



POLICY BRIEF



Walking and Bicycling for Our Health and a Healthy High Desert

SUMMARY: Active transportation has been shown to improve health and well-being, help maintain a healthy weight, and reduce the risk of chronic disease and poor health. Walking and bicycling are some of the most popular and convenient ways to exercise. Active transportation also benefits the environment by reducing fossil fuel consumption, improving air quality, and yielding other benefits. Yet the built environment and lifestyles in the High Desert do not always support it. This policy brief assesses the condition of the High Desert's active transportation environment and outlines ways that cities, residents, schools, and businesses can work together to support bicycling and walking.

ACTIVE TRANSPORTION

Everyone travels—for work, school or play—and how we travel affects our health more than we realize. Consider travel by the car. Air pollution, traffic congestion, long commutes, and the high cost of gasoline and auto insurance—these are just a few ways that the car influences our lives.

How we travel also affects our health. High Desert communities are dispersed, and long commutes are the norm. Bicycling and walking are unsafe because many roads are designed solely for cars. Fewer than 1% of the High Desert's workforce walk or bicycle to work, and less than half of all adults meet physical activity recommendations.¹

Fortunately, communities are embracing a new way of transportation planning. Active transportation, as it is called, refers to walking, bicycling, or any self-propelled way of travel. Research shows that communities designed for active transportation can encourage walking and bicycling, and also reduce impacts to the environment.²

The American Heart Association recommends moderate physical activity for at least 30 minutes a day. Following these guidelines by bicycling or walking reduces the risk of diabetes and heart disease, maintains a healthy weight, and enhances mental well-being, among other benefits.³

Increased walking and bicycling has other environmental benefits. It reduces fossil fuel use, air pollution from automobiles, traffic congestion at peak travel times, and overall vehicle miles travelled each year. Benefits also include improved water quality due to the reduction of pollutants from stormwater runoff from roads.

This policy brief addresses how to improve the active transportation system. It evaluates the condition of the High Desert's active transportation environment and identifies practical ways that cities, residents, business, and schools can partner to encourage walking and bicycling.

ACTIVE TRANSPORTATION IN THE HIGH DESERT

The High Desert’s “active transportation” system includes the bicycling, transit, and pedestrian infrastructure in Adelanto, Apple Valley, Hesperia, and Victorville. The following section describes the type, condition, and safety of that infrastructure.

BICYCLE ROUTES

The High Desert has a network of hundreds of miles of planned sidewalks and bicycle routes. Of that total, 80 linear miles of bicycle lanes have been built.⁴ Within this system, the three types of bicycle routes are:

- Class 1: bike lanes completely separate from the roadway and outside the public right of way
- Class 2: bike lanes designated with striping, pavement markings, and signage designating cycling
- Class 3: bike lanes that are simple signed routes that share the same right of way with motor vehicles

As shown below in Chart 1, the majority of bike lane miles in the High Desert are in Apple Valley and Hesperia. Both cities have built approximately 20% of their bike lane system. Victorville has adopted a non-motorized transportation plan and now requires developers to adhere to it.

TRANSIT ROUTES

The High Desert comprises a vast territory of 276 square miles, from densely populated areas of Victorville to the rural areas of Pinon Hills. While many job centers are located near the I-15, the commute patterns are very dispersed, with residents commuting down the hills and vice versa. These distances make it challenging to provide comprehensive transit service.

The Victor Valley Transit Authority (VFTA) operates local fixed-route bus service to Adelanto, Apple Valley, Hesperia, Victorville, and certain unincorporated areas. VFTA provides 21 local routes with an annual ridership of 1.5 million riders. The Victor Valley Transit Station is the central stop for mass transit service, providing a place for making transfers to local and regional buses and routes.

Transit coverage is usually part of a Short-Range Transportation Plan (SRTP). Because this analysis was not included in the SRTP, other measures are used. According to WalkScore, Victorville scores 18 out of a maximum of 100, meaning that the area has limited transit coverage compared to more urban cities.⁵ This ranking, while expected within the High Desert, also underscores the challenges of transit access.

