

A COMMUNITY DESIGN TOOLKIT

# Healthy Communities in California's San Joaquin Valley



Prepared By:



**Local  
Government  
Commission**

Local Government Commission  
Sacramento, California



Opticos Design, Inc.  
Berkeley, California

Community Design Toolkit  
Healthy Communities in California's San Joaquin Valley  
October 2009

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reduce childhood obesity through public policies that promote  
active living, healthy eating and access to healthy foods.

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This report provides a series of community design best practices, recommendations and policies that can contribute to a healthy lifestyle for San Joaquin Valley residents. The document acknowledges the aspects of the San Joaquin Valley that make it a unique and special region. Since 2002, the Local Government Commission has partnered with Opticos Design, Inc. to provide community-driven design and revitalization plans for communities in the Valley through grants from the California Department of Transportation and the Robert Wood Johnson Foundation, among others. While the communities represent a broad range of physical, demographic and environmental conditions, they possess some similarities with regards to their challenges and opportunities.

Made possible by the Robert Wood Johnson Foundation's Leadership for Healthy Communities national program, this report recognizes that community design and policy play a central role in promoting healthy and active communities. At a fundamental level, this includes the provision and maintenance of safe and convenient connections for pedestrians and bicyclists as a framework for people to meet at least a portion of their daily exercise needs through walking and bicycling. While consistent sidewalks and pedestrian-friendly streets are certainly important, these components without additional policy considerations are not always sufficient to make the healthy choice the safe and easy choice. Compact community design, land-use organization, and regulatory controls that guide implementation are also significant, as well as design and policy that address healthy eating and access to healthy food.

## Physical Setting

California's Central Valley is divided into two principal sections: the Sacramento Valley, which extends northward from the Sacramento-San Joaquin Delta and the City of Stockton to the foothills at Redding, and the San Joaquin Valley, which extends southward from the Delta toward Bakersfield and the Tehachapi Mountains. It is home to over 7 million people and is expected to grow to nearly 11 million by 2020. While much of this growth will occur in major urban centers, such as Sacramento, Modesto, and Fresno, small towns in the Valley have absorbed, and will continue to absorb, some of the annual 680,000 new residents in California. Ensuring that these small towns are healthy, pedestrian-oriented places should be an essential component of a larger statewide strategy.

Small Valley towns share many similar physical characteristics: many were initially developed by the Southern Pacific Railroad in the early 20th century as places that were compact, highly connected and pedestrian oriented, and thus facilitated physical activity as a central component of daily life. Communities were often designed as a set of streets and blocks in a gridiron pattern that fanned out from the railroad stations at their centers, and initial "plats" were often limited to subdivisions of 160 acres, placing all limits of development within ¼ mile – a 5-minute walk for most residents – to and from transit and primary commercial and institutional services.

Today, despite what urban designers refer to as "good bones," many of these communities, like others around the state and the nation, have failed to nurture their beginnings as fundamentally walkable places. As many of them have grown, new homes and services have been built with little or no regard for pedestrian activity or access, and built patterns tend to favor transportation by automobile over other modes. Sidewalks, narrow streets, and good connectivity are all important components of walkable environments that conventional subdivisions lack. While historic commercial centers have declined, new commercial areas have been built almost entirely as single-use, auto-oriented districts. Land-use patterns have also had a detrimental effect. New schools, for example, may be built on large parcels in edge areas with little or no pedestrian access, forcing most families to resort to driving or busing their children to and from school. The segregation of land use into single-use areas has further exacerbated problems of pedestrian connectivity and walkability.

Valley towns also suffer from harsh climate conditions, with intensely hot summers and cold winters that are not necessarily conducive to outdoor activity. Increased driving has contributed to reduced air quality, particularly in the summertime, which in turn has limited strenuous physical activity, particularly for those with existing respiratory conditions.



*Above: Despite pedestrian-oriented origins, many Valley communities suffer from inadequate infrastructure for pedestrians and bicyclists that can discourage physical activity.*

## Demographic Setting

The California's Central Valley, and in particular the San Joaquin Valley, is home to some of the nation's poorest individuals. In 2007, six of the Valley's eight counties had some of the highest poverty rates in the U.S. With low levels of car ownership, many residents actively seek to walk and bicycle to meet their daily transportation needs. Proper places for recreation and exercise are absent for many of those living in poverty. While the San Joaquin Valley is one of the most important agricultural regions in the country, many residents lack easy or affordable access to the healthy foods cultivated there.

## Key Health Issues

As the physical forms of Valley communities have changed, general health conditions in this region and elsewhere in the United States have worsened. During the past four decades, the percentage of children ages 6 to 11 who are obese has more than quadrupled (from 4.2% to 17%), and obesity prevalence has more than tripled for adolescents ages 12 to 19 (from 4.6% to 17.6%).<sup>1</sup> Obesity and overweight rates for fifth-, seventh-, and ninth-graders in the San Joaquin Valley range from 29.6 percent (San Joaquin County) to 33.6 percent (Merced County), according to 2004 data, the most recent available.<sup>2</sup> The increase in obesity has occurred as the number of California children who walk or bicycle to school has plummeted – while 66 percent of children walked or bicycled to school in 1974, by 2000 this number had fallen to 13 percent.<sup>3</sup> Among adults, obesity rates in California have also risen from less than 10 percent in 1987 to 24.3 percent in 2008,<sup>4</sup> while the number of vehicle miles traveled (VMT) has grown 34 percent, three times faster than the population growth rate.<sup>5</sup>

These trends are mirrored in other, more serious health conditions. Obese children and adolescents may experience immediate consequences, such as cardiovascular disease and psychological stress, and may be at risk for weight-related health problems in adulthood. As more children become obese, type 2 diabetes—a disease that was once called “adult-onset diabetes” and can lead to blindness, loss of feeling and circulation in the extremities, amputations and death—is being found in younger and younger age groups.<sup>6</sup> The financial consequences also are significant: a recent analysis revealed that the economic costs of obesity, overweight and physical inactivity in California amount to a staggering \$41 billion per year in terms of health care costs and lost productivity, with \$4.1 billion of that coming from 8 San Joaquin Valley counties alone.<sup>7</sup> The San Joaquin Valley has one of the worst air quality ratings in the nation, which has led to an increase in the rates of asthma among both adults (12% increase) and children (15% increase) between 2001 and 2005. Today, California residents spend over 90 percent of their time indoors.

Given that the environment is such an important factor, creating healthier communities requires action at all levels. Policy actions that impact the planning arena are necessary to eliminate the barriers to physical activity and healthy eating options and provide more opportunities for children and families to engage in active living and healthy eating.



**Top and middle:** Childhood obesity is on the rise due to a number of factors, including limited access to healthy foods and few safe places to play. **Bottom:** In addition, traffic congestion and increased VMT contribute to poor air quality and are major sources of greenhouse gas emissions.

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**Related Environmental Concerns**

The impact of greenhouse gases (GHG) on climate change, and their relationship to land use have been the subject of much recent research, including the 2007 seminal study “Growing Cooler” by Reid Ewing and others. While California Assembly Bill 32 sets targets for the production of greenhouse gases, State Bill 375 embraces this connection by calling for reductions in vehicle miles traveled (VMT) and changes in land-use patterns in order to meet targeted reductions in the production of greenhouse gases. Climate change is a very serious matter for the Central Valley, which accounts for over 12 percent of total agricultural production in the United States. Recent climate trends indicate higher temperatures and drier conditions that may threaten the future of agriculture within the region, which could have a significant economic impact, both locally and nationally.

At a local level, this report seeks to recognize the ways in which modest changes in our built environment can contribute to the reduction of VMT and GHGs, and the subsequent potential for improved public health. For example, 30 percent of rush-hour traffic in many locales consists of parents driving their children to school. By encouraging safe routes for children to walk and bicycle to and from school, communities may effectively reduce their VMT, reducing air pollution and GHG production, while simultaneously promoting public health and exercise.

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**Toolkit Components**

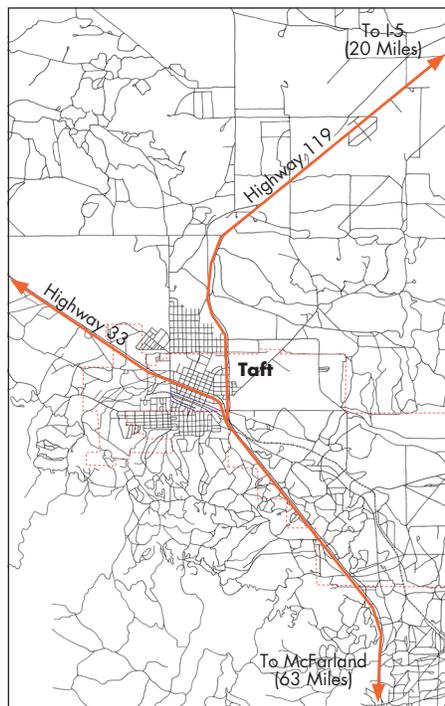
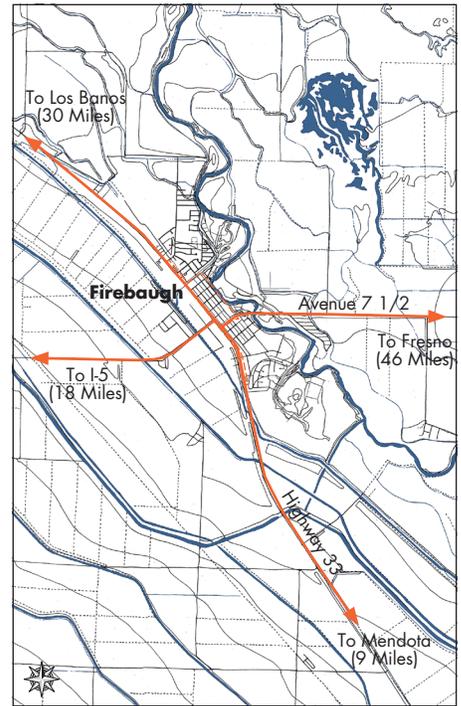
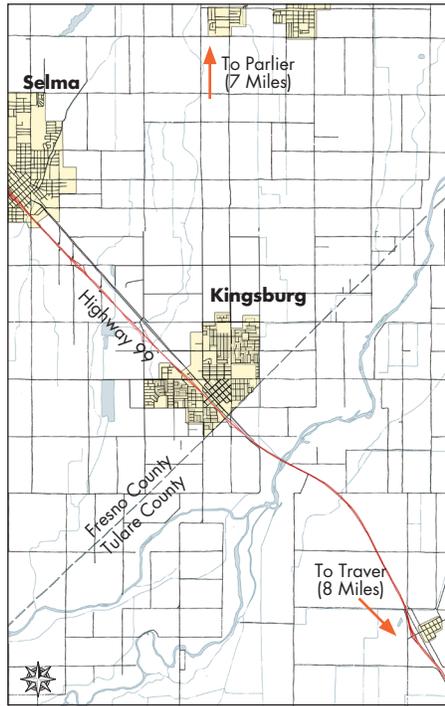
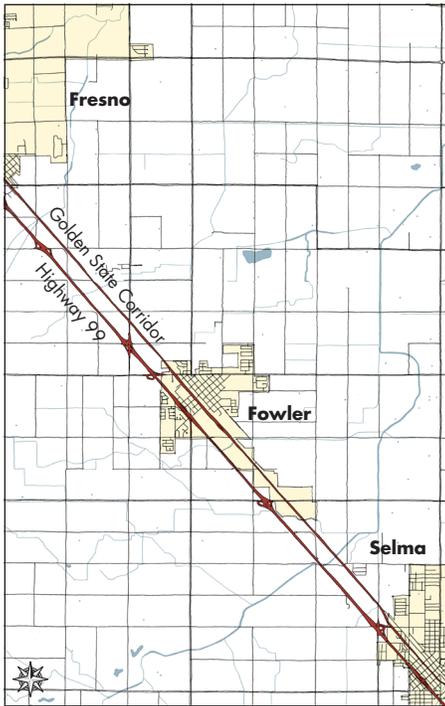
Exemplary projects and their related community design tools are organized using the Congress for the New Urbanism’s Charter as a framework. At the scale of the metropolis, city and town, recommendations focus on large-scale frameworks that can promote health and exercise, land-use and subdivision patterns that promote connectivity and pedestrian access, and provide alternative forms of transportation. Examples draw from several San Joaquin Valley communities, including Firebaugh, Fowler and Kingsburg.

At the scale of the neighborhood, district and corridor, recommendations emphasize the importance of neighborhood scale and organization in order to promote walkability. This section focuses primarily on the San Joaquin Valley community of Taft, and their ongoing efforts to develop a downtown neighborhood on the site of a former rail yard.

At the scale of the street, block, and building, recommendations focus on the detailed elements that promote a high-quality pedestrian environment. This section focuses primarily on the San Joaquin Valley community of Delano, and their plans for 11th Avenue in the context of the downtown.



*Above: Images from Fowler, Taft and Delano show the various scales that the design team studies.*



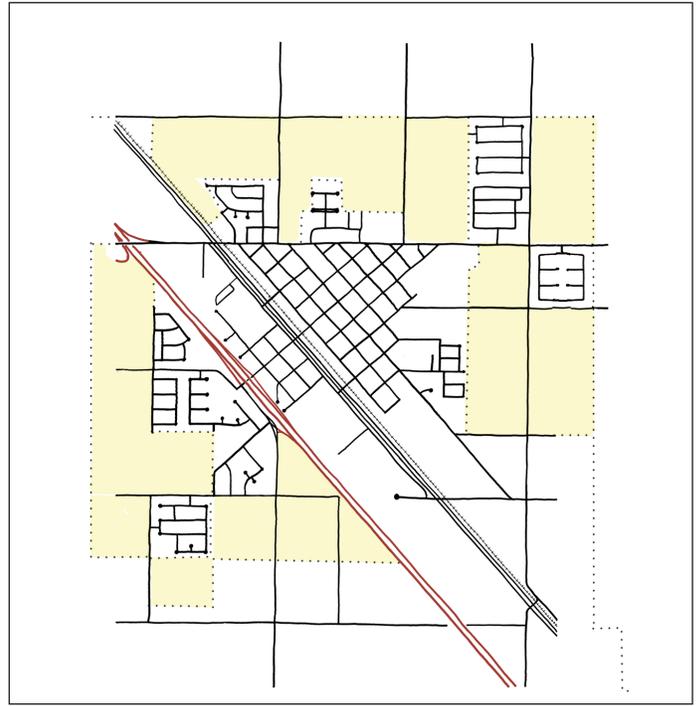
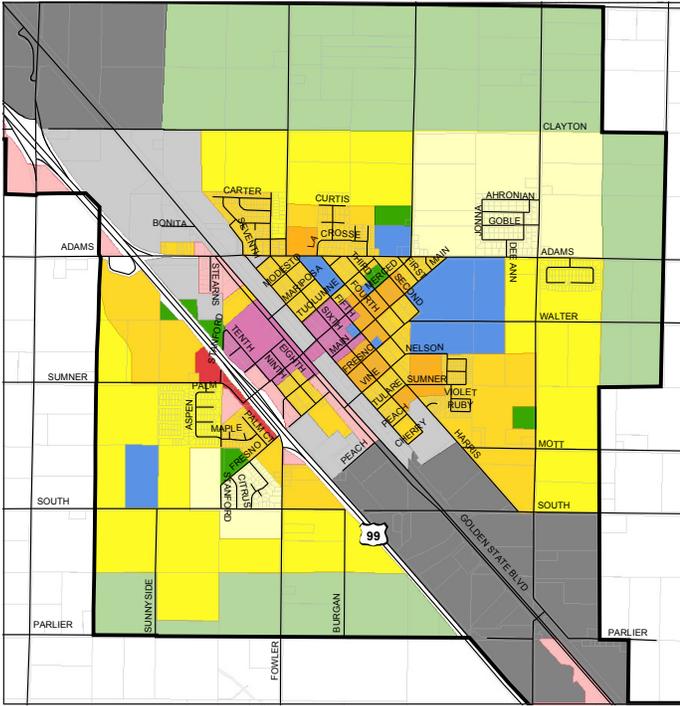
*Clockwise from top left: The communities of Fowler (population 5,300), Kingsburg (population 11,240), Firebaugh (population 6,740), Taft (population 18,000) and Delano (population 53,972).*

