vendors.³⁸ Fast-food restaurants are often disproportionately located in low income and minority neighborhoods,³⁹ and results of a study in Atlanta suggest that there are fewer healthy food sources within walking distance in low-income communities than in higher-income communities.⁴⁰

Studies have also shown that supermarkets are inequitably distributed, with fewer stores per capita in the lowest income zip codes than in higher income zip codes.⁴¹ The presence of a supermarket in a neighborhood predicts higher fruit and vegetable consumption and a reduced prevalence of overweight obese people.⁴² Community design that reduces the need to drive or take transit to purchase healthy food, that accommodates a variety of food choices, and that limits unhealthy food vendors can benefit a community's overall nutritional health.

SOCIAL CAPITAL

Social capital refers to one's social network or sense of attachment to one's community. It is influenced by time and energy available for citizen involvement and social engagement, personal

recreation, and other activities that create social bonds between individuals and groups.⁴³ Identified health benefits linked to high levels of social capital include fewer illnesses, longer life, better overall health, improved cardiovascular health, faster recovery from illness, improved mental health, and a number of other benefits.⁴⁴

The amount of time spent driving has been linked to a decrease in social capital. In his popular book *Bowling Alone*, Robert Putnam found commute time to be the strongest predictor of civic involvement – every 10 additional minutes spent commuting was associated with a 10% drop in community involvement. Other elements associated with sprawl, such as social stratification, have also been implicated in decreasing social capital.⁴⁵

Community design that promotes equality, access, diversity, and mobility for all; that reduces commuting distances and times; and that facilitates social interaction can increase social capital and reap physical and mental health benefits.

Appendix B – Factors of the Built Environment that Impact Public Health

REGIONAL LOCATION

The location of development regionally is an important factor in the generation of vehicle trips and air pollution. Regional location relative to the central city, employment centers, and other uses – and whether the development is located on an infill site or at the urban fringe – influences the number and distance of vehicle trips. Since fewer vehicle trips are related to improved public health, infill development – in downtowns, mixed use centers and along major corridors – has positive health outcomes.

Does Regional Location Really Make a Difference?

An EPA study compared the transportation and environmental impacts of locating the same amount of development on two sites – one an infill site and one an edge/new development site – in three metropolitan regions. The study found that across the board infill development generated substantially lower vehicle miles traveled (VMT) and emissions than comparably sized greenfield sites.

(Source: Environmental Protection Agency, *Our Built and Natural Environments*; and Allen, E. G. Anderson, and W. Schroerer. “The impacts of infill vs. greenfield development: a comparative case study analysis,” U.S. Environmental Protection Agency, Office of Policy, EPA publication #231-R-99-005, September 2, 1999.)

DENSITY AND INTENSITY OF DEVELOPMENT

The density or intensity of land use – “compactness” – brings destinations closer together and thus influences the amount people drive, walk or take transit. Increased density results in reduced trip lengths, lower VMT per capita, more walking and biking, increased transit ridership, and fewer vehicle emissions.^{46 47 48}

This, in turn, improves health outcomes. Density has been shown to reduce obesity by promoting transit ridership and walking as a transportation mode,⁴⁹ and to increase amounts of physical activity.⁵⁰ As household and workplace densities increase, emissions decline.⁵¹ Indirectly, density can also influence mental health and social capital because it reduces time spent in automobiles. When coupled with high transit service, a mix of land uses and pedestrian

amenities, higher density development can have an even greater impact on reducing the number of VMTs.⁵²

While the optimal density for transit service varies by jurisdiction, many studies have found that frequent transit service becomes viable above 7 dwelling units per acre.

LAND USE MIX

The separation of land uses, which typifies conventional suburban development, necessitates traveling longer distances to multiple locations. On the other hand, neighborhoods with mixed land uses are correlated with shorter trips and greater transit ridership, walking and overall physical activity.^{53 54}

While current research does not indicate exactly what degree of mix is necessary to attain health benefits, increases in walking and transit use are impacted by the following characteristics of neighborhoods:

- A variety of retail services⁵⁵
- Proximity of retail services to residential areas
- Proximity of convenience-oriented retail, such as restaurants, banks, laundromats, child care, drugstores and post offices, to work sites
- The total number of nonresidential destinations
- The total square footage of commercial destinations in a neighborhood.⁵⁶

Specific land uses most strongly linked to the percentage of household trips made on foot are: educational facilities, office buildings, restaurants and taverns, parks, neighborhood-scale retail establishments, civic uses and grocery stores.