Chart 1 and Figure 1 show the High Desert’s active transportation system.

CHART 1: ACTIVE TRANSPORTATION INFRASTRUCTURE IN THE HIGH DESERT

High Desert Community	WalkScore Ranking 0–100	Bicycle Lane Miles Built	TransitScore Ranking
Adelanto	5	-0-	N/A
Apple Valley	11	36	N/A
Hesperia	13	40	N/A
Victorville	17	4	18
Average/Total	12	80	18

Source: PlaceWorks, 2014; WalkScore, 2014

Note: WalkScore and TransitScore are measures of the completeness of walking and transit routes. Although no single measure can adequately encompass all parts of a pedestrian and transit network, these measures are the first to be applied nationwide and provide a standardized metric.

SIDEWALKS

Equally important to the High Desert's active transportation system are sidewalks. Walking is the least costly and most common way for people to exercise and be physically active. Safe and pleasant sidewalks are a valued commodity in any community and are necessary in order for residents to walk in their neighborhoods or to frequent businesses.

The High Desert has traditionally not had a robust network of sidewalks. Prior to incorporation, the County of San Bernardino did not always require sidewalks. The long distances between shopping, services, and neighborhoods often make it financially infeasible to link with sidewalks. Moreover, there were no uniform standards for sidewalks.



Moving forward, significant work is needed to encourage more walking in the High Desert. In some places, new sidewalks are required or missing links need to be completed. In other cases, the sidewalks are too narrow or lack pedestrian amenities. Many High Desert communities have signed memoranda of understanding with local schools to use their running tracks in the absence of sidewalks. But this cannot replace the need for sidewalks in many neighborhoods.

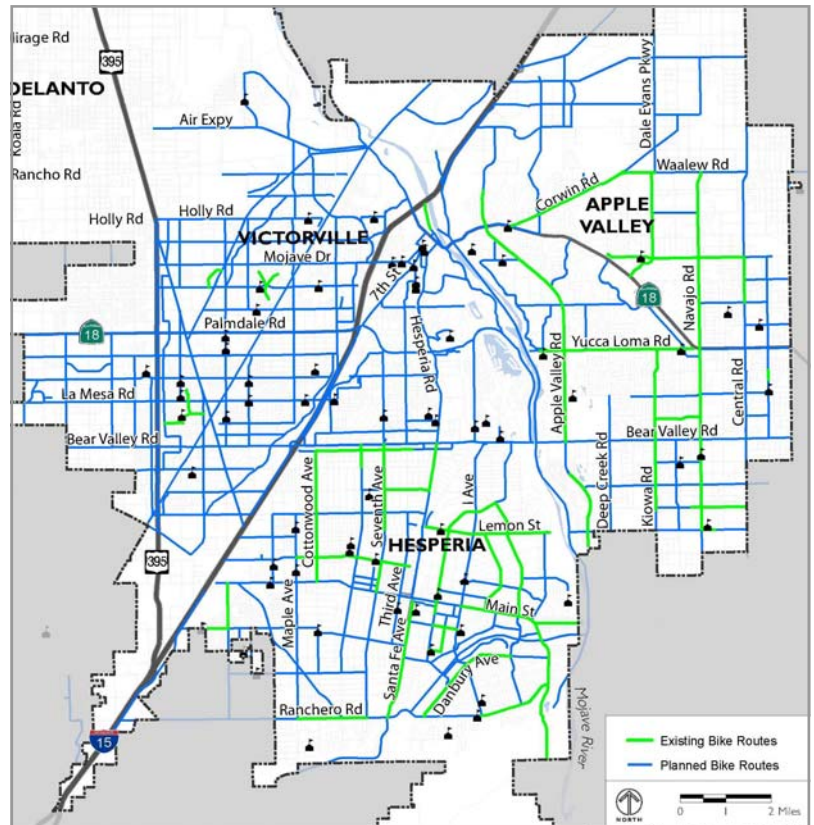


FIGURE 1: HIGH DESERT BICYCLE ROUTES

CASE STUDY: HESPERIA AND APPLE VALLEY ON THE MOVE

Hesperia and Apple Valley are active in creating bicycling lanes. In 2011, Hesperia received \$1.85 million in grants for pedestrian and bike routes on Sequoia, Willow, and 8th Avenue. With these changes, Hesperia will have more than 40 miles of bicycle paths, with nearly 3 of those being joint pedestrian and bicycle paths that are separated from traffic and include safety lighting.