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## The Metropolis, City and Town

1. *Metropolitan regions are finite places with geographic boundaries derived from topography, watersheds, coastlines, farmlands, regional parks and river basins. The metropolis is made of multiple centers that are cities, towns and villages, each with its own identifiable center and edges.*
2. *The metropolitan region is a fundamental economic unit of the contemporary world. Governmental cooperation, public policy, physical planning and economic strategies must reflect this new reality.*
3. *The metropolis has a necessary and fragile relationship to its agrarian hinterland and natural landscapes. The relationship is environmental, economic and cultural. Farmland and nature are as important to the metropolis as the garden is to the house.*
4. *Development patterns should neither blur nor eradicate the edges of the metropolis. Infill development within existing urban areas conserves environmental resources, economic investment and social fabric, while reclaiming marginal and abandoned areas. Metropolitan regions should develop strategies to encourage such infill development over peripheral expansion.*
5. *Where appropriate, new development contiguous to urban boundaries should be organized as neighborhoods and districts, and be integrated with the existing urban pattern. Noncontiguous development should be organized as towns and villages with their own urban edges, and planned for a jobs/housing balance, not as bedroom suburbs.*
6. *The development and redevelopment of towns and cities should respect historical patterns, precedents and boundaries.*
7. *Cities and towns should bring into proximity a broad spectrum of public and private uses to support a regional economy that benefits people of all incomes. Affordable housing should be distributed throughout the region to match job opportunities and to avoid concentrations of poverty.*
8. *The physical organization of the region should be supported by a framework of transportation alternatives. Transit, pedestrian and bicycle systems should maximize access and mobility throughout the region while reducing dependence upon the automobile.*
9. *Revenues and resources can be shared more cooperatively among the municipalities and centers within regions to avoid destructive competition for tax base and to promote rational coordination of transportation, recreation, public services, housing and community institutions.*



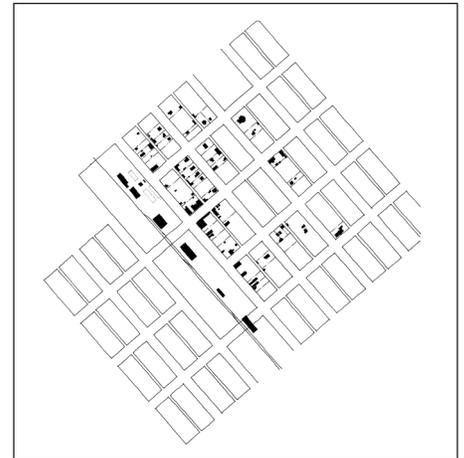
## Introduction

Opticos Design collaborated with the Local Government Commission on three community-driven revitalization plans for the communities of Fowler, Kingsburg and Firebaugh (in Fresno County). These three communities share several physical conditions that, if improved and/or built upon, could provide an appropriate framework for the promotion of healthy lifestyles at the citywide (or city design) level. Ensuring large-scale connectivity and maximizing internal connectivity are important at this scale, and policy action to encourage positive developments can be taken in general and comprehensive plans and in zoning regulations.

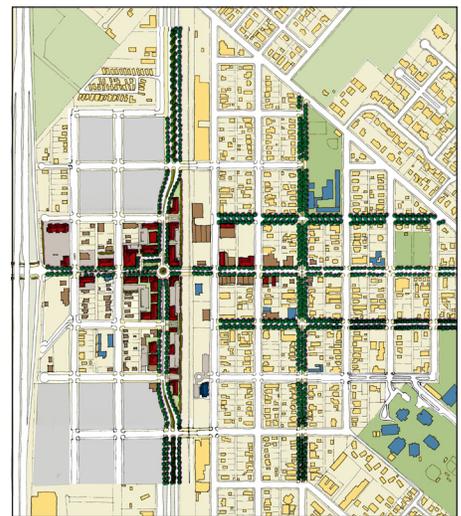
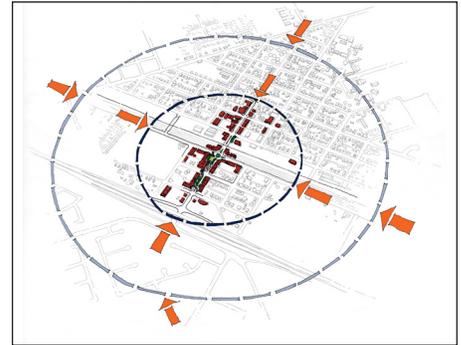
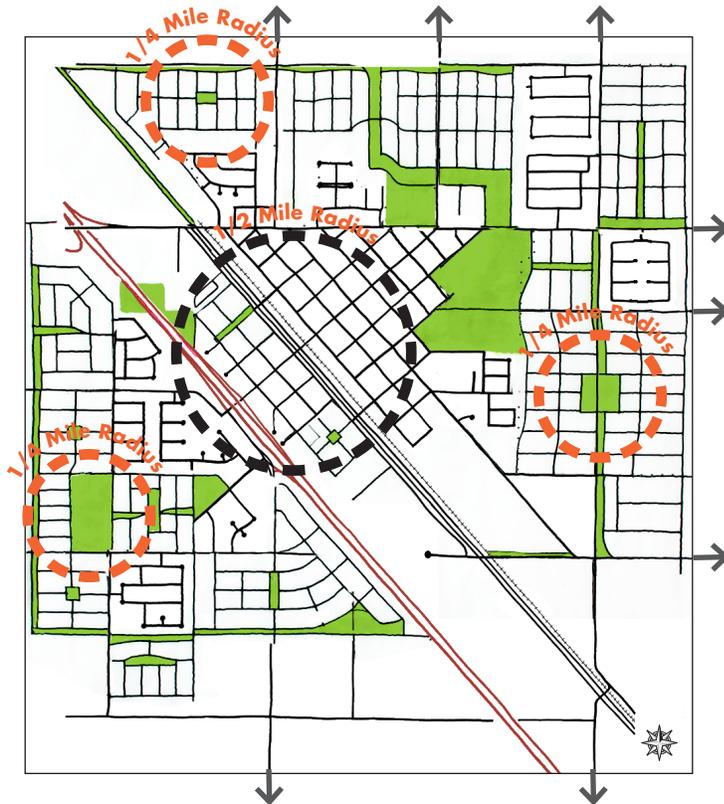
## Large-Scale Connectivity

Each of these communities was historically very compact – in the case of Fowler and Firebaugh, each less than ½ mile across and surrounded by agricultural fields. In the face of modest growth, all three communities expanded their spheres of influence into the surrounding farmland and projected the growth of new subdivisions and commercial areas over time.

Fowler's 1999 General Plan, for example, anticipated a managed rate of growth of 2 to 3 percent per year, and estimated 2,000 to 3,000 new residents by 2025. New growth tended to occur in a piecemeal fashion with little regard for connectivity – a subdivision over here, another over there. Residents of these newer neighborhoods had few, if any, well-designed connections to their pedestrian-oriented downtown, and often found it safer and more convenient to travel to auto-oriented retail districts in nearby communities by car rather than patronize local businesses, despite the fact that downtown was not more than one mile away from most new neighborhoods. In order to



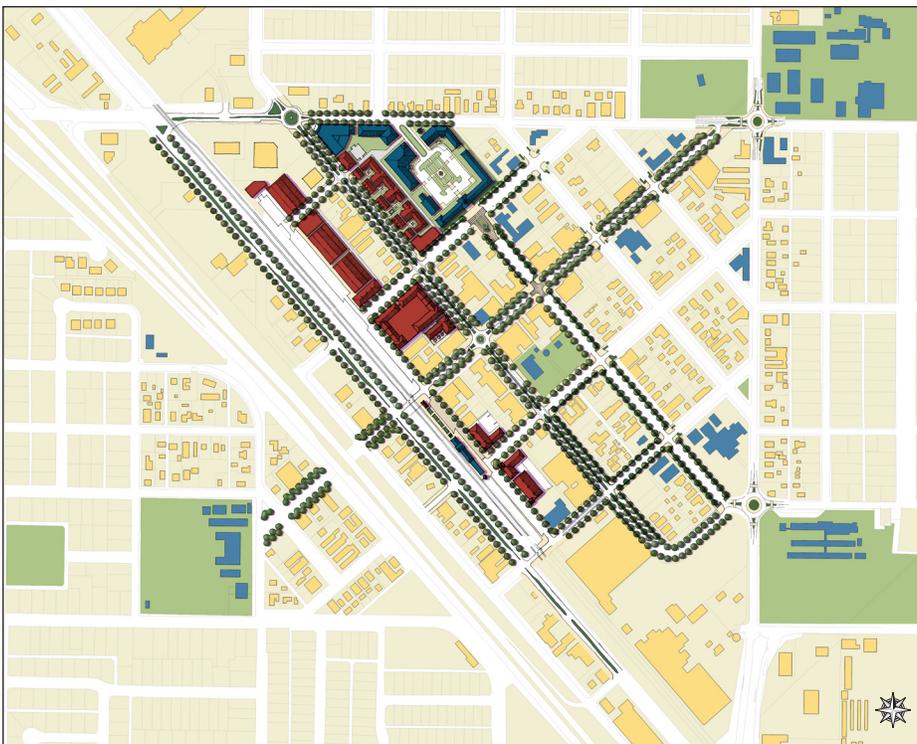
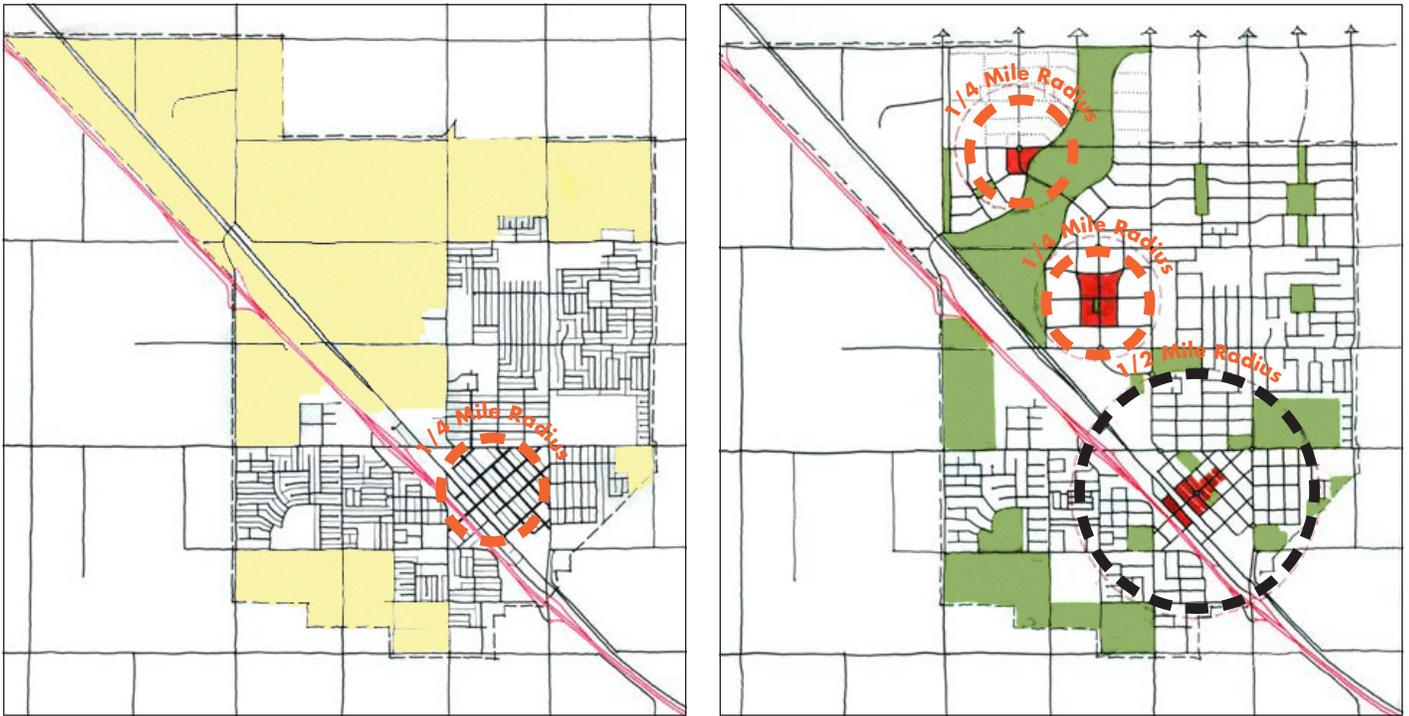
*Above, left: Land use map from Fowler's 1999 General Plan that illustrates new development areas within its sphere of influence. Above, right: Simplified map illustrates the extent of potential new development area, which has already begun to occur as a series of segregated, disconnected subdivisions. Above: Historic map of Fowler in 1896 illustrates original compact form and layout.*



help maintain the importance of downtown Fowler within the larger community and ensure that new areas developed with a high degree of connectivity, the design team explored development frameworks and design concepts for land at the periphery. The design team provided the following recommendations:

- Neighborhoods and new subdivisions should be encouraged to set aside open spaces and greenways that can form portions of larger contiguous networks. These linear spaces can be used to improve environmental conditions, provide effective storm water management, air filtration and buffers from nearby industrial and agricultural uses, and create expanded exercise loops for bicyclists, walkers, and joggers.
- Major bicycle and pedestrian connections connecting downtown Fowler with its outlying neighborhoods should be maintained, ensuring that distances up to one mile – a 20-minute walk for most – can be walked with ease and convenience. Well-designed pedestrian paths and bicycle lanes can facilitate easy travel to and from the downtown.
- As the city grows, new development should be organized to create neighborhood centers of activity that are oriented and well-connected to their surrounding residential areas. Although it is unlikely that a city of this size (5,000 people) could support additional commercial areas beyond very modest, locally-serving nodes, new services and institutions such as schools should be organized to provide central gathering places for neighborhoods or groups of neighborhoods. This will ensure that at least a portion of daily needs, including trips to and from school, can be accomplished through walking and biking trips.

*Above, left: Diagram illustrating model development of new neighborhoods, with neighborhood centers (shown with 1/4 mile walking radii in red) and linear greenways. Such a greenbelt could create an “exercise loop” of 6-10 miles for walkers, bicyclists and joggers. Above, right: Bird’s-eye diagram of Fowler highlighting the central role East and West Merced Street can play in the city. Above : Long-term illustrative framework plan for Fowler.*



*Above, left:* Map of Kingsburg illustrating existing street network overlaid with undeveloped areas (in yellow) that are expected to develop by 2025. *Above, right:* Similar explorations for the community of Kingsburg illustrate model development of new neighborhoods, with neighborhood centers (shown with 1/4 mile walking radii in red) and linear greenways. The diagram envisions a multi-way boulevard that links the edge of town with the historic town center, providing a primary address for new public parks, community schools, and neighborhood-serving retail districts along the way. *Left:* Illustrative vision plan displaying potential long-term improvements for Kingsburg.

The San Joaquin Valley provides ideal environments for bicycling for a variety of skill levels and intensities, as it contains large expanses of flat terrain. In Fresno County, several communities had discussed the possibility of an intercity bicycle path along the Southern Pacific Railroad right-of-way and the Golden State Highway (former State Route 99). Such intercity routes would allow residents to make trips of 4-6 miles between nearby whistle-stop towns (such as Fowler, Selma, and Kingsburg) along dedicated Class I (separated bike path) facilities.

