CHAPTER 2

Sustainable Development and Environmental Justice

All statutory references are to the California Government Code unless otherwise noted.

This chapter addresses the incorporation of environmental justice into the general plan. While environmental justice is not a mandatory topic in the general plan, there is a strong case for its inclusion. Federal and state anti-discrimination statutes, which have a long history, apply to planning as they do to other policy areas. As discussed below, environmental justice issues are often related to failures in land use planning. Planning policies that promote livable communities and smart growth can be tools for achieving environmental justice. In keeping with that idea, this chapter begins with a discussion of sustainable development. Sustainable development provides a context for understanding how environmental justice fits into land use planning. This chapter concludes with a discussion of transit-oriented development, which has important implications for environmental justice and sustainable development.

SUSTAINABLE DEVELOPMENT

Sustainable development encompasses established principles of good planning and advocates a proactive approach to future development. The basic concept of sustainability is meeting the needs of current generations without compromising the ability of future generations to meet their own needs. Sustainable development can be further defined as promoting the "three E's:" environment, economy, and equity. For example, a decision or action aimed at promoting economic development should not result in decreased environmental quality or social inequity. Ensuring that a given decision or action promotes all three E's is often referred to as the triple bottom line.

What does sustainable development look like on the ground? In a community that is developing sustainably, the neighborhood is the basic building block of urban design and is characterized by walkability, mixed-use development, and mixed-income housing. Walkability is a function of compactness and density. Attention to streetscape and public spaces is a key design element in creating desirable places to live. Such neighborhoods, also known as neo-traditional or new urbanist development, are more likely to support efficient transit systems. The character and function of each neighborhood is then placed properly within its regional setting. This approach to planning, from the neighborhood to the regional level, is often referred to as smart growth.

Sustainable development goals and policies include the following:

- Decrease urban sprawl.
  - Promote compact, walkable, mixed-use development.
  - Promote infill development.
  - Restore urban and town centers.
  - Limit non-contiguous (leafrog) development.
  - Promote transit-oriented development.
- Protect open space and working landscapes.
  - Conserve prime agricultural lands.
  - Conserve lands of scenic and recreational value.
  - Use open space to define urban communities.
- Protect environmentally sensitive lands.
  - Conserve natural habitat lands.
  - Preserve habitat connectivity.
  - Minimize impact to watershed functions, including water quality and natural floodways.
  - Avoid natural hazards.
- Create strong local and regional economies.
  - Encourage jobs/housing balance.
  - Provide adequate housing for all income levels.
  - Encourage the expansion of telecommunications infrastructure.
  - Provide a fair and predictable land use planning process.
- Promote energy and resource efficiency.
  - Support energy- and resource-efficient industries.
  - Promote waste reduction programs, such as recycling.

  - Promote alternative forms of transportation.
  - Promote energy- and resource-efficient buildings.
- Promote equitable development.
  - Require fair treatment in the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.
  - Promote mixed-income housing development.
  - Promote alternative transportation options to increase access.
  - Promote economic opportunity for all segments of the community.
  - Protect culturally significant sites.

The comprehensive, integrated, and long-term nature of the general plan makes it an ideal vehicle for implementing local sustainable development goals. When preparing or amending a general plan, sustainable development policies or programs may be addressed within the various elements of the plan. For example, policies on minimizing urban sprawl may be addressed in the land use element; policies for prime agricultural land preservation may be introduced in the open-space element; and the transportation element may be used to address public transportation concerns.

The principles of sustainable development may also guide the overall goals of the general plan. For example, Santa Clara County's general plan addresses four themes of sustainable development in its general plan vision: social and economic well-being, managed and balanced growth, livable communities, and responsible resource conservation. The general plan's goals for social and economic well-being include achieving "a healthy, diverse economy and adequate employment opportunities" by reaching "sustainable levels of growth and job formation consistent with planned improvements in housing, transportation, urban services, and maintenance of environmental quality." Goals for the other themes also reflect the necessary balance of social, environmental, and economic objectives that characterizes sustainable development.

General plans can work in concert with other plans and policy documents to promote sustainability. For instance, the City of Pasadena uses a quality-of-life index to identify, measure, and set quality-of-life indicators for a healthier, more sustainable city. "The Quality of Life in Pasadena" index combines information from the city's general plan and other documents and addresses such topics as the environment, health, education, transportation, the economy, and employment. The City of Oakland includes in each staff report to the City Council a discussion of how the proposed action would promote the three E's of sustainability. The concept and application of sustainable development is evolving through creative interpretation and use.