ACCESS TO RECREATIONAL FACILITIES

In general, studies suggest that greater access to parks and recreational facilities increases levels of physical activity. A greater density of recreational facilities, including parks and multi-use trails, can increase the number of people who are physically active in a community. While there is no consensus about amount, type or location, most studies conclude that providing a variety of park and recreational facilities within walking distance (approximately ¼ mile or less) of homes will increase the likelihood of physical activity. Additionally, parks with many people exercising

are perceived as safer and more attractive. This speaks to the need to encourage a variety of activities and programs throughout the day at parks.

ACCESS TO HEALTHY FOOD SOURCES

Rising levels of obesity and obesity-related health problems, while associated with decreasing levels of physical activity, are also associated with accessibility to healthy food. Although food choices are ostensibly decisions made at the individual level, they are influenced by planning and policy choices that increase access to nutritious foods, such as fruits and vegetables, low-fat foods, and organic or locally-grown foods. Strategies to improve health include restricting drive-through restaurants in key locations such as near schools, community gardens, farmers markets, and encouraging regular dispersal throughout the city of markets with healthy food choices.

DISTANCE FROM SOURCES OF AIR POLLUTION

Respiratory health is affected by distance from sources of air pollution. Sources are divided into three categories: mobile (e.g., cars, trucks), area (e.g., dry cleaners, gas stations, airports, fireplaces, unpaved roads), and stationary (e.g., factories, power plants). These air pollutants can impact health both regionally and close to points of emission.

The extent to which a population's respiratory health is adversely affected by the pollution from these sources depends on various factors including the sensitivity of the population (e.g., children, the elderly), the type and quantity of pollutants, proximity to sources, and the duration of exposure. Since transportation-related pollutants are a large contributor to air pollution, measures to reduce driving and associated vehicular emissions would be expected to improve local and regional air quality. Measures to reduce a population's proximity to pollution sources would also be expected to have respiratory health benefits.

TRANSIT ACCESS AND AVAILABILITY

Accessible, frequent and convenient transit service is linked to reduced car ownership, vehicle trips, miles traveled and emissions, as well as increases in walking, biking, cardiovascular health and respiratory health. Generally, studies have found that transit located within 500 feet of employment centers generates the highest level of ridership, and that beyond 1,000 feet transit use drops off significantly. For residential areas, homes should be located within ¼ mile of

frequent bus service and up to ½ mile from other types of transit, including light rail and heavy rail.⁵⁷

STREET CONNECTIVITY

In neighborhoods with poor street connectivity, particularly where walking and cycling routes are direct, more people drive to make short trips. Neighborhoods with good connectivity, on the other hand, offer more route choices and shorter walking and cycling journeys because they have more intersections and shorter block lengths. This equates to a greater likelihood that one will walk.^{58 59} Since less driving equates to lower per capita vehicle emissions, good street connectivity offers opportunities for greater physical activity and also indirectly impacts respiratory health.⁶⁰

Characteristics of street networks that can improve connectivity include:

- A grid network instead of a hierarchal, arterial network
- Smaller average block size
- Higher number of intersections
- Higher street network density
- Higher number of through-streets
- Lower number of cul-de-sacs

WALKABILITY: STREET AND STREETScape DESIGN

The “walkability” of streets and neighborhoods influences an individual’s decision to walk, cycle or take transit instead of drive. Walkability most directly influences physical activity levels, which are positively correlated with sidewalks, safety from traffic and crime and an aesthetically pleasing environment.⁶¹ Street and streetscape design elements that increase walkability include the following:

- The design of roadways with lower speeds, which creates a safer walking environment
- Traffic calming features, including bulb-outs, chicanes, traffic barriers and street narrowing
- The presence or absence of sidewalks and crosswalks

- On-street parking instead of off-street parking in large lots
- Availability of transit service
- Presence of bicycle facilities
- Trees and landscaping that create a more attractive environment
- Signage and way-finding for pedestrians
- Attractive and appropriate building materials
- Height, mass and setback of buildings relative to the streetscape, which creates a comfortable space for pedestrians
- Space for public activities and civic events
- Public art and the integration of local design elements and themes⁶²

BIKEABILITY

The presence or absence of a bicycle network can have a significant impact on the amount of bicycling rates in a community. Generally speaking, measures that discourage driving or reduce vehicle speeds – parking restrictions, lower design speed on roadways, and traffic calming features – will combine with other measures – a network of safe on- and off-road bicycle facilities, destinations within a short biking distance, and safe bicycle parking facilities (such as lockers) – to make cycling a more viable transportation and recreation option. Like walkability, bikeability increases levels of physical activity.

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