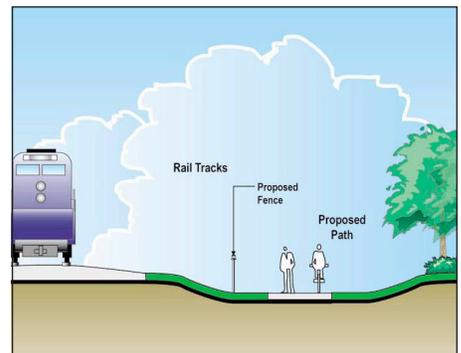
### Internal Connectivity

All three communities provided opportunities to apply similar principles to their existing historic cores with regards to connectivity. Kingsburg and Fowler are quite similar in that the community's schools form a ring around the historic downtown. With very little traffic on downtown streets, the design team envisioned a continuous network for pedestrians and bicyclists that would connect these primary institutions and provide an alternative means to auto-oriented travel across town, promoting health and exercise. For many smaller Valley communities, existing athletic facilities at local schools provide the only opportunity for community recreation.

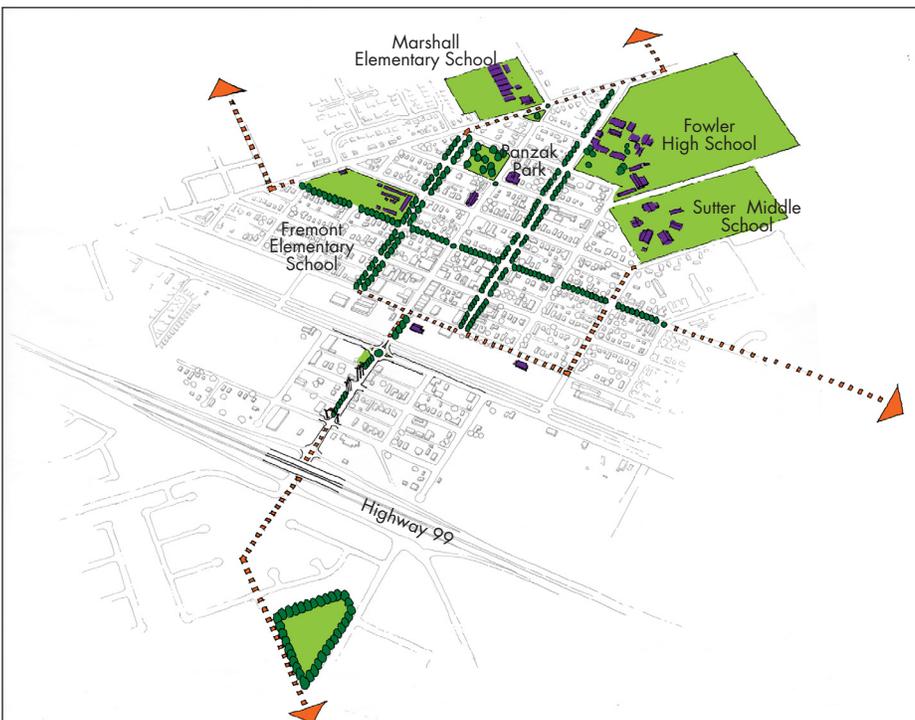
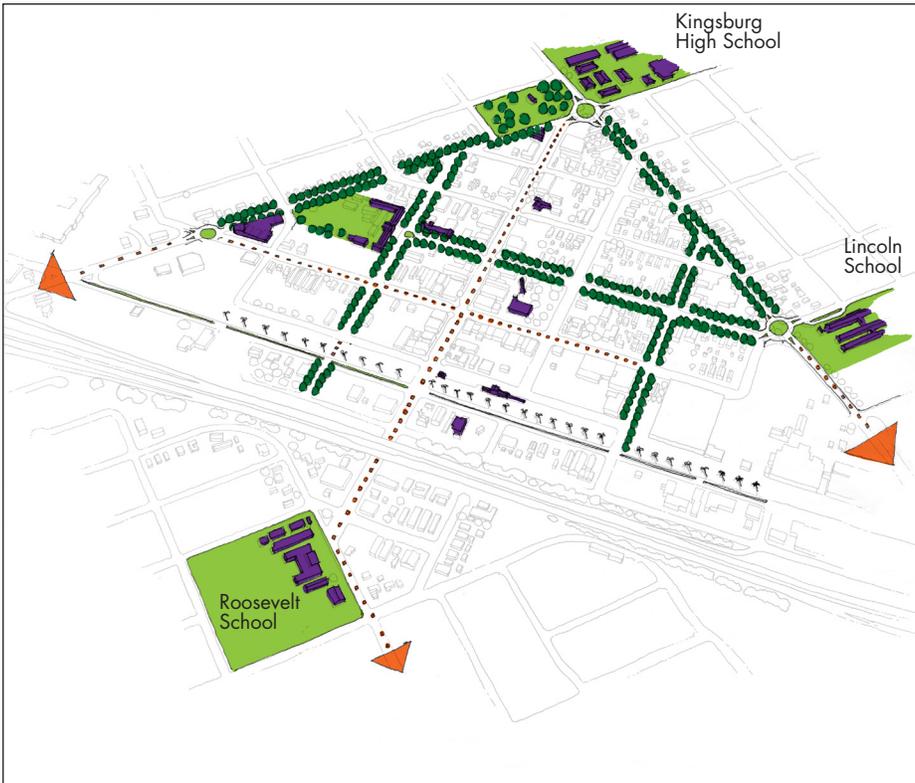
In the case of Fowler, select streets were combined to develop a two-mile loop for walkers, joggers, and bicyclists that would pass near school athletic facilities, such as the Fowler High School running track; major parks and institutions, such as the historic Panzak Park; and planned community institutions, such as a future library. The proposed loop would be identified by improved sidewalks and intersection crossings for pedestrians, consistent planting of street trees along the route and the integration of well-signed Class 2 (bicycle lane) and Class 3 (bicycle route) facilities.

It can be difficult for residents of Valley communities to exercise outside, particularly during periods of high temperature. Such a network could provide a high-quality system of "green streets" that can assist in providing a comfortable outdoor environment during periods of high temperature. On well-shaded streets in historic Kingsburg neighborhoods, for example, the design team measured nearly a 20-degree difference between ambient sun and shade temperatures during a summertime visit.

Residents have also expressed their desire to exercise after dark, especially during the summer. The network would be designed with appropriate pedestrian-scaled lighting to ensure safety, and would pass in front of buildings along the way, with windows, doors, and porches oriented onto the trail providing a sense of security and natural surveillance.



*Above (from top to bottom): Example of painted Class II bike lane; conceptual view of corridor design for Rail with Trails; conceptual section of a design for Rail with Trails.*



*Clockwise (from top left) Bird's-eye view of Kingsburg looking east across Highway 99, highlighting the primary travel routes for bicyclists and pedestrians into the central portion of the city; Conceptual rendering illustrating how new residential development can provide continuous public access along Firebaugh's waterways; View of potential riverside improvements at the foot of 9th Street in Firebaugh; Bird's-eye view of Fowler looking north-east across the town highlighting the potential network accommodating bicycle and pedestrian movement.*

### Implementation Tools

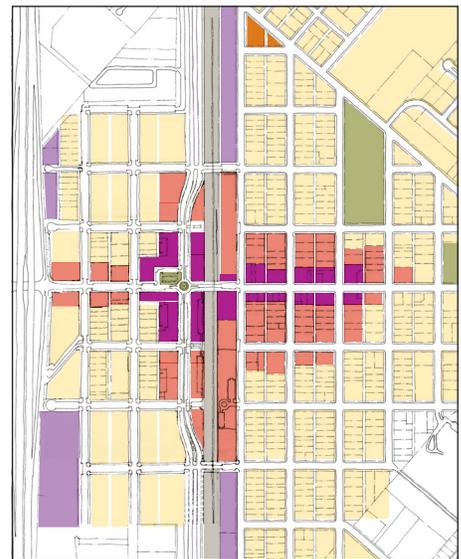
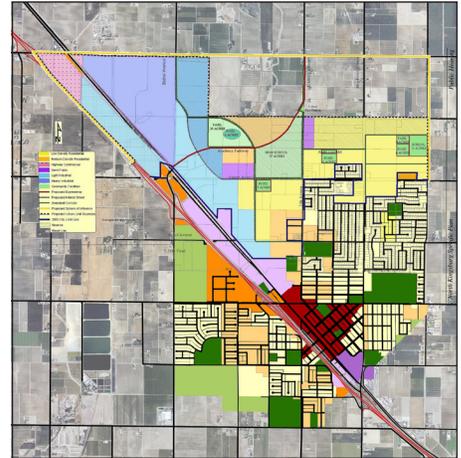
Communities should consider several tools to integrate pedestrian connectivity and walkability at the citywide scale.

### General Plans and Comprehensive Plans

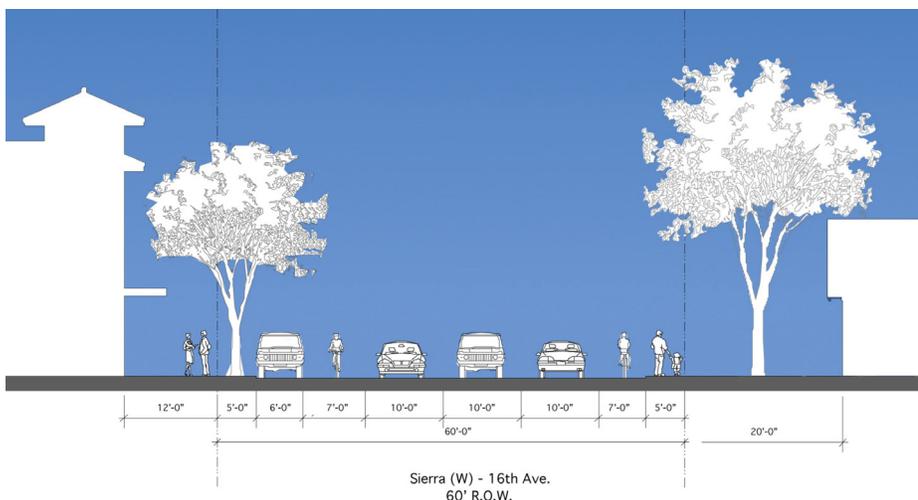
General plans, when updated, should emphasize the creation of place, particularly with regards to the organization of land use in new areas to ensure that new development can occur as mixed-use neighborhoods rather than single-use subdivisions. An approach to land use can be integrated with changes to zoning that can legalize and implement healthy mixed-use areas, and large-scale frameworks and greenways can be established through the Circulation Element.

### Zoning Regulations

Nearly all communities in the Valley utilize older subdivision ordinances and related public works standards (i.e. street design) that fail to support healthy lifestyles and walkable urban form when developing new land at the periphery. In the case of Fowler, Kingsburg and Firebaugh, for example, the subdivision ordinance encouraged disconnected patterns of curvilinear streets and cul-de-sacs in new residential developments, and subdivisions were actually required to orient away from arterial streets through the construction of sound walls that create difficult environments for pedestrians along primary routes. In recent years best practice standards have evolved to support pedestrian activity. Many communities are working to promote better development patterns through the adoption of subdivision ordinances that utilize traditional neighborhood development (TND) design principles and require minimum standards of connectivity, neighborhood organization and land-use mix.



*Above, top: Kingsburg General Plan land use map. Above, below: Conceptual regulating plan for central Fowler. Left: Proposed street section for Sierra Street and State Route 201 in Kingsburg.*



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## The Neighborhood, District and Corridor

1. *The neighborhood, the district and the corridor are the essential elements of development and redevelopment in the metropolis. They form identifiable areas that encourage citizens to take responsibility for their maintenance and evolution.*
2. *Neighborhoods should be compact, pedestrian-friendly and mixed-use places. Districts generally emphasize a special single use, and should follow the principles of neighborhood design when possible. Corridors are regional connectors of neighborhoods and districts; they range from boulevards and rail lines to rivers and parkways.*
3. *Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Inter-connected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips and conserve energy.*
4. *Within neighborhoods, a broad range of housing types and price levels can bring people of diverse ages, races and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community.*
5. *Transit corridors, when properly planned and coordinated, can help organize metropolitan structure and revitalize urban centers. In contrast, highway corridors should not displace investment from existing centers.*
6. *Appropriate building densities and land uses should be within walking distance of transit stops, permitting public transit to become a viable alternative to the automobile.*
7. *Concentrations of civic, institutional, and commercial activity should be embedded in neighborhoods and districts, not isolated in remote single-use complexes. Schools should be sized and located to enable children to walk or bicycle to them.*
8. *The economic health and harmonious evolution of neighborhoods, districts and corridors can be improved through graphic urban design codes that serve as predictable guides for change.*
9. *A range of parks, from tot-lots and village greens to ballfields and community gardens, should be distributed within neighborhoods. Conservation areas and open lands should be used to define and connect different neighborhoods and districts.*



### Introduction

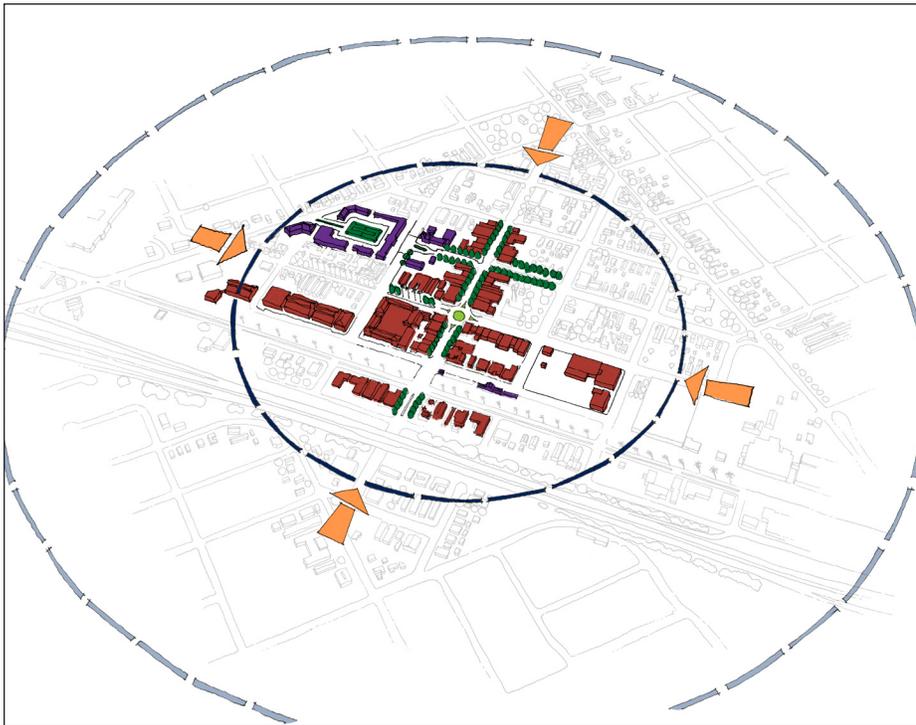
The most important healthy community issue that can be addressed at this scale is the creation of pedestrian-friendly neighborhoods. Amenities and services should be integrated into neighborhoods, and appropriate building densities should be used to ensure that walking or using transit is an option for everyone. Revising zoning regulations, and utilizing Form-Based Codes in particular, are useful ways to promote these goals.

### Walkable Neighborhoods

Before World War II, U.S. planning principles recognized the importance of neighborhood scale in new growth areas. Street and block patterns tended to encourage walkable arrangements connecting major daily destinations, including schools and shopping centers. Since World War II, however, this issue has largely been ignored as communities have extended outward in a manner that favors vehicular modes of travel. Valley communities have increasingly high percentages of residents who do not drive (either the very young or the very old), and many more who are economically sensitive to fluctuations in personal transportation costs. With relatively low densities and small populations, public transit is typically very limited and simply cannot provide an appealing and viable alternative to driving the way that well-designed pedestrian networks can. Valley communities are ideal places to embrace neighborhood-planning concepts that address new developments at the periphery as well as the revitalization of historic areas.