The Town of Apple Valley is also using millions of dollars in federal and state grants to extend and upgrade 35 miles of bike lanes, which includes signage and clear markings for Class 2 bicycle lanes. In addition, Apple Valley is designing a Class 1 Bike Path that will connect the existing bike path network in Apple Valley to the Riverwalk and Victor Valley College in Victorville.

STREET SAFETY

Pedestrian and bicyclist safety are of utmost concern. Every day at least one child, adult, or senior is injured or killed in either a pedestrian or bicycling accident in the High Desert. The tragedy and cost of long-term injuries and fatalities underscores the need for programs to improve pedestrian and bicycling safety.

From 2007 to 2011, the High Desert had 349 pedestrian and bicycling accidents. Figure 2 shows where accidents are most concentrated. These collisions resulted in 386 injuries and fatalities.⁶ Six roadways account for more than one-third of accidents (Chart 2).

CHART 2: MOST DANGEROUS ROADS FOR PEDESTRIAN AND BICYCLE COLLISIONS

Primary Street	Number of Accidents	Percent of All Accidents
Bear Valley	28	8%
7th Street	27	8%
Main Street	25	7%
Route 18	21	6%
Palmdale Rd	19	5%
Route 15	16	5%

Source: TIMS Safetrec, 2007-2011.

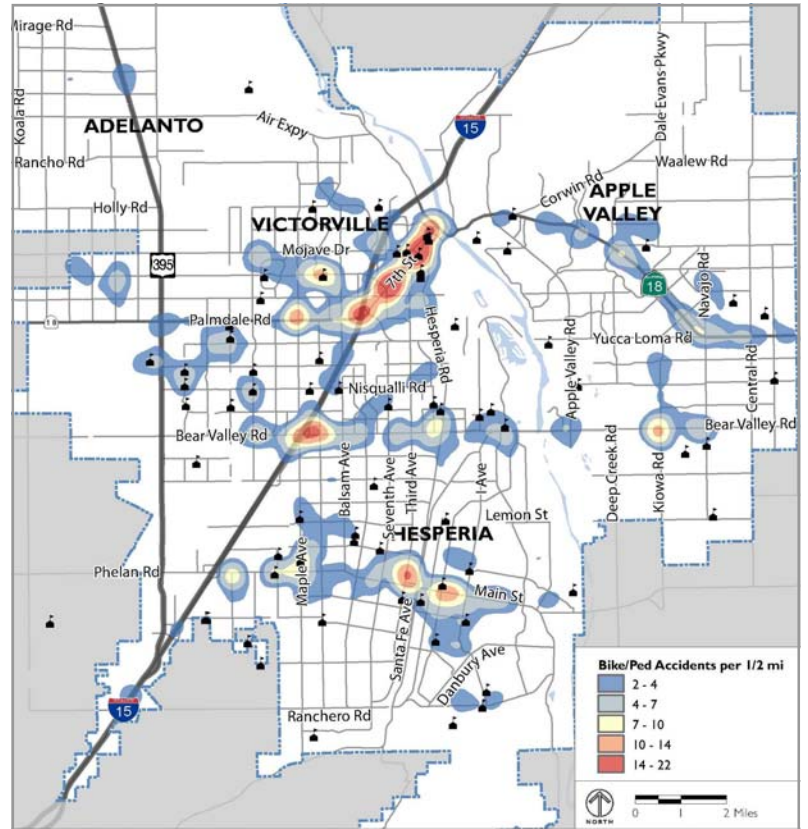


FIGURE 2: BICYCLE AND PEDESTRIAN COLLISIONS

The California Office of Traffic Safety (OTS) provides a measure of traffic safety of comparably sized communities. As shown in Chart 3, three High Desert cities rank in the 90th percentile with respect to traffic safety, which means that only 10% of similar cities are safer. Victorville ranks in the 50th percentile for bicycle accidents and 25th percentile for walking.⁷

Although the High Desert ranks safer than most communities with respect to pedestrian and bicycling collisions, there is one key difference. The fatality rate for pedestrian collisions is double the national average due to travel speeds, street design features, and pedestrian behavior.