Jobs/Housing Balance

One issue that cuts across several elements of the general plan is jobs/housing balance. Jobs/housing balance compares the available housing and availalbe jobs within a community, a city or other geographically defined subregion. Relying on the automobile as our primary means of transportation has encouraged patterns of development and employment that are often inefficient. Suburbanites routinely commute 25 miles or more from their homes to their places of employment. Public transit is impractical for most people because jobs are dispersed throughout employment regions and housing density is too low. With residential and commercial land uses often separated by long distances, people must make multiple car trips to perform routine errands, such as grocery shopping, going to the bank, eating out, going to the dentist, etc.

Jobs/housing balance is based on the premise that commuting, the overall number of vehicle trips, and the resultant vehicle miles traveled can be reduced when sufficient jobs are available locally to balance the employment demands of the community and when commercial services are convenient to residential areas. Planning for a jobs/housing balance requires in-depth analyses of employment potential (existing and projected), housing demand (by income level and housing type), new housing production, and the relationship between employment opportunities and housing availability. Other factors, such as housing costs and transportation systems, must also be evaluated.

Improving the jobs/housing balance requires carefully planning for the location, intensity, and nature of jobs and housing in order to encourage a reduction in vehicle trips and miles traveled and a corresponding increase in the use of mass transit and alternative transportation methods, such as bicycles, carpools, and walking. Strategies include locating higher-density housing near employment centers, promoting infill development, promoting transit-oriented development, actively recruiting businesses that will utilize the local workforce, developing a robust telecommunications infrastructure, developing workforce skills consistent with evolving local economies, and providing affordable housing opportunities within the community. Jobs-housing provisions most directly affect the land use, circulation, and housing elements.

The question of a jobs/housing balance on the scale of a community should not be confused with the design of mixed-use, walkable neighborhoods. Planning for a

jobs/housing balance alone could easily result in a city composed of single-use residential subdivisions on one side of town and single-use business parks and shopping centers on the other side of town. At the scale of the region, this might be preferable to a jobs/housing imbalance, but at the scale of the community and of the neighborhood it does not improve livability or reduce dependence on the automobile. While it is not likely that most employees of a local business will also live in the neighborhood, it is important that the planning of the neighborhood not preclude that possibility for those who would chose it.

ENVIRONMENTAL JUSTICE

Environmental justice is defined in state planning law as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (§65040.12(e)). The Governor's Office of Planning and Research (OPR) is required to provide guidance to cities and counties for integrating environmental justice into their general plans (§65040.12(c)). This section discusses the framework for environmental justice and the relationship of environmental justice to the general plan. The recommendations in this chapter are also reflected in the chapters on the required general plan elements (Chapter 4), optional elements (Chapter 6), and public participation (Chapter 8).

Federal Framework

The basis for environmental justice lies in the Equal Protection Clause of the U.S. Constitution. The Fourteenth Amendment expressly provides that the states may not "deny to any person within [their] jurisdiction the equal protection of the laws" (U.S. Constitution, amend. XIV, §1).

On February 11, 1994, President Clinton signed Executive Order (E.O.) 12898, titled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The executive order followed a 1992 report by the U.S. Environmental Protection Agency (U.S. EPA) indicating that "[r]acial minority and low-income populations experience higher than average exposures to selected air pollutants, hazardous waste facilities, and other forms of environmental pollution." Among other things, E.O. 12898 directed federal agencies to incorporate environmental justice into their missions.

In a memorandum accompanying E.O. 12898, President Clinton underscored existing federal laws that can be used to further environment justice. These laws include Title VI of the Civil Rights Act of 1964 and the National Environmental Policy Act (NEPA), among others. Title VI prohibits any recipient (state or local entity or public or private agency) of federal financial assistance from discriminating on the basis of race, color, or national origin in its programs or activities (42 USC §2000d-§2000d-7). State and local agencies that receive federal funding must comply with Title VI. Pursuant to the Civil Rights Restoration Act of 1987, this requirement applies to all agency programs and activities, not just those that receive direct federal funding. In response, many state and local agencies that receive federal funding have initiated environmental justice programs of their own.