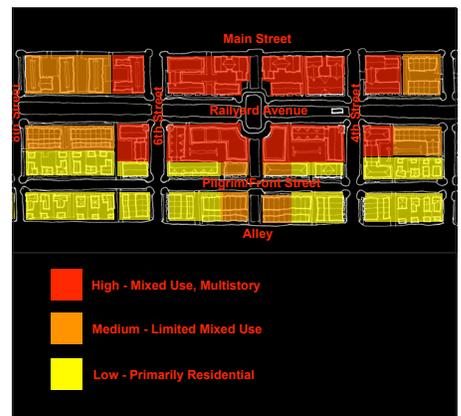
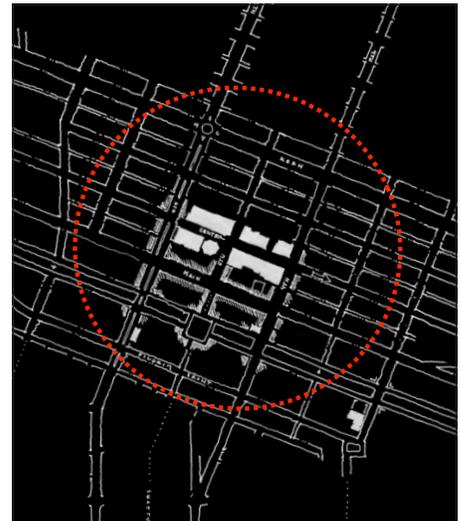
Although more recent planning theory and principles have already returned historical neighborhood concepts to the forefront, outdated standards in many Valley communities have hindered their implementation.

*Above, left: Illustrative vision plan for Firebaugh illustrating potential long-term improvements. Above, right (from top to bottom): Rails-to-trails in Taft; Teenagers walk side by side in a Central Valley town.*

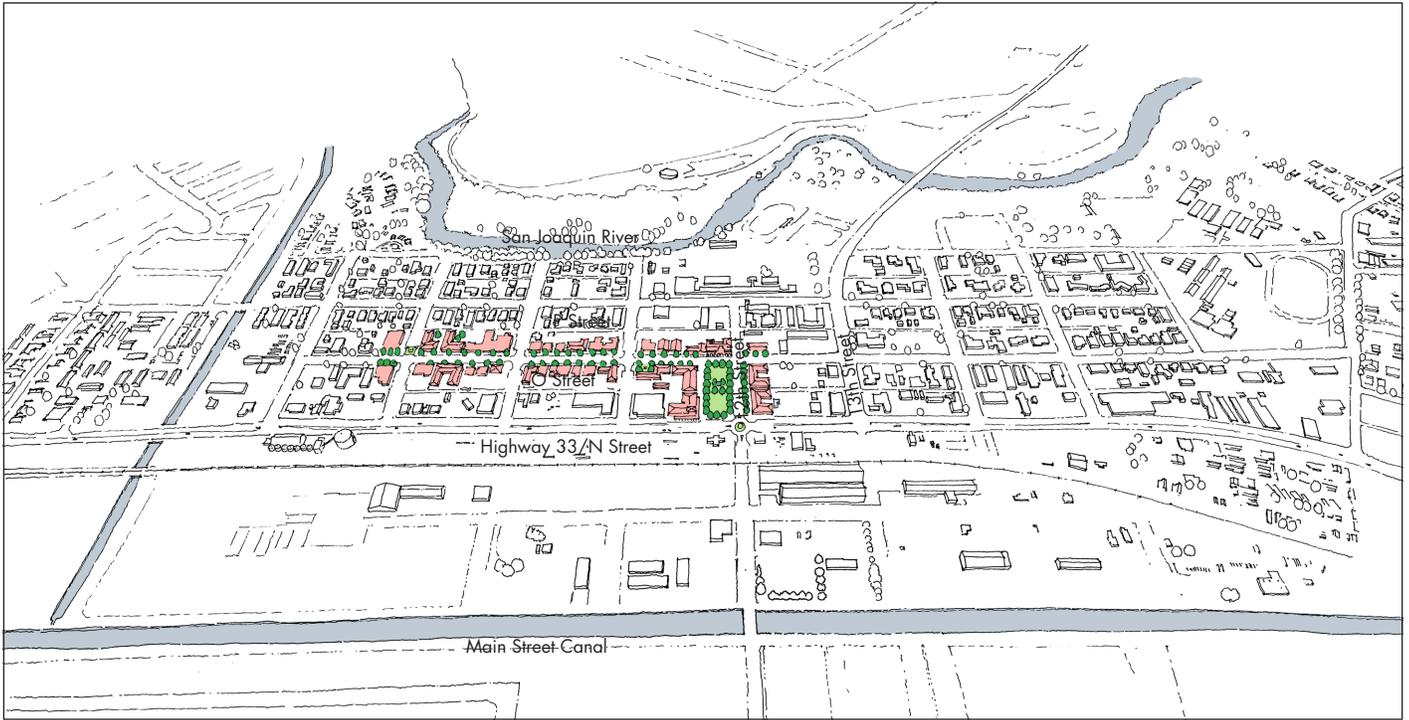


### Maintaining Centrality

Much recent attention has been directed toward rethinking downtown business districts, moving them away from single-use commercial centers and toward walkable mixed-use neighborhoods. Small Valley communities often have a central mixed-use downtown that dates from their inception, composed of a fine-grained mixture of commercial buildings along an interconnected network of streets and blocks. As these communities have grown in size and scale, downtown neighborhoods have struggled to keep pace with newer regional shopping centers in suburban, auto-oriented districts. Deferred maintenance of historic structures has furthered walkable neighborhoods' decline. Despite these setbacks, many continue to be surrounded by a stable housing stock within an easy walk of downtown amenities. With an infusion of downtown residents and urban design improvements that encourage access to downtown via walking and bicycling, Valley downtowns can be encouraged to function as small-scale mixed-use neighborhoods that place a variety of housing opportunities and services within walking distance.



*Above, left:* Bird's-eye view of Kingsburg looking northeast across town, illustrating the central commercial core in relationship to the larger downtown area. The rings represent a five-minute and a ten-minute walk extending from the center of town. *Above, right (from top to bottom):* Diagram showing the downtown commercial core of Taft with the red circle denoting a five-minute walking radius; Plan for Taft showing that density should be focused at the center of town and extending out along Railyard Avenue.



This approach to downtown revitalization is visible in the Valley communities of Firebaugh, Fowler, Kingsburg and Taft. In the case of Firebaugh, in Fresno County, the historic downtown along O Street had declined since most traffic and visibility moved one block to the west along State Highway 33 in the 1950s. O Street provided space for a few local businesses and some amenities for this community of about 5,000 people. Many residents drove to retail centers nearly 40 miles away in Fresno for shopping and services. Despite the downtown's decline, it was surrounded by stable residential neighborhoods and easily reachable by foot or bicycle.

The community commissioned a market analysis that identified the retail leakage to nearby communities and considered the development of a commercial strip mall further to the south along Highway 33. Although such a strip mall would have helped to provide additional services to the community, it would have risked competing with the O Street retail environment. Moreover, it would have been oriented in such a way that few residents would be encouraged to reach it by foot or bicycle.

The design team worked with the community to identify a solution for the downtown's revitalization that would capitalize upon its setting within a walkable mixed-use neighborhood and seek to solve some of the physical constraints that had limited its healthy development in the past. The city first considered new housing within the downtown through recommended changes to the zoning ordinance that facilitated mixed use.



*Above:* Bird's-eye view of Firebaugh looking east across the town towards the San Joaquin River and highlighting focus area for a compact town center. *Below:* Example of entry sign that could be located along the highway at the intersection of Morris Kyle Drive.



In order to provide visibility along the state highway, O Street was reoriented toward Highway 33 through the creation of a new public plaza between 11th and 12th Streets, lined with new mixed-use buildings combining retail, housing and office, including a new city hall. The square was designed to provide a strong anchor for the southern end of O Street and a viable setting for community festivals and a weekly farmers' market, as well as a primary address for additional retail that would have gone into the nearby strip mall. On-street parking around the square would provide an opportunity to encourage travelers to "park once," and patronize both new and existing businesses within a comfortable pedestrian environment. With increased visibility, downtown Firebaugh could sustain additional businesses, and in turn provide more amenities to its local downtown neighborhoods.



*Above:* Illustrative view of proposed plaza in central Firebaugh from Highway 33. A new city hall sits at the eastern end of the plaza, and the plaza is anchored by a fountain (in the foreground) and a bandstand (in the background). Two- and three-story mixed-use buildings line the north and south sides.



The community of Fowler in Fresno County faced a similar dilemma with their historic downtown along Merced Street. A slow decline has resulted from the cessation of passenger railroad service in the 1960s and the State Highway 99 moving west from its original alignment along Golden State Boulevard. While the community recognized that there was significant retail leakage to other communities, city leaders also considered a new commercial strip mall oriented to and visible from the highway, but not easily reachable from the surrounding downtown neighborhoods. The design team explored the possibility of reorienting the Golden State Boulevard as it passed through the heart of Fowler, creating a new address for mixed-use retail in a highly connected pedestrian-oriented setting.

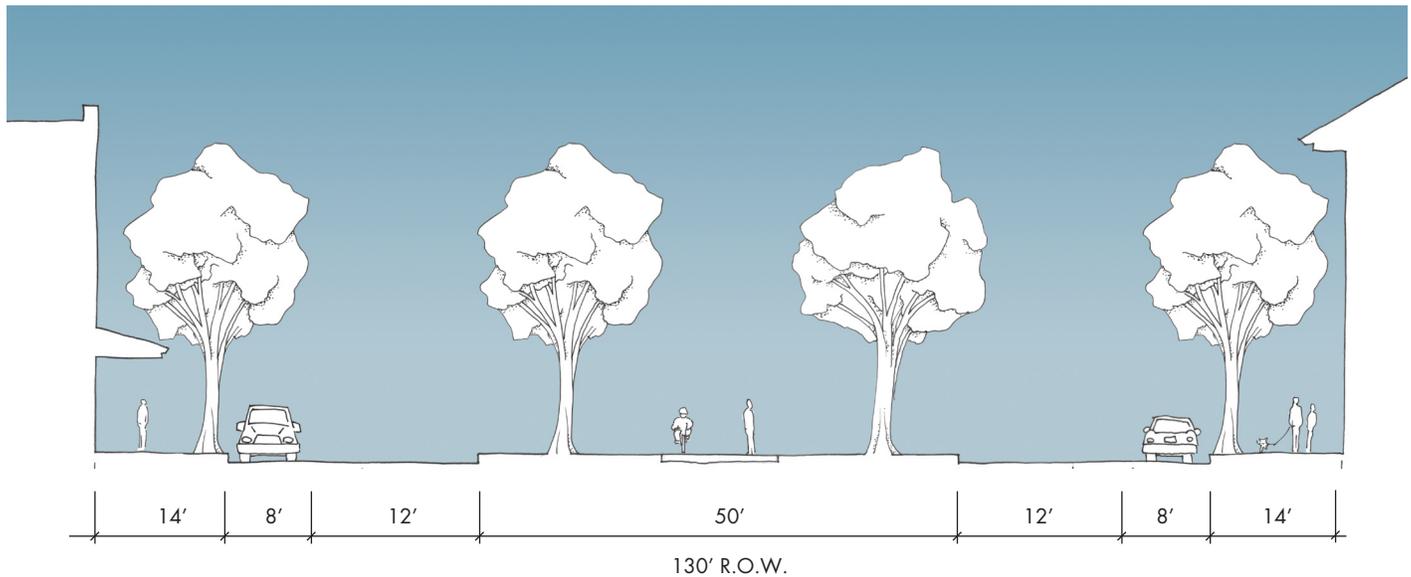
The community of Taft in Kern County is seeking to revitalize its downtown through the development of a 46-acre former railyard immediately adjacent to the historic core. City officials hope to create a healthy and vibrant downtown neighborhood that can return energy to the downtown business environment while providing a high-quality pedestrian-oriented alternative to suburban environments. Through a community-led process, Opticos Design and the Local Government Commission examined the essential components that would contribute to a holistic neighborhood and explored their appropriate organization and relationship to context.



*Clockwise from top left: Aerial view of proposed mixed-use center at the intersection of Golden State Boulevard and Merced Street in downtown Fowler; eye-level vision for Merced Street illustrates new, infill mixed-use buildings that extend the existing downtown walking district toward western neighborhoods; plan view of Fowler proposal.*

### Connections to Downtown

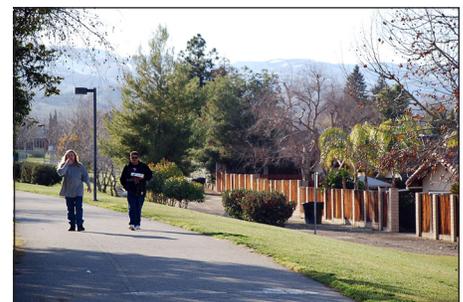
The former Union Pacific railyard had flourished immediately adjacent to the historic downtown that stretched along several blocks of Center Street. Despite a well-connected street grid, the railyard developed with limited connectivity due to the railroad and the needs of large industrial properties. In the latter half of the 20th century the railroad moved to the outskirts of town and the railyard began to decline. Many industrial buildings were torn down. In the early 1990s, city officials converted the former rail right-of-way to a multi-use trail through the Rails-to-Trails program, establishing a first-rate off-street trail corridor that connected outlying neighborhoods to the downtown core.



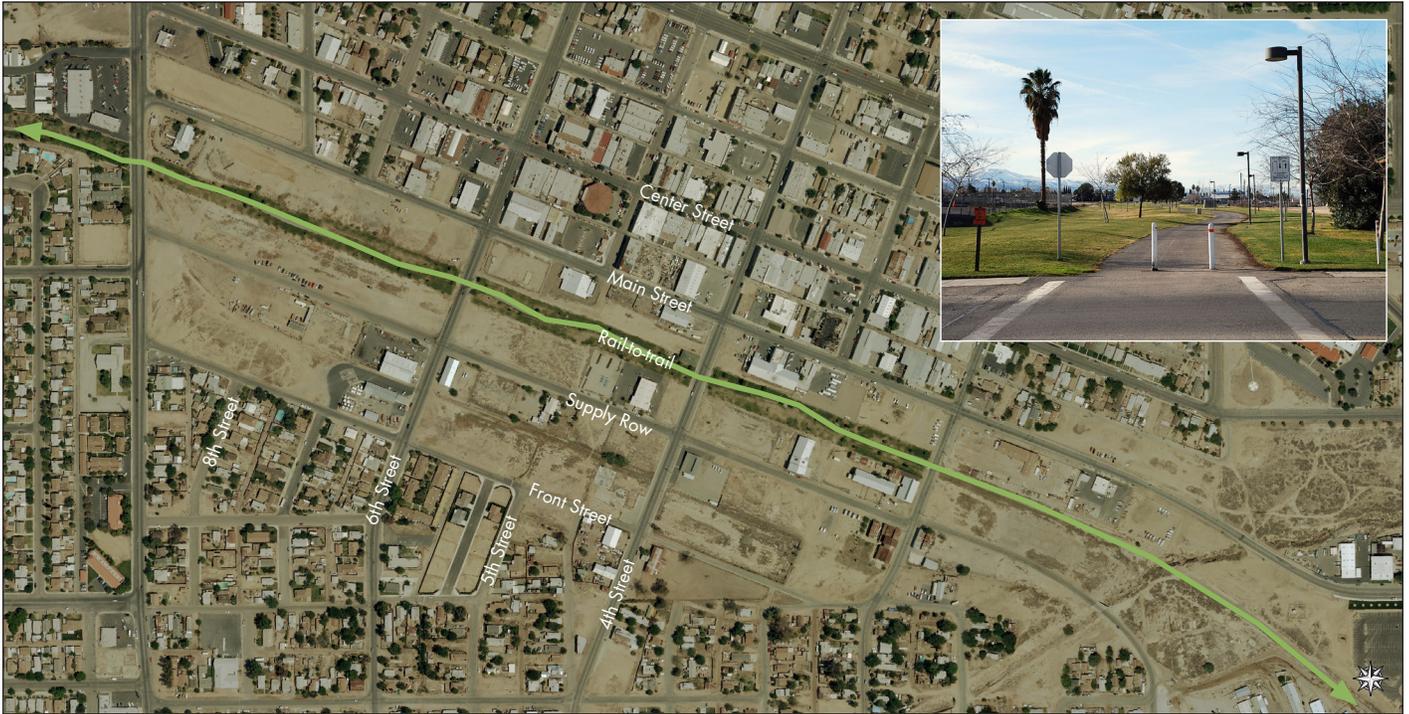
The design team first focused on ways that connections from outlying neighborhoods into the downtown area could be improved in order to increase downtown's viability and potential. Sixth Street and Fourth Street, two primary north-south streets that connect the city of Taft with the neighboring unincorporated communities of Ford City and South Taft, were identified for pedestrian improvements. Sixth Street connects the downtown area and the railyard with a major institutional campus comprising Taft College (a major regional community college), Taft High School and middle and elementary schools, and continues as a primary connector through South Taft. The design team proposed a Class II bicycle lane, consistent street trees, a landscaped median, intersection improvements, and pedestrian amenities for its length to encourage travel between the two areas. Fourth Street provided an opportunity to provide further connections between a principal commercial area, the downtown and railyard, and the historic commercial core of South Taft. It was also appropriate for pedestrian improvements, including wider sidewalks, consistent street trees for shade and intersection improvements to facilitate crossings.