CHART 3: TRAFFIC SAFETY RANKING FOR HIGH DESERT

High Desert Community	Safety Ranking among Comparable Cities (1 = highest or best of comparable cities)		
	Comparable Cities	Bicycling	Walking
Adelanto	94	86	80
Apple Valley	102	92	99
Hesperia	101	87	90
Victorville	55	54	25

Source: TIMS SafeTrec, 2007-2011; Office of Traffic Safety, 2011.

MAKING A DIFFERENCE

The High Desert's rural-suburban lifestyle is unlike anywhere else in southern California. Residents value its expanse of open space. The challenge is how to encourage active transportation in the High Desert. What follows are best practices that are feasible for implementation in the High Desert.

RETHINKING STREET DESIGN

Southern Californians, particularly High Desert residents, depend on cars to get to work, shopping, and other destinations. Cities have responded by expanding roads to allow more lanes and faster speeds. While allowing one to drive greater distances faster, this focus has resulted in less walking and bicycling, higher levels of air and noise pollution, and poorer health.

Recent years have seen the emergence of the Complete Streets movement. This approach is based on the premise that roadways should be designed not only for cars and trucks, but for pedestrians, bicyclists, and transit riders. AB 1358 (Complete Streets Act of 2008) even mandates that cities include policies as part of their general plans to safely accommodate all users—bicyclists, transit riders, children, older people, and disabled people.

The Complete Streets Act does not require that all streets be designed in the same way. The appropriate design depends on who the road serves and whether the city is rural, suburban, or urban. So while not every street should be a complete street, cities should consider the following when building or retrofitting their roadways:

- **Pedestrians Facilities:** Adequate and unobstructed walking space, lighting, trees and shading from the elements, roadway separation, easy access to walkable destinations, and safe and frequent crosswalks and crossings.
- **Bicycle Facilities:** Routes safely shared with traffic, marked bike lanes (or appropriate separation based on speed and volume of traffic), bicycle stations, bicycle parking, intersection treatments, and destinations accessible by bike.
- **Transit Facilities:** Connectivity to bicycle and pedestrian routes, separated or prioritized travel ways, coordinated land use planning, bike parking, lighting, and walkable and bikeable distances between stops and stations.

The photographs in the left column and below show how design features can make streets “complete” and more safe and pleasant for walking and bicycling.



Medians, trees, bicycle lanes, and sidewalks improve the appearance and function of a standard arterial.



Bulb-outs, brick pavement, shrubs, and trees make this street an enjoyable place for people to stroll and safely cross the street.



Traffic speed devices remind motorists to drive safely.

NEIGHBORHOODS

Most walking and bicycling happens within neighborhoods, including routes to schools and parks. Communities are turning to neighborhood traffic calming and safe routes to school programs to help create a walkable and bikeable environment.⁸

Neighborhood Traffic Calming

Traffic-calming programs are designed to improve the safety of streets and encourage walking or bicycling. Many techniques can help calm traffic, each dependent on the roadway, type and number of users, and the desired impact. Some of these are:

- Narrowed roads or road diets to reduce the number of lanes
- Bulb-outs, chokers, and extended curbs to reduce street right of way
- Speed humps, signage, and signaling to help calm traffic
- Enforcement tools, such as speed limit monitors, patrols, cameras, etc.
- Medians, foliage, and trees to create a more pleasant and calming drive

These techniques are often part of a neighborhood traffic-calming program, but may also be implemented at schools, downtown, and parks. The overall effect of these calming devices and beautiful landscapes are that they attract families to purchase homes in neighborhoods.