The rail-to-trail represented an opportunity to create a centerpiece for a pedestrian-oriented downtown neighborhood, but it was oriented in such a way that it passed along the rear of many properties. This resulted in an experience that was not always supportive of pedestrian activity. The design team proposed to reorient the trail slightly to the south in order to integrate it into a central avenue for the railyard neighborhood, allowing new development to have an appropriate orientation that would encourage walking and biking. The trail thus became a central feature of the neighborhood and a primary basis for community identity and a variety of civic activities.

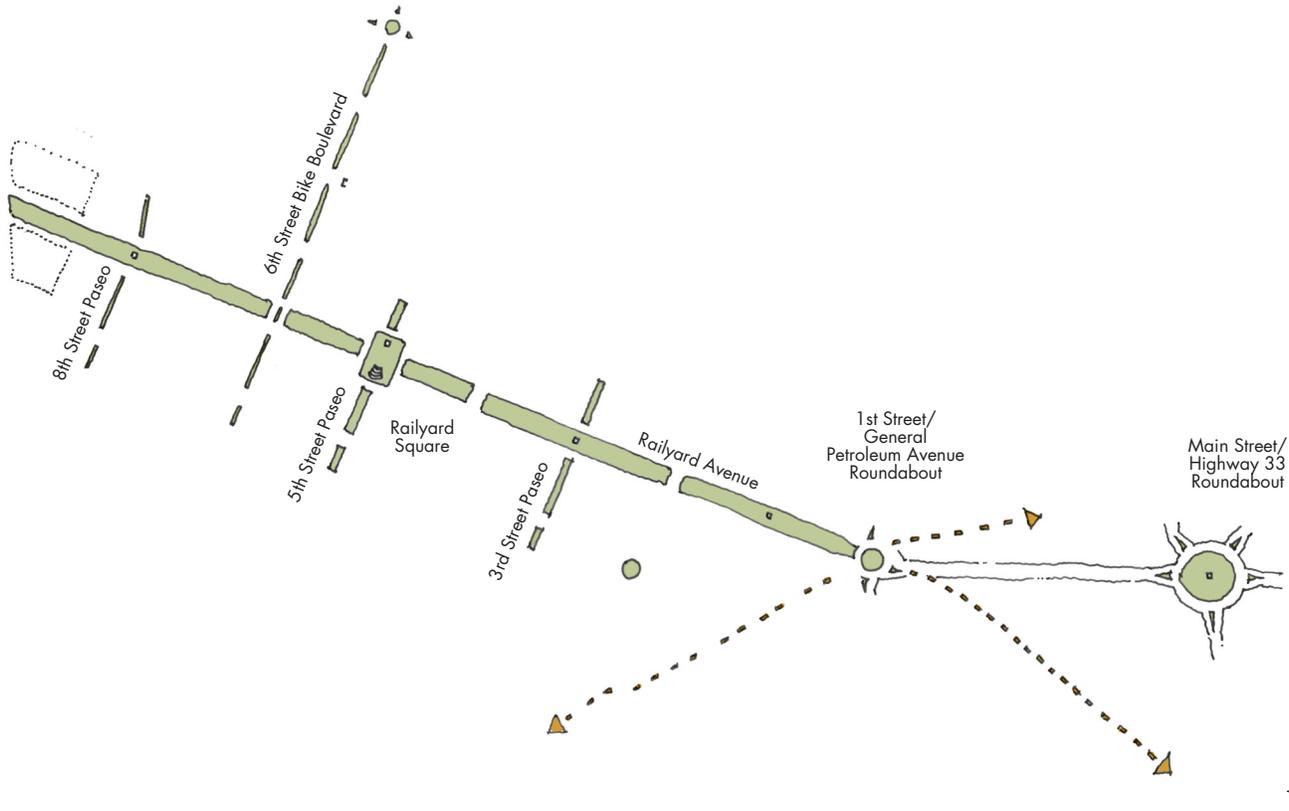
Finally, the design team recommended that the local streets be allowed to connect through the railyard to the greatest extent possible in order to ensure multiple connections to the downtown and the surrounding street grid. Street connections were recommended along Second Street and Eighth Street, and pedestrian through streets, or "paseos," were recommended along Third, Fifth and Seventh Streets.



*Above (from top to bottom): Section of proposed rail-to-trail in Taft showing the reorientated trail integrated into a central avenue for the railyard neighborhood; perspective view of new avenue with rail-to-trail; existing view of rails-to-trails in Taft.*



**Above:** Aerial view of central Taft with the abandoned rail yard site adjacent to downtown, and its existing rail-to-trail path (inset). **Below:** Design proposal for the Railyard neighborhood illustrates its potential as a highly walkable complement to downtown Taft oriented directly to the rail-to-trail path.



### Open Space Networks

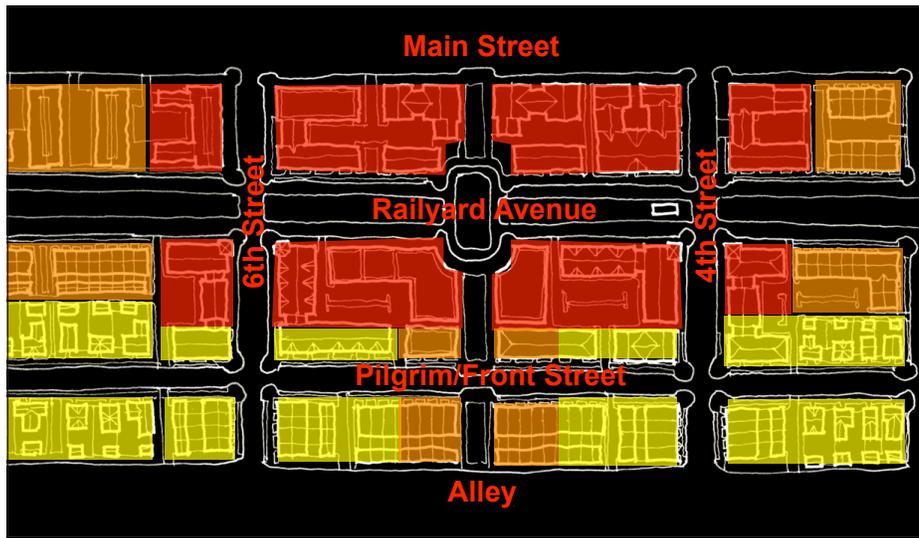
The rail-to-trail path, which was featured along the neighborhood’s main spine, was connected to a larger network of parks, open spaces and public institutions through a series of greenways, paseos and bicycle boulevards. This network extended eastward along Gardner Field Road to a regional open space preserve on the outskirts of the city, providing access to a very large recreational amenity. Such an orientation can assist in creating a community with a strong interest in active pursuits that promote health and exercise. Open space networks also provide “green bands” within neighborhoods that provide wildlife habitat, air-filtering plants and shade.

### Mix of Uses

Land-use organization can be a key factor in promoting daily healthy activities within neighborhoods. Properly calibrated mixed-use environments, which incorporate residential uses and neighborhood services like markets, can provide opportunities for residents to walk or bicycle to meet at least a portion of their daily needs. Taft shared a common dilemma with many small Valley communities in that a standard neighborhood, even within a well-connected downtown area, can only support a limited amount of retail. Neighborhoods also must often establish a critical mass of residents before even a limited amount of retail can become viable. Developers are often aware of these challenges and may be very reluctant to provide non-residential opportunities within a neighborhood. Even if sufficient density is provided, many residents will resort to vehicle trips if daily needs cannot be met within walking distance.



*Above: Illustrative diagram showing the concept of a linear open space system along the proposed Railyard Avenue in Taft. Below: Conceptual rendering illustrating new development with public access and orientation to waterways in Firebaugh.*



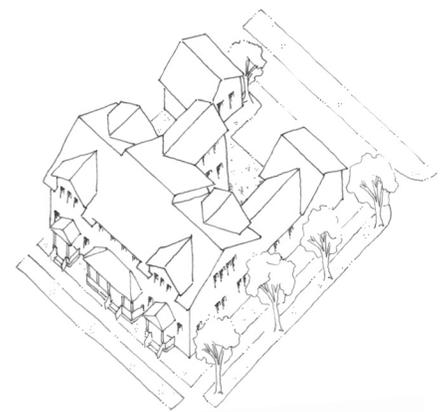
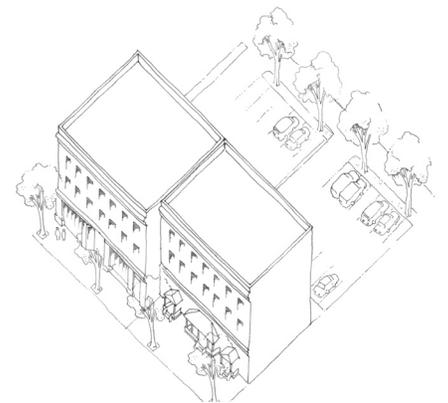
In the case of Taft, the city was also concerned that a mix of uses on the railyard site would ultimately detract from existing downtown business activity. The design team explored ways in which the central core of the site could be developed with mixed-use commercial block building fabric, with retail, offices, and services on the ground floor and residences on upper floors. This area was limited to the two blocks between Fourth and Sixth Streets in order to coordinate with Taft’s existing downtown core and encourage visitors to the area to access both the downtown and the railyard’s commercial services in consolidated walking trips. Coordinated public events in this area, including a proposed weekly Farmer’s Market, could help catalyze neighborhood activity and promote healthy eating habits.

Developers of the railyard were encouraged to reserve the land at the central portion of the site until land values and demand were high enough to justify the construction of relatively intense mixed use.

### Building Types

Neighborhoods can also promote pedestrian activity through a diverse mix of building types. Historic cores of many Valley communities demonstrate a strong tradition of building types, with single family residences often sharing streetscapes with duplexes, mansion apartments typically providing space for 3 or 4 units in the form of a large single family house, and larger courtyard apartment buildings. Such residential fabric helps to provide sufficient densities to support a mix of uses and neighborhood services while maintaining an urban form that is pedestrian-oriented and familiar. As most post-war developments have favored segregating building types into disconnected “pods” consisting of solely single-family or uniform multi-family units, the number of traditional housing types in the Valley and elsewhere in California has decreased. Such building types can provide moderate densities and opportunities for non-traditional households (e.g. single-parent households, households without children, empty nesters) to share neighborhood environments.

In the case of Taft, building types were utilized as a way to organize new development within the railyard neighborhood to ensure a high-quality pedestrian environment.



*Above, left: Diagram for the central portion of the Taft Railyard that illustrates potential organization and intensity of mixed-use. Above, from top to bottom: Diagrams of proposed building types of varying intensity for the Taft Railyard, including multi-story commercial block buildings, “mansion apartment” multi-family buildings and small-lot single family buildings.*

Draft: 01.12.05 Section X.X.X: Section Title

### NC: Neighborhood Center Standards

**Key**  
 --- Property Line  
 --- Build-to Line (BTL)  
 ■ Building Area

Building Placement		Use	
<b>Build-to Line (Distance from Property Line)</b>		Ground Floor	
Front	0' (A)	Service, Retail, or Recreation, Education & Public Assembly*	
Side	0' min., 10' max. (B)	Upper Floor(s)	
Street Side, Corner Lot	0' (C)	Residential or Service* (I)	
<b>Setback</b>		*See Table x.x for specific uses	
Rear		<b>Height</b>	
Adjacent to residential	15' (D)	Building Minimum	16' (J)
Adjacent to any other use	10' (D)	Building Maximum	3 stories (K)
<b>Building Form</b>		Finish Ground Floor Level	12" max. above sidewalk
Street Facade Built-to BTL	80% min. (F)	First Floor Ceiling Height	12' min. clear (L)
Street Side, Corner Lot Built-to	30% min. (C)	Upper Floor(s) Ceiling Height	8' min. clear (L)
Lot Width	100' max.	<b>Notes</b>	
Street facade must be built to BTL within 30' of every corner. All floors must have a primary ground-floor entrance which faces the street.		Mansard roof forms are not allowed.	
Rear facing buildings, loading docks, overhead doors, and other service entries are prohibited on street facades.			
Any section along the BTL at a street edge that is not built on must be defined by a 4' to 4'6" fence or stucco or masonry wall.			

2-4 Grass Valley Development Code

Section X.X.X: Section Title Draft: 01.12.05

**Key**  
 --- Property Line  
 --- Build-to Line (BTL)  
 ■ Parking Area  
 ■ Encroachment Area

Parking		Encroachments		
<b>Location</b>		<b>Front</b>		
Distance from Property Line		Galleries	12' max. (O)	
Front Setback	20' min. (M)	Upper-Story Balconies	8' max. (N)	
Side Setback	0' (N)	Bay Windows	4' max. (O)	
Rear Setback	5' min. (O)	<b>Street Side, Corner Lot</b>		
<b>Required Spaces</b>		Galleries	12' max. (S)	
Ground Floor	Uses < 3,000 sf: No off-street parking required	Upper-Story Balconies	8' max. (S)	
	Uses > 3,000 sf: 1 space/500 sf	Bay Windows	4' max. (S)	
Upper Floor(s)	Residential uses: 1 space/unit; .5 space/studio	<b>Rear</b>	Upper-Story Balconies	5' max. (T)
	Other uses: 1 space/300 sf	Upper-Story Bay Windows	4' max. (T)	
<b>Notes</b>		<b>Frontage Type: Galleries</b>		
Parking Drive Width: 15' max. (P)		Depth: 8' min. clear		
On corner lots, parking drive shall not be located on primary street. (Q)		Height: 2 story max.		
Shared drives are encouraged between adjacent lots to minimize curb cuts along the street. (R)		<b>Notes</b>		
Parking may be provided off-site within 1,300' or as shared parking.		Upper story galleries facing the street must not be used to meet circulation requirements.		
Bicycle parking must be provided in a secure environment.		2' max. clear distance between gallery columns and curb.		
See page x.x for further parking specifications.				

2-5 Grass Valley Development Code

## Implementation Tools

Cities should consider several tools to encourage the development of walkable and pedestrian-oriented neighborhoods and districts. The specific plan is a powerful tool for California communities that can be used to ensure the implementation of a very precise and predictable vision for neighborhoods and districts. However, specific plans can represent a significant investment for small Valley towns, and communities should consider what can be accomplished through simpler vision plans and the incorporation of zoning amendments, such as Form-Based Coding.

### Form-Based Coding

Existing zoning in many Valley communities serves as an impediment to development that can encourage healthy behavior. Segregated land-use districts central to suburban sprawl tend to separate daily activities and promote automobile dependence, while mixed-use zoning districts have often been gradually regulated out of existence. Existing zoning often requires excessive parking standards and setback requirements that impede compact, walkable development. Moreover, specific land uses that can promote healthy eating habits, such as farmer's markets or community gardens, are often simply not allowed under conventional zoning.

Whether within a specific plan or as part of a standard zoning ordinance, Form-Based Coding can be used to provide the community with a set of clear, predictable



Above: Typical code pages from a Form-Based Code developed for Grass Valley, Calif. Below: Example of a code-accompanying regulating plan for Kingsburg.

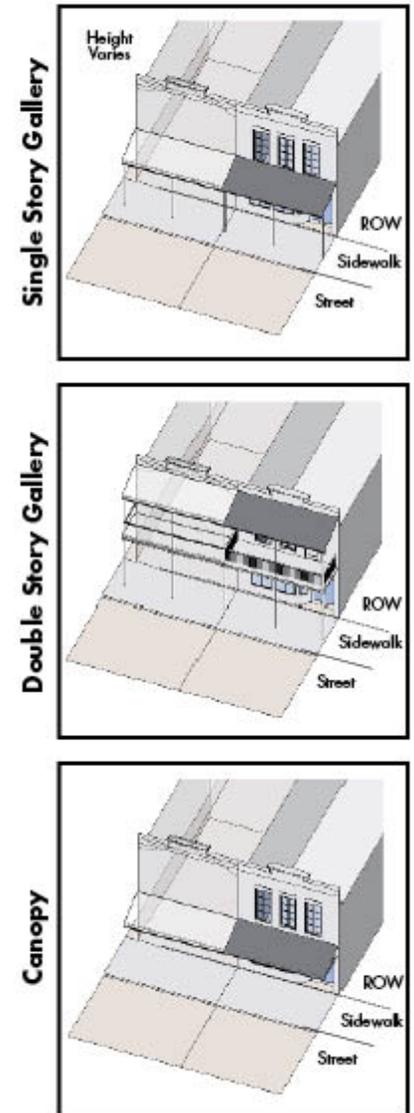


standards and well-calibrated land uses that together promote a mixed-use, pedestrian-oriented environment.

The non-profit Form-Based Codes Institute offers the following definition of Form-Based Codes:<sup>9</sup>

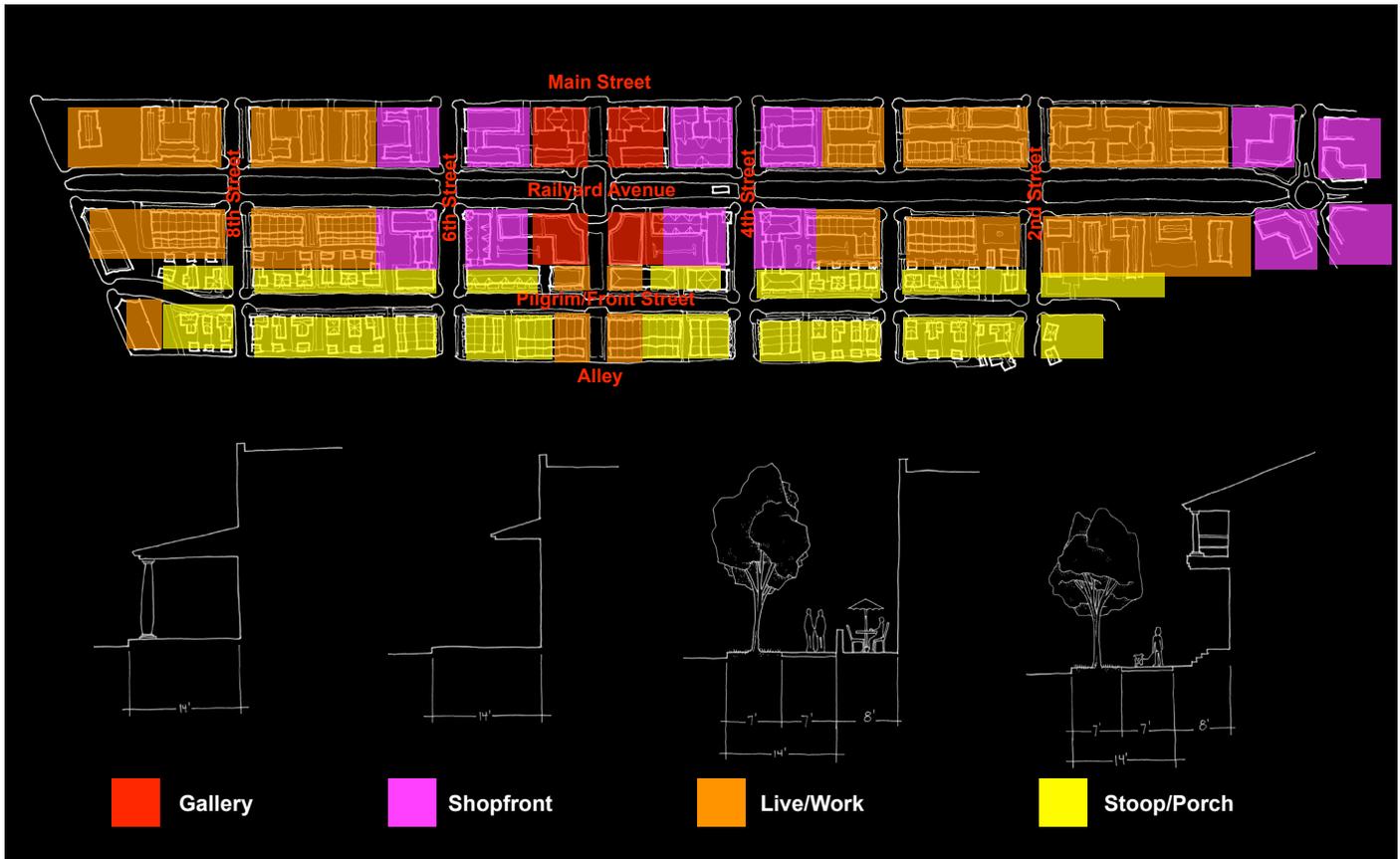
Form-Based Codes address the relationship between building façades and the public realm, the form and mass of buildings in relation to one another and the scale and types of streets and blocks. The regulations and standards in form-based codes, presented in both diagrams and words, are keyed to a regulating plan that designates the appropriate form and scale (and therefore, character) of development rather than only distinctions in land-use types. This is in contrast to conventional zoning’s focus on the segregation of land-use types, permissible property uses, and the control of development intensity through simple numerical parameters (e.g., FAR, dwellings per acre, height limits, setbacks and parking ratios).

Form-Based Codes are based on the concept that different types and intensities of development are appropriate in different parts of the city. They are often utilize the “transect” as an organizing principle, which suggests that places can be organized in varying degrees of intensity, from least urban at the rural edge, to most urban at the center. In the case of most small Valley towns, the transect is very apparent and visible in a very short distance moving from the edge of town to downtown. The transect can be used as an effective tool for determining what new development should be like in order to ensure that it is both appropriate for its location and compatible with the existing community.



*Above, left:* Transect diagram for Fowler produced during a the charrette to show character of buildings in various zones.

*Above, right:* Frontage diagrams appropriate for downtown Fowler and many “T-5” zones throughout Central Valley.



Form-Based Codes typically include detailed standards regulating building placement, general use, building height, parking, allowable encroachments and frontage types, and allowable land uses. They also often include illustrative drawings intended to direct the character of expected development.

*Above: Frontage regulating plan and accompanying sections that determine the proposed locations of appropriate frontage types within downtown Taft.*

For additional information on Form-Based codes, please visit the Form-Based Codes Institute's Web site at [www.formbasedcodes.org](http://www.formbasedcodes.org).

### Frontage Types

One concept that a form-based code can regulate is frontage, which defines the way new buildings address the street. Proper frontage helps to ensure a well-scaled pedestrian environment that contributes to walkability.

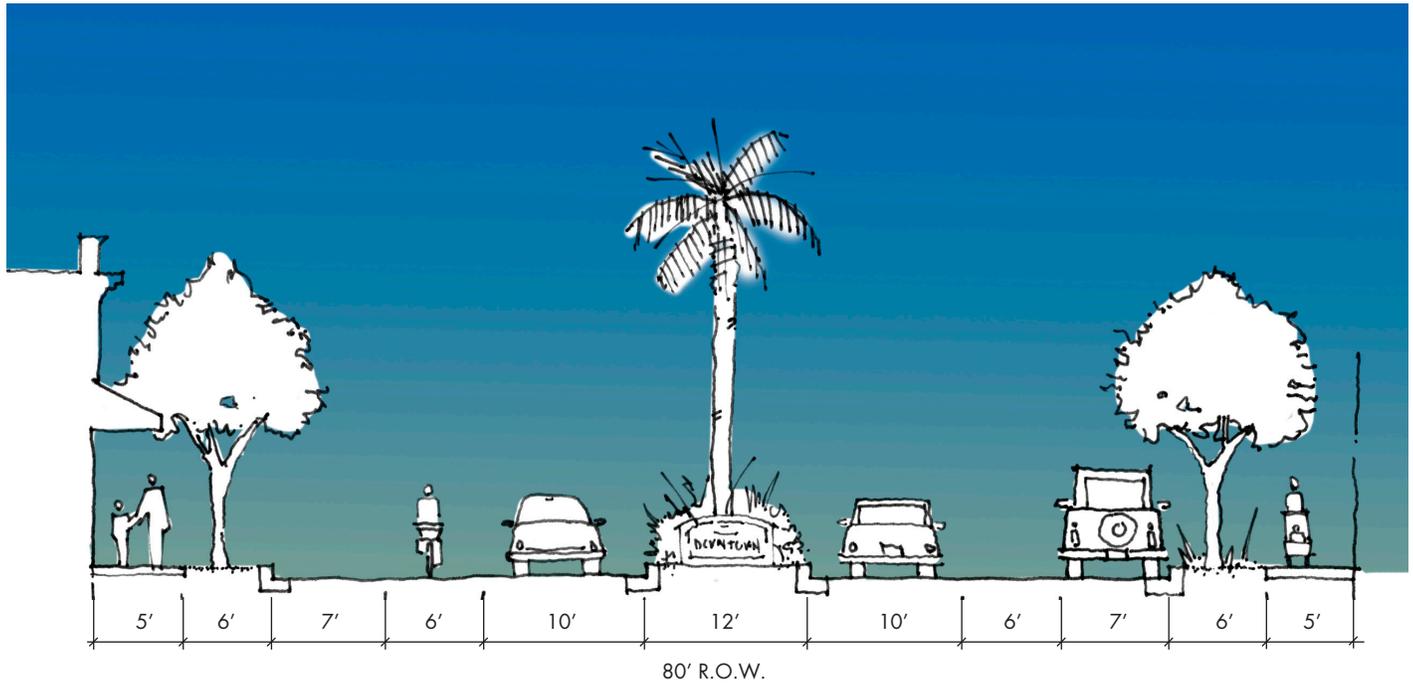
### Parking Standards

Conventional parking standards represent a significant barrier to walkable urbanism for many Valley communities. Excessively high parking ratios for most projects hinders new investment within historic cores and requires large parking lots in new development that by their very nature discourage walking and non-automobile trips. Many communities are considering lowering minimum parking requirements, particularly in downtown areas that can support moderate densities and alternative trips. Some communities are even considering maximum parking requirements to ensure that new projects are built with very little parking and a subsequent high-quality pedestrian environment.

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## Introduction

1. *A primary task of all urban architecture and landscape design is the physical definition of streets and public spaces as places of shared use.*
2. *Individual architectural projects should be seamlessly linked to their surroundings. This issue transcends style.*
3. *The revitalization of urban places depends on safety and security. The design of streets and buildings should reinforce safe environments, but not at the expense of accessibility and openness.*
4. *In the contemporary metropolis, development must adequately accommodate automobiles. It should do so in ways that respect the pedestrian and the form of public space.*
5. *Streets and squares should be safe, comfortable and interesting to the pedestrian. Properly configured, they encourage walking and enable neighbors to know each other and protect their communities.*
6. *Architecture and landscape design should grow from local climate, topography, history, and building practice.*
7. *Civic buildings and public gathering places require important sites to reinforce community identity and the culture of democracy. They deserve distinctive form, because their role is different from that of other buildings and places that constitute the fabric of the city.*
8. *All buildings should provide their inhabitants with a clear sense of location, weather and time. Natural methods of heating and cooling can be more resource-efficient than mechanical systems.*
9. *Preservation and renewal of historic buildings, districts, and landscapes affirm the continuity and evolution of urban society.*



### Introduction

The structure and design of streets and buildings is crucial to the development of a healthy community. Safe, pleasant, well-organized streets encourage residents to make daily journeys on foot, and improve the look and feel of a city in general. General and comprehensive plans, municipal public works standards, and zoning regulations can be updated and altered to encourage good streets.

### Complete Streets

Street design plays a primary role in encouraging people to walk and bicycle. Perceptual qualities of streets can influence whether people will choose an alternative to driving. Streets with lower speed and volume, for example, tend to be more comfortable for pedestrians and bicyclists. Good pedestrian streets should provide visual interest, a sense of enclosure and “eyes on the street” – a steady cadence of entrances and openings that provide a sense of natural surveillance.

It is difficult for many Valley communities to maintain a set of complete streets that facilitate and encourage pedestrian and bicycle activity. Valley towns traditionally have very wide right-of-ways that tend to encourage high vehicle speeds. Without adequate shade, many of them present difficult pedestrian environments, especially during the hot summer months. Wide streets are costly to maintain for small Valley towns with limited resources, and many communities have simply not been able to repair sidewalks or pave streets adequately.

Studies have illustrated that the perception of time spent walking is influenced by the visual interest that pedestrians experience along the walk.<sup>10</sup> While most pedestrians



*Above: Proposed section of 11th Street in Delano showing central median and bike lanes. Below: Views from School Street in downtown Lodi, Calif. showing trees in parking diagonal parking lanes and simple, pedestrian-scaled streetscape treatments.*



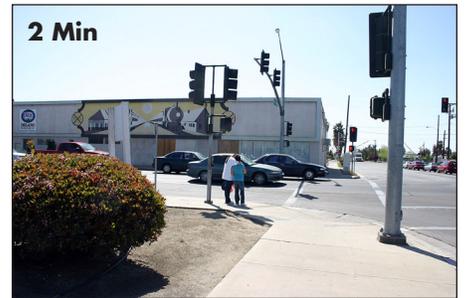
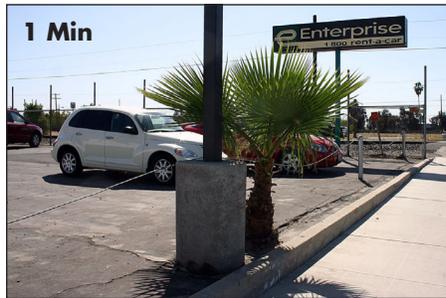
will comfortably walk about ¼ mile – or about 5 minutes – to reach their destination, highly walkable environments with well-designed streets will encourage pedestrians to walk even further. In environments with few pedestrian amenities, the perception of time spent walking actually increases, further decreasing pedestrian activity.