Safe Routes to School

Safe Routes to School (SR2S) is a movement to create safe, convenient, and fun ways for youth to bicycle or walk to school. Since 1970, the percentage of children walking or bicycling to school has dropped from 50% to only 15%. SR2S is designed to reverse this trend, improve physical activity, and reduce the prevalence of obesity.

SR2S programs are most effective when they incorporate the 5 “E”s for walkable places:

- **Engineering.** Creating operational and physical improvements to infrastructure around schools
- **Enforcement.** Partnering with law enforcement to ensure roads are safe and traffic laws enforced
- **Encouragement.** Using walk-to-school days, walking school buses, and bicycle trains to encourage bicycling and walking
- **Education.** Giving people of all ages and abilities the skills to bike and walk, and holding driving safety campaigns
- **Evaluation.** Planning for walking and bicycling as a safe and viable option, and measuring and evaluating the results

Numerous examples of successful programs can be found across California. An extensive inventory of programs is available at www.saferoutesinfo.org/.

CASE STUDY: SAFE ROUTES TO SCHOOL IN ACTION

In 2013, the San Bernardino County Public Health Department was awarded a Cycle 2 Federal Non Infrastructure Grant for implementing Safe Routes to Schools (SR2S). Eleven High Desert/Mountain school districts are eligible for these services. Each target school receives a full day of student safety training, including a pedestrian/bicycle rodeo for students, a full day of adult SR2S training that incorporates the 5 “E”s, two walking reviews of the school site, and a summary planning session.

Sterling Solutions, a nonprofit organization founded and committed to promoting pedestrian safety in San Bernardino County, is assisting in this effort. Sterling Solutions actively works with Victorville’s SR2S Task Force and the County of San Bernardino Department of Public Health Healthy Communities’ Safe Routes to School program to implement a variety of education and training programs, including safety rodeos to teach school children how to safely walk and bicycle to school.

REGIONAL TRAILS

Providing safe and pleasant natural areas for walking encourages people to become more active. In recent years, communities across southern California have sought to develop a broader regional trail network, such as Rail-to-Trails, reuse of utility easements, or conversion of drainage washes.

Mojave Riverwalk Trail

The City of Victorville, in cooperation with SANBAG and Caltrans, proposes to build the Mojave Riverwalk, a 9.5-mile bikeway connecting Victor Valley Transportation Center, Victor Valley College, and Mojave Narrows Park. The project runs between 6th Street in Victorville and Bear Valley Road. A section of the project overlaps the Yucca Loma Bridge/Yates Road/Green Tree Boulevard (Yucca Loma Project).

A portion of the trail will lead to Mojave Narrows Park, an 840-acre regional park offering a full complement of nature-oriented activities. Located along a culturally significant riverbed, Mojave Narrows offers lush plant growth, waterways, strands of cottonwood and willows, and meadows. The park is also home to 1,500 species of wildlife.

California Aqueduct and Washes

The City of Hesperia also has opportunities to establish regional trails of significance. The California Aqueduct has long been viewed as an opportunity for a regional bicycle trail connecting High Desert cities. Similar opportunities with the Oro Grande Wash on the west side of the I-15 are shown in the Oak Hills Community Plan. Although these washes have not received as much attention as the Mojave Riverwalk Trail, they still present opportunities.

Other Locations

The Town of Apple Valley and other High Desert cities also have other regional trails opportunities. These include vacant land within utility corridors, abandoned railroads, and smaller washes or drainage channels. These options have not been fully identified for every jurisdiction, but still merit consideration on a case-by-case basis or as part of an overall High Desert nonmotorized transportation plan.

The photograph below shows where the Riverwalk Trail will terminate into the Mojave Narrows Regional Park.



Oro Grande Wash



Panoramic View of the Mojave River Bed

EDUCATION AND ENFORCEMENT

Education, encouragement and enforcement are essential to creating a bicycle- and pedestrian-friendly place. Innovative programs adapted from the 5 “E”s follow.