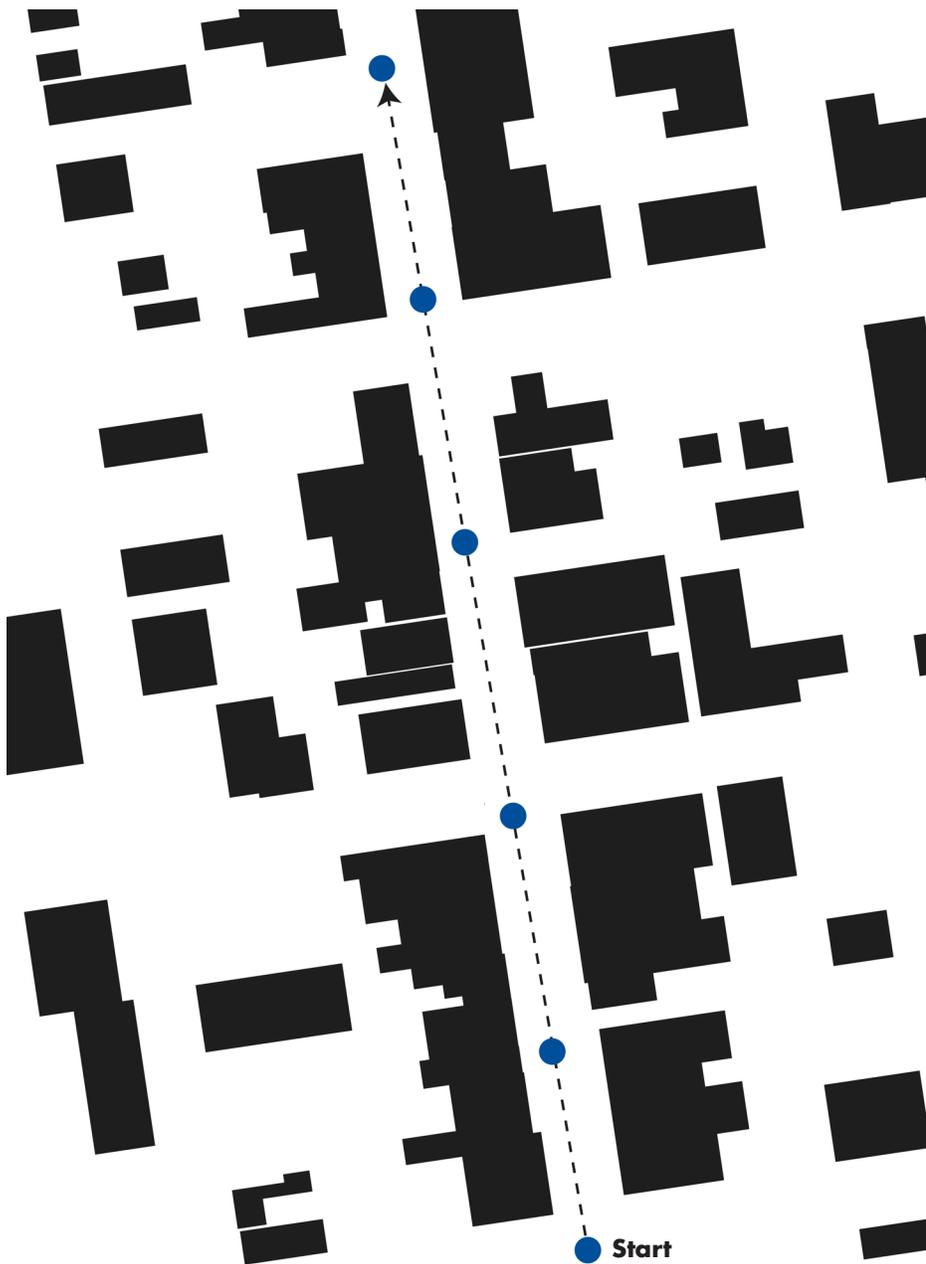
*Above: Diagram showing key connections and amenities adjacent to 11th Street in Delano.*

The community of Delano, in Kern County, shares many challenges in maintaining healthy streets with other Valley communities. The State Highway 99 and the Union Pacific Railroad further exacerbate pedestrian connectivity and walkability, which bisect the community in the north-south direction and limit safe crossing points to about one per mile. 11th Street is one of these very important streets that provides connectivity across the highway and railroad and provides access to a large number of important community destinations, including schools, parks, and Delano’s traditional downtown core. At its center, it is also beset by very difficult crossings of the railroad (at grade) and the highway (as an overpass). Moreover, vacant industrial lands between the highway and the railroad provide little in the way of pedestrian safety and tend to encourage higher vehicle speeds.



*Above: “Figure ground” maps illustrate the relationship of buildings to their surroundings and can help identify good environments for pedestrians. The above map shows buildings along and adjacent to 11th Street in Delano (dashed line indicates path of travel with blue dots at each minute). Below: Photographs from the locations marked on the map show a decreasing amount of interest, activity, shade and perceived safety as pedestrians head west on 11th Street.*





*Above: Figure ground map of buildings along and adjacent to Main Street in Delano (dashed line indicates path of travel with blue dots at each minute). Right: Photographs from the locations marked on the map demonstrate an environment much more conducive to pedestrian activity, with sufficient visual interest and comfort.*



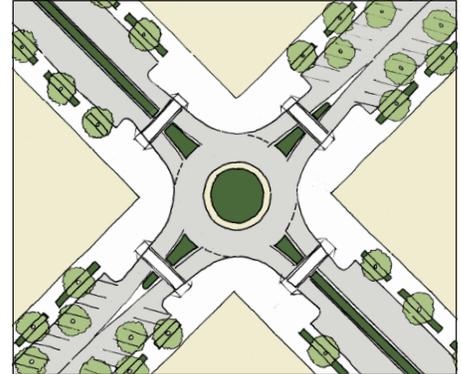
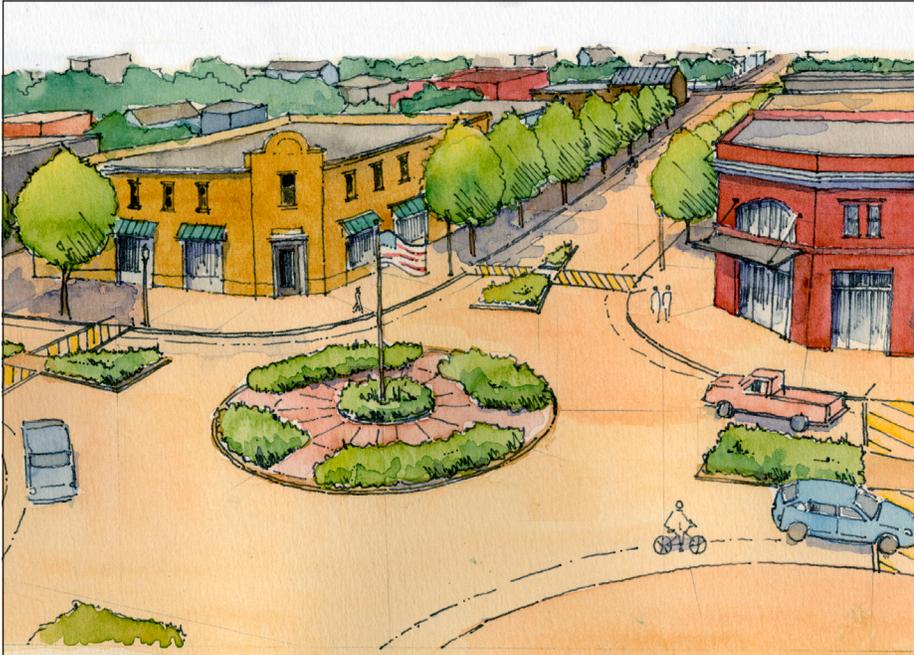
City officials have recently guided the development of a mixed use project on this former industrial land. The project, called the “Paseo,” will potentially bring new pedestrian activity to 11th Street and increase the necessity for a well-designed public environment. In light of these new changes, 11th Street became the focus of a multi-day, community-driven process to create a vision for the area. In order to measure the existing “walkability” of 11th Street, Opticos Design conducted an informal study to analyze the existing conditions for pedestrians along a hypothetical 5-minute walk, and compared this to a 5-minute walk along a vibrant stretch of Main Street.

The design proposal responds to the unique character of particular locations along 11th Street with context-sensitive solutions. Strategies included the following:

- Context-sensitive approach to bicycle travel, including the implementation of Class II bicycle lanes at the eastern and western ends of 11th, the utilization of the Class III route with shared lane markings as it passes through the busy downtown core, and strong connections to other important routes in the larger, citywide bicycle plan



**Above:** Illustrative plan for downtown Delano and the 11th Street corridor (1/4 mile or 5 min. walk radius shown in blue).  
**Below:** Example of Bike Boulevard shared lane markings or “Sharrow.”



- The use of curb extensions at key intersections to effectively narrow the distance pedestrians must travel to safely cross the street
- Encouraging sensitive infill in key locations with well-designed frontage in order to increase the number of “eyes on the street” and encourage a pedestrian-friendly environment
- Wider sidewalks to facilitate pedestrian travel and the accommodation of street trees
- The use of roundabouts at key intersections to facilitate safe and slow turning movements for vehicles and to help ensure safe crossings for pedestrians

**Roundabouts**

Roundabouts are still new in the United States, and many communities express concern when they are first proposed. However, once built, residents often embrace them and recognize that they are safer, quieter, more attractive and more efficient than signalized intersections. While traffic engineers often recommend roundabouts because of their efficiency, the lower speeds and more predictable vehicular movement also make them safer for pedestrians and bicyclists. While a typical 4-way intersection, such as the intersection of 11th Street and High Street in Delano, may have as many as 32 vehicle-to-vehicle conflict points, at a roundabout these conflict points would be reduced to 8.

Properly designed roundabouts in urban areas are designed to bring vehicle speeds down to 15-20 mph, speeds at which motorists are much more likely to yield to pedestrians. The splitter island in a roundabout provides a refuge for pedestrians as they cross the street and simplifies the crossing by letting them focus on vehicles traveling in only one direction. Because roundabouts are more efficient at moving traffic it is often possible to use a one-lane roundabout as a viable alternative to a conventional



*Above, left: Illustrative view of proposed roundabout for Delano at intersection of 11th Street and Fremont. Above, right (from top to bottom): Proposed roundabout for intersection of Draper and Marion in Kingsburg; example of proposed roundabout; example of a mini-circle.*



intersection of four or more lanes. While multi-lane intersections in Valley communities often require pedestrians to cross over 125 feet, a one-lane roundabout could break the crossing into as little as two legs of 12 to 14 feet each.

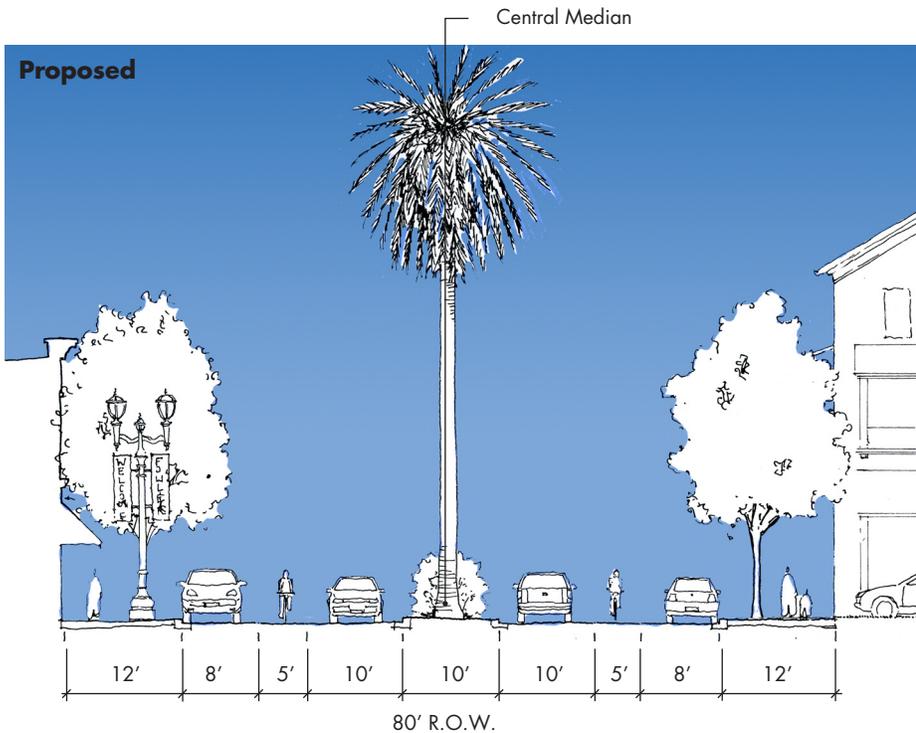
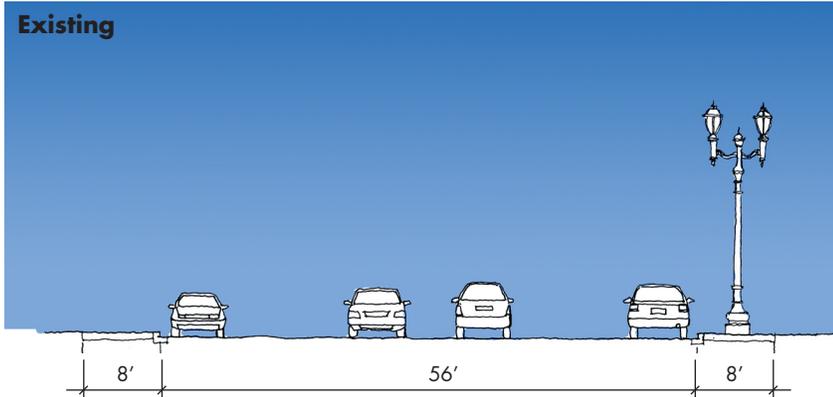
Properly designed roundabouts also work well for bicyclists. Most bicyclists at roundabouts simply take the travel lane since vehicles are circulating at a comfortable bicycle speed. Less confident bicyclists can be provided a ramp on the approach to the roundabout so they can exit the roadway, dismount and walk their bicycle across at the crosswalk.

The design team envisioned that increased pedestrian connectivity within and around the downtown area would ultimately help to maintain its centrality, which becomes particularly important as the community grows. As development at the Paseo and within downtown evolves and potentially intensifies, new opportunities for increased connectivity across the railroad were identified.

Merced Street in Fowler presents a very similar problem to 11th Street in Delano. In the case of Fowler, Merced provides the only crossing of the railroad and the State Highway 99 for the entire community. The former Highway 99 (today Golden State Boulevard) runs parallel to the railroad, creating an additional barrier for pedestrians to cross. New subdivisions in recent years have been built on the west side of this barrier, increasing the need for good pedestrian connections.



**Above:** Illustrative vision plan demonstrating potential long-term development along Merced Street in Fowler and principle bicycle connections across town. **Below:** Illustrative view down Merced shows potential for a high-quality pedestrian environment.



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**Park Road**  
 Park Road will serve as a primary access route for trucks and bicycles. The street should be designed with 11' travel lanes, to accommodate trucks, and 5' bicycle lanes in both directions. The portion of Park Road between Adams and Jefferson Street should continue the large street trees which begin at Military East and continue along Jefferson Street. These trees should have a consistent species and spacing with the trees along Jefferson Street. The rest of the street trees along Park Road should be of a different species.

**Design Standards**

Design Speed:	35 mph
R.O.W. Width:	32'
Width of paving:	32'
On-Street Parking:	N/A
Travel Lane Width:	11' (shared)
Bicycle Lane Width:	5'
Drainage Type:	Open
Width of Sidewalks:	5' (typical)
Sidewalk Easements:	3' (south)
Width of Planter:	5' (typical)
Type of Trees:	Large / Med.
Spacing of Trees:	40'

3.4-4 Lower Arsenal Mixed Use Specific Plan Opticos Design, Inc.

Above, left: Existing street section for West Merced Street in Fowler. Below, left: Proposed street improvements for West Merced Street in Fowler include center median, pedestrian scaled lighting. Above: Example street standards layout within a form-based code for Benicia, Calif.

The design team looked at a strategy for Merced Street that incorporated safe travel for pedestrians and bicyclists from the western subdivisions through the “triple barrier” to the historic downtown, facilitating ease of access and helping to maintain downtown’s centrality. This included the implementation of a designated Class I bicycle path connecting new western subdivisions to Merced Street and a Class II bicycle lane along Merced west of Golden State Boulevard. As Merced presented a narrow cross section that made a “sharrow” solution for bicycles passing through downtown more difficult, bicycle routes running parallel to the downtown were identified.

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### Implementation Tools

Valley communities should consider implementing street standards that can accommodate and encourage the development of complete streets. In many Valley towns, street standards are outdated, requiring overly wide cross sections that encourage high vehicle speeds and little or no pedestrian environment. This becomes particularly important in the development of new subdivisions, as outdated or obsolete street standards in many communities promote auto-oriented patterns that are simply not conducive to pedestrian and bicycle movement.