Education

Education is an key part of a bicycling and pedestrian culture. One example is the walk or bicycle-to-school day. Every year, hundreds of cities participate in events, spreading the 5 “E”s—engineering, enforcement, education, encouragement, and evaluation. A wide range of events can be found at www.walkbiketoschool.org/.

Several state organizations recognize best practices. The League of American Bicyclists’ Bicycle Friendly Business (BFB) program recognizes employers for efforts to encourage bicycling for employees, customers, and the community. Walk Friendly Communities also recognizes communities that are working to improve the safety, mobility, and access for pedestrians.

Encouragement

The Hesperia Recreation and Parks District holds bicycle/walking/skate competitions that allow residents to race or simply participate in the event. Down the hill in San Bernardino, an innovative concept is the Strider program. “Strider” groups meet at designated “health hubs” for health education classes, pick up fresh produce from local farmers, and walk designated routes.

Victorville implements a “Walk in the Park” program to encourage increased physical activity. Walking trails and sidewalks are available in many City parks, surrounding ball fields, and open space for ease of use. To help encourage and support walkers, the City provides walking trail maps in four parks, describing recommended routes and distances to keep walkers on track.

The High Desert also has bicycling groups (e.g., Victor Valley Bicycle Club, High Desert Cyclists) to encourage cycling. Schools offer classes to give people of all ages the skills and confidence to ride. Other best practices include preparing bicycle-friendly maps or sponsoring events in the High Desert, like the Tour de Apple Valley.

Enforcement

Most people at some point are pedestrians, motorists, or bicyclists. Learning to share the roadway is required. Traffic laws must be enforced to curb speeding, right-of-way violations, and other unsafe practices. This may also require safe driving education to ensure drivers are equipped to watch for pedestrians and bicyclists.

Pedestrians and bicyclists are also responsible for their safety. As noted earlier, only 40% of children and youth always wear helmets when bicycling, and many accidents occur when people cross midblock or ride on the wrong side of the road. Law enforcement must also ensure that pedestrians and bicyclists follow traffic laws.

CASE STUDY: REGIONAL COLLABORATION IN ACTION

Education and advocacy efforts are occurring at a regional level. In 2013, the San Bernardino Association of Governments (SANBAG) adopted a MOU with SCAG to pursue projects that implement the Regional Transportation Plan and Sustainable Communities Strategy. The intent is to create more walkable and bikeable places, improve public health, and help increase walking/bicycling to school.

The MOU incorporates items from the San Bernardino Active Transportation Vision and policy recommendations developed by SANBAG, County Department of Public Health, Omnitrans, Safe Routes to School National Partnership, American Lung Association, MoveIE, Inland Empire Bicycle Alliance, etc. This effort is one of the first countywide collaborative of its kind in California.

MOVING TO ACTION



The Healthy High Desert recognizes that walking and bicycling are the most economical and effective ways to improve health. However, it is not possible to increase physical activity without commitment. It is incumbent on civic leaders, business community, and residents to make our communities conducive to walking and bicycling.

It is always too easy to dismiss street improvements and programs as too costly. Yet, making communities walkable and bikeable improve health and quality of life. In this light, the short term costs we face simply reflect an intentional choice to prioritize the long-term health of residents and the quality of life in our communities.

POLICY RECOMMENDATIONS

1. **Active Transportation Infrastructure.** Cities should adopt complete streets policies in their respective general plan and development codes that require the construction of sidewalks and bicycle lanes on appropriate roadways.
2. **Regional Trail System.** Cities should continue to support and lobby for financial assistance to create the Mojave Riverwalk Trail and other regional trails that link cities together and encourage walking and bicycling.
3. **Street Designs.** Development codes and engineering standards should be updated to require sidewalks, bicycle lanes, and associated amenities that are designed to comfortably and safely accommodate walkers and bikers of all ages and abilities.
4. **School Safety.** High Desert schools should prioritize the design and implementation of safe-routes-to-school programs, including education of residents, to make it more safe and inviting for children to walk and bicycle to and from school.
5. **Traffic Calming.** High Desert cities should work with residents, business, and neighborhood organizations to make streets safer places for walking and bicycling with the latest strategies to calm traffic and reduce the risk of accidents.
6. **Education.** School board, cities, and residents should collaborate on innovative education programs, including bicycle rodeos, school safety committees, and other programs to teach residents about safe bicycling, walking, and driving.
7. **Community Events.** High Desert healthy community coalitions should promote the benefits of walking and bicycling through community events, information on routes, business advocacy, and other efforts to encourage more active living.
8. **Funding.** The High Desert should work with its community partners, San Bernardino Association of Governments, San Bernardino County, and nongovernmental agencies to apply for funding to improve the bicycling, pedestrian, and transit network.
9. **Transit Planning.** The High Desert cities should work with Victor Valley Transit Authority to expand service and explicitly incorporate and support bicycling and other nonmotorized uses in their Short-Range Transit Plan.
10. **Master Plans.** All local governments should develop pedestrian and bicycle master plans and support the implementation of those plans through the local development code, capital improvement program, and associated funding.

REFERENCES

1. Professional Research Consultants, "Community Health Assessment and Community Health Report," St. Mary Medical Center, 2011.
2. Rodriguez, D., "Active Transportation: Making the Link from Transportation to Physical Activity and Obesity. A Research Brief," Princeton, NJ: Active Living Research, a National Program of the Robert Wood Johnson Foundation, 2009.
3. Haskell, WL, I-M Lee, RP Pate, KE Powell, SN Blair, BA Franklin, CA Macera, GW Heath, PD Thompson, A Bauman, "Physical Activity and Public Health: Updated Recommendation for Adults from the American College of Sports Medicine and the American Heart Association, *Circulation* 116 (2007), 1081–1093.
4. San Bernardino Association of Governments, "Nonmotorized Transportation Plan" (updated for Apple Valley, Victorville, and Hesperia), 2012.
5. Walk Score, "How Walk Score Works"; "Get Your Walk Score: A Walkability Score for Any Address, both available at <http://www.walkscore.com>.
6. Safe Transportation Research and Educational Center (SAFETREC), "Transportation Information Mapping System," 2014, accessed at <http://tims.berkeley.edu/index.php>.
7. California Office of Traffic Safety, "Collision Rankings: Victorville, Hesperia, Apple Valley, and Adelanto, 2011, accessed at http://www.ots.ca.gov/Media_and_Research/Rankings/default.asp.
8. The League of American Bicyclists, "The Essential Elements of a Bicycle Friendly America," accessed at <http://www.bikeleague.org/content/5-es>.

Healthy High Desert Mission and Values

The Healthy High Desert is a group of organizations in the High Desert region of San Bernardino County, organized to improve the health of High Desert residents and provide a platform for:

- Creating a safe, healthy community for all residents
- Supporting local Healthy City initiatives
- Exploring key health-related issues
- Developing peer support and learning relationships
- Developing opportunities for collaboration
- Creating joint funding appeals
- Advocacy and public education

Members

City of Adelanto
 Town of Apple Valley
 City of Barstow
 City of Hesperia
 City of Victorville
 Barstow Community Hospital
 Desert Valley Hospital
 Kaiser Permanente
 St. Mary Medical Center
 Victor Valley Community Hospital
 Hesperia Recreation & Park District
 High Desert Community Foundation
 High Desert Resource Network
 County of San Bernardino, First District Supervisor's Office
 County of San Bernardino, Department of Public Health
 County of San Bernardino, Superintendent of Schools
 Mojave Desert Air Quality Management District
 Victor Valley Dental Service Program

A COLLABORATIVE EFFORT



Contact: Chuck Leming
 Healthy Communities Program
 (909) 387-6607
 County of San Bernardino
 Cleming@dph.sbcounty.gov



Contact: Mark Hoffman
 Inland Empire (909) 989-4449
 MHoffman@PlaceWorks.com