Standards for complete streets that pay equal attention to all users are well developed, and many communities nationwide have adopted new street standards as part of, or to complement, a TND subdivision ordinance. In general, complete streets focus on design techniques that reduce traffic speeds in order to make environments more compatible for pedestrians and bicyclists. In the case of existing urban arterials, these techniques often include a “road diet,” which can include reductions in vehicle lane width, reductions in total number of travel lanes, increased sidewalk widths and pedestrian amenities, the consolidation of curb cuts and the installation of raised medians. At intersections, curb extensions can reduce crossing times for pedestrians and tighter turning radii can reduce vehicle right turn speeds.

The separation of sidewalks from the street edge can also provide a safer and more comfortable environment for pedestrians. Many existing standards require sidewalks adjacent to the roadway, with no buffer from passing vehicles. Curb cuts providing driveway access also interrupt pedestrian flow along the sidewalk. Planting strips that provide a consistent line of landscape and street trees along sidewalks help to provide a more pleasing pedestrian environment, and the increased separation helps to maintain a flat and level surface. On-street parking can help to further separate pedestrians from the roadway.

### Safe Routes to School (SRTS)

The National Center for Safe Routes to School’s SRTS programs aim to improve the health and well-being of children by enabling and encouraging them to walk and bicycle to school.

SRTS programs examine conditions around schools and conduct projects and activities that work to improve safety and reduce traffic and air pollution in the vicinity of schools. As a result, these programs help make bicycling and walking to school safer and more appealing transportation choices thus encouraging a healthy and active lifestyle from an early age. Many Valley communities have maintained centrally-located schools that are surrounded by residential neighborhoods. SRTS programs can help to identify high-priority streets for pedestrian and bicycle improvements. Valley communities should work to initiate local SRTS programs.



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## Funding Resources

Given the current national and state economic turmoil, the status of many funding sources available to local governments is uncertain. It is important to note that many of the efforts to improve the built environment can be done at low or no cost. For example, issues can be addressed through existing processes, like the inclusion of health language and goals in general plan updates, or through maintenance, such as the installation of bicycle lanes and high-visibility crosswalks during street resurfacing. Evaluating future projects and policy on the merits of helping to ensure healthy outcomes can also be done to insure future investments contribute to healthy outcomes. Additional actions can be taken at the local level through redevelopment efforts, such as redevelopment bonds and tax increment financing.

The American Recovery and Reinvestment Act of 2009 has provided numerous opportunities to support building healthier communities, but the specifics evolve quickly. See [www.recovery.gov](http://www.recovery.gov) for the latest information on stimulus funding, as well as state level analysis ongoing through organizations such as the League of California Cities – ([cacities.org](http://cacities.org)). The policy brief *Supporting Healthy Communities Through the American Recovery and Reinvestment Act of 2009* discusses stimulus funding opportunities as they relate to healthy eating and active living. See Leadership for Healthy Communities' website for more information at [www.leadershipforhealthycommunities.org](http://www.leadershipforhealthycommunities.org).

Key federal funding sources for walking and bicycling are available. The Federal Highway Administration provides a matrix of funding opportunities at <http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm#bp4>. Support for accessing these funds can be found through regional transportation agencies.

Historically, California agencies have been supporters of building healthy communities, including key funding opportunities through the California Department of Transportation (Community Based Transportation Planning Grants, Environmental Justice Context Sensitive Planning Grants, Safe Routes to School Grants) and the Department of Public Health (Local Public Health and the Built Environment Grants).

Private foundations such as The California Endowment and the Robert Wood Johnson Foundation also provide resources to support local government action and to help create community understanding and knowledge that are key to implementing policies and projects that create healthier environments.

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### Resources

#### Local Government Commission (LGC):

The Local Government Commission assists local governments in establishing and nurturing the key elements of livable communities: a healthier human and natural environment, a more sustainable economy, an actively engaged populace and an equitable society.

LGC's Web site ([www.lgc.org](http://www.lgc.org)) has many resources on building healthier communities, including:

- Street Design Guidelines for Healthy Communities
- Smart Growth Zoning Codes
- Neighborhood Scale Planning Tools to Create Active, Livable Communities
- Community Design Fact Sheets for Safe Streets and Healthy Communities

The Local Government Commission also conducts workshops and trainings for elected officials, local government staff and community residents on the following topics:

- Safe Routes to School
- Complete Streets
- Walkable Community Workshops
- Pedestrian Safety
- Multi-day community design charrettes
- Workshops on health and the built environment, smart growth, compact development, street design, traffic calming and related topics. Many of these workshops can be conducted in Spanish.

### **Opticos Design, Inc:**

Opticos Design has partnered with the Local Government Commission and several Central Valley communities to prepare urban design plans and revitalization strategies through successful, community-driven processes. Plans available for download include the following:

“Central Firebaugh Revitalization Plan: A Report to the City of Firebaugh,” 2007.  
[www.opticosdesign.com/downloads/firebaugh/FB\\_FinalReport.pdf](http://www.opticosdesign.com/downloads/firebaugh/FB_FinalReport.pdf)

“Central Fowler Revitalization Plan,” 2007.  
[www.opticosdesign.com/downloads/fowler/FW\\_FinalReport.pdf](http://www.opticosdesign.com/downloads/fowler/FW_FinalReport.pdf)

“Central Kingsburg Revitalization Plan,” 2007.  
[www.opticosdesign.com/downloads/kingsburg/KB\\_FinalReport.pdf](http://www.opticosdesign.com/downloads/kingsburg/KB_FinalReport.pdf)

“Greater Dos Palos Mobility Plan,” 2009.  
[www.opticosdesign.com/downloads/dospalos/DP\\_FinalReport.pdf](http://www.opticosdesign.com/downloads/dospalos/DP_FinalReport.pdf)

### **Leadership for Healthy Communities:**

*Leadership for Healthy Communities* is a \$10 million national program of the Robert Wood Johnson Foundation designed to support local and state government leaders nationwide in their efforts to reduce childhood obesity through public policies that promote active living, healthy eating and access to healthy foods. The program recently released an *Action Strategies Toolkit*, which contains policy options and resources representing current best approaches. Each section includes targeted strategies, stakeholders, policy and program options, directions on how to start programs, and examples of how other states and localities have achieved progress. The toolkit is available at <http://www.leadershipforhealthycommunities.org/actionstrategies>.

### **Central California Regional Obesity Prevention Program (CCROPP)**

The Central California Regional Obesity Prevention Program works to create healthier environments in the Central Valley through the support of healthy eating and active living policies and programs, and maintains strategic partnerships between local public health departments, community-based organizations and community councils. Visit their Web site at [www.csufresno.edu/ccchhs/institutes\\_programs/CCROPP/index.shtml](http://www.csufresno.edu/ccchhs/institutes_programs/CCROPP/index.shtml).

### **Public Health Law & Policy (PHLP)**

Public Health Law and Policy, a project of the California Public Health Institute, provides a series of toolkits and policies designed to promote healthy communities throughout the state. Toolkits and resources can be accessed at [www.healthyplanning.org](http://www.healthyplanning.org). PHLP also houses the National Policy and Legal Analysis Network to Prevent Childhood Obesity (NPLAN), which provides leaders in the childhood obesity prevention field with focused legal research, model policies, fact sheets, toolkits, training and technical assistance to explain legal issues related to public health. More information can be found at [www.nplanonline.org](http://www.nplanonline.org).

### **Additional Web-Based Resources:**

#### **Complete Streets**

The National Complete Streets Coalition works to promote streets that are designed and operated with all users in mind, including bicyclists, public transportation riders and pedestrians of all ages and abilities. More information is available on their website at:

[www.completestreets.org](http://www.completestreets.org)

#### **National Center for Safe Routes to School**

The National Center for Safe Routes to School assists communities in enabling and encouraging children to safely walk and bike to school. The Center strives to equip Safe Routes to School programs with the knowledge and technical information to implement safe and successful strategies. The National Center for Safe Routes to School is maintained by the University of North Carolina Highway Safety Research Center with funding from the U.S. Department of Transportation Federal Highway Administration. More information can be found at:

[www.saferoutesinfo.org](http://www.saferoutesinfo.org)

#### **Safe Routes to School National Partnership**

The Safe Routes to School National Partnership is a network of more than 400 nonprofit organizations, government agencies, schools, and professionals working together to advance the Safe Routes to School (SRTS) movement in the United States. SRTS can provide a variety of important benefits to children and their communities, including increasing physical activity, reducing traffic congestion, improving air quality, and enhancing neighborhood safety.

[www.saferoutespartnership.org](http://www.saferoutespartnership.org)

#### **Supporting Research**

Active Living Research and Healthy Eating Research, two national programs of the Robert Wood Johnson Foundation, contribute to the prevention of childhood obesity in low-income and high-risk racial/ethnic communities by supporting research to examine how environments and policies influence active living for children and their families. More information, including helpful research briefs, can be found at:

[www.activelivingresearch.org](http://www.activelivingresearch.org)

[www.healthyeatingresearch.org](http://www.healthyeatingresearch.org)

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**Endnotes**

1 Ogden C, Carroll M and Flegal K. “High Body Mass Index for Age Among US Children and Adolescents, 2003-2006.” *Journal of the American Medical Association*, 299(20):2401-2405, May 2008.

2 *The Growing Epidemic: Childhood Overweight Rates on the Rise in California Assembly Districts*. California Center for Public Health Advocacy, August 2005.

3 *Kidswalk-to-School*. Department of Health Services Centers for Disease Control and Preventions, 2000.

4 *California - 2008: Overweight and Obesity (BMI)*. National Center for Chronic Disease Prevention & Health Promotion. May 21, 2009. <<http://apps.nccd.cdc.gov/BRFSS>>

5 Ewing R, Bartholomew K, Winkelman S, et al. *Growing Cooler: The Evidence on Urban Development and Climate Change*. Urban Land Institute, 2007.

6 Must A and Anderson S. “Effects of Obesity on Morbidity in Children and Adolescents.” *Nutrition in Clinical Care*, 6(1): 4-11, January-April, 2003.

7 *The Economic Costs of Overweight, Obesity and Physical Inactivity Among California Adults – 2006*. California Center for Public Health Advocacy, July 2009.

- Full report available at: <http://www.publichealthadvocacy.org/costofobesity.html>
- County-specific statistics available at:  
[http://www.publichealthadvocacy.org/PDFs/Economic\\_Costs\\_Table.pdf](http://www.publichealthadvocacy.org/PDFs/Economic_Costs_Table.pdf)

8 Managed parking environments can result in more efficient parking requirements that make development more economically feasible. They can also promote successful business environments that can result in higher tax revenues. For more information on parking management strategies, see:

- Tumlin, J. “Parking” from *Form-Based Codes: A Guide for Planners, Urban Designers, Municipalities, and Developers* by Daniel Parolek, Karen Parolek, and Paul Crawford, John Wiley & Sons, New Jersey, 2008.
- Shoup, Don. *The High Cost of Free Parking*. APA Planners Press, 2005

9 Form Based Codes Institute. *Definition of a Form-Based Code*. Form Based Codes Institute, January 2008. <<http://www.formbasedcodesinstitute.org/definition.html>>

10 Bosselmann, Peter. “Images in Motion,” from *Representation of Places: Reality and Realism in City Design*. University of California Press, Berkeley, 1998

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### Additional Research Resources

Congress for the New Urbanism. *Charter of the New Urbanism*. New York: McGraw-Hill, 1999.

Design, Community, & Environment and Ewing R. *Understanding the Relationship Between Public Health and the Built Environment: A Report Prepared for the LEED-ND Core Committee*. Lawrence Frank & Company, Richard Kreutzer, 2006.

Hobson J and Quiroz-Martinez H. *Roadblocks to Health: Transportation Barriers to Healthy Communities*. Transportation for Healthy Communities Collaborative, 2002.

Kittleson & Associates et al. *Roundabouts: An Informational Guide*. U.S. Department of Transportation and Federal Highway Administration, 2000. Publication available for download at <http://www.tfhr.gov/safety/00068.htm>

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### Glossary of Common Terms

**Bicycle Lane.** Bicycle facilities in California include the following:

- A “Class I” bicycle path is completely segregated from vehicle traffic and tends to be a recreational facility.
- A “Class II” bicycle lane is an on-street facility appropriate for roadways with high bicycle demand. Bicycle lanes are typically a minimum of four feet in width (five feet next to parallel parking), and are delineated by a (minimum) six inch stripe on the left-hand side of the lane, an optional (minimum) four inch stripe on the right side of the lane, and in-pavement markings such as the symbol of a cyclist with a helmet.
- A “Class III” bicycle route is denoted by route signs and installed on streets that are recommended for cycling but do not require bike lane striping due to the low-volume of vehicle traffic flow or narrow cross sections. Class III routes are often marked with a “sharrow” marking that indicates the presence of cyclists to drivers.

**Charrette.** An intensive planning session in which citizens, designers and others collaborate on a vision for development. It provides a forum for ideas and offers the unique advantage of giving immediate feedback to the designers. More importantly, it allows everyone who participates to be a mutual author of the plan. Derived from the French word for ‘little cart.’ In Paris during the 19th century, professors at the Ecole des Beaux Arts circulated with little carts to collect final drawings from their students. Students would jump on the ‘charrette’ to put finishing touches on their presentation minutes before the deadline.

**Circulation Element.** The Circulation Element is a required element of local General Plans and is closely linked to all other general plan elements. Circulation elements describe a community’s approach to transportation issues and present goals, objectives, policies, and action items intended to help address these issues. They are not limited to automobile-related transportation, but address the development of a balanced, multi-

modal circulation system. It addresses such topics as roadway development, road safety, public transit, pedestrian and bicycle facilities and transportation systems management. Well-planned circulation systems can contribute to healthy environments for walking and bicycling.

**Figure Ground.** A method of producing a map of a place that illustrates the relationship between built form (the “figure”) and the surrounding open space (the “ground”). Figure Ground maps help to illustrate spaces and places that are defined by buildings and thus conducive to pedestrian activity.

**Plats.** A map dividing a parcel of land into lots, as in a subdivision. Many Valley towns originated with a “plat” of lots organized into an interconnected network of streets and blocks.

**Transect.** The urban-to-rural transect is an urban planning model. Based on patterns found in natural ecology, the transect defines a series of zones that transition from the least rural development to the most urban. Each zone is fractal in that it contains a similar transition from the edge to the center of the neighborhood. It is an important part of the New Urbanism and Smart Growth movements.

The Transect has six zones, moving from rural to urban. It begins with two that are entirely rural in character: Rural preserve (protected areas in perpetuity); and Rural reserve (areas of high environmental or scenic quality that are not currently preserved, but perhaps should be). The transition zone between countryside and town is called the Edge, which encompasses the most rural part of the neighborhood, and the countryside just beyond. Next is General, the largest zone in most neighborhoods. General is primarily residential, but more urban in character (somewhat higher density with a mix of housing types and a slightly greater mix of uses allowed). At the urban end of the spectrum are two zones which are primarily mixed use: Center (this can be a small neighborhood center or a larger town center, the latter serving more than one neighborhood); and Core (serving the region — typically a central business district). Core is the most urban zone.

**Walkable.** The extent to which the built environment is friendly to the presence of people living, shopping, visiting, enjoying or spending time in an area. Factors affecting walkability include, but are not limited to: land use mix; street connectivity; residential density; “transparency” which includes amount of glass in windows and doors, as well as orientation and proximity of homes and buildings to watch over the street; plenty of places to go to near the majority of homes; placemaking, street designs that work for people, not just cars and retail floor area ratio. Major infrastructural factors include access to mass transit, presence and quality walkways, buffers to moving traffic (planter strips, on-street parking or bike lanes) and pedestrian crossings, aesthetics, nearby local destinations, air quality, shade or sun in appropriate seasons, street furniture, traffic volume and speed, and wind conditions. One of the best ways to quickly determine the walkability of a block, corridor or neighborhood is to count the number of people walking, lingering and enjoying a space. The diversity of people, and especially the presence of children, seniors and people with disabilities, can denote the quality, completeness and wholesomeness of a walkable space.

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