NEPA applies to projects carried out or funded by a federal agency (including the issuance of federal permits). NEPA is useful relative to environmental justice because it requires public participation and discussion of alternatives and mitigation measures that could reduce disproportionate effects on low-income and minority populations. On December 10, 1997, the Council on Environmental Quality (CEQ) released *NEPA Guidance for Federal Agencies on Key Terms in E.O. 12898.* This document is a useful reference for planners, although it is focused on environmental review of individual projects rather than long-term comprehensive land use planning.

State Framework

Anti-discrimination laws existed in California prior to the passage of the first state environmental justice legislation in 1999. The California Constitution prohibits discrimination in the operation of public employment, public education, or public contracting (Article I, §31). State law further prohibits discrimination under any program or activity that is funded or administered by the state (§11135). The Planning and Zoning Law prohibits any local entity from denying any individual or group of the enjoyment of residence, land ownership, tenancy, or any other land use in California due to the race, sex, color, religion, ethnicity, national origin, ancestry, lawful occupation, or age of the individual or group of individuals (§65008). The Fair Employment and Housing Act (FEHA) specifically prohibits housing discrimination on the basis of race, color, religion, sex, sexual orientation, marital status, national origin, ancestry, familial status, disability, or source of income (§12900, et seq.)

In 1999, Governor Davis signed SB 115 (Solis, Chapter 690, Statutes of 1999) into law, defining environmental justice in statute and establishing OPR as

the coordinating agency for state environmental justice programs (§65040.12). SB 115 further required the California Environmental Protection Agency (Cal/EPA) to develop a model environmental justice mission statement for boards, departments, and offices within the agency by January 1, 2001 (Public Resources Code §72000-72001).

In 2000, Governor Davis signed SB 89 (Escutia, Chapter 728, Statutes of 2000), which complemented SB 115 by requiring the creation of an environmental justice working group and an advisory group to assist Cal/EPA in developing an intra-agency environmental justice strategy (Public Resources Code §72002-72003). SB 828 (Alarcón, Chapter 765, Statutes of 2001) added and modified due dates for the development of Cal/EPA's intra-agency environmental justice strategy and required each board, department, and office within Cal/EPA to identify and address any gaps in its existing programs, policies, and activities that may impede environmental justice no later than January 1, 2004 (Public Resources Code §71114-71115).

AB 1553 (Keeley, Chapter 762, Statutes of 2001) required OPR to incorporate environmental justice considerations in the *General Plan Guidelines*. AB 1553 specified that the guidelines should propose methods for local governments to address the following:

- Planning for the equitable distribution of new public facilities and services that increase and enhance community quality of life.
- Providing for the location of industrial facilities and uses that pose a significant hazard to human health and safety in a manner that seeks to avoid overconcentrating these uses in proximity to schools or residential dwellings.
- Providing for the location of new schools and residential dwellings in a manner that avoids proximity to industrial facilities and uses that pose a significant hazard to human health and safety.
- Promoting more livable communities by expanding opportunities for transit-oriented development.

Forms of Inequity

Problems of environmental justice can be broken down into two categories: procedural inequity and geographic inequity. In other words, unfair treatment can manifest itself in terms of process or in terms of results.

Procedural inequity occurs when the planning process is not applied uniformly. Examples of procedural inequity include:

- "Stacking" commissions or committees with certain interests while ignoring the interests of other segments of the community, such as minority and low-income residents.
- Holding meetings at times or in locations that minimize the ability of certain groups or individuals to participate.
- Using English-only written or verbal communication when a non-English speaking population will be affected by a planning decision.
- Requiring lower levels of mitigation for projects affecting low-income or minority populations.
- Unevenly enforcing environmental rules.

Geographic inequity describes a situation in which the burdens of undesirable land uses are concentrated in certain neighborhoods while the benefits are received elsewhere. It also describes a situation in which public amenities are concentrated only in certain areas. Examples of geographic inequity include situations in which:

- Certain neighborhoods have a disproportionate share of industrial facilities that handle or produce hazardous waste, while the economic benefits are distributed to other neighborhoods (in the form of jobs and tax revenue).
- Certain neighborhoods have a disproportionate share of waste disposal facilities, while the benefits of such facilities are received by the community or region as a whole.
- Certain neighborhoods have ample community centers, parks, and open space and thus experience more of the environmental benefits associated with these amenities, while other neighborhoods have fewer such amenities.

Public Participation

Community involvement in the planning process is an important part of environmental justice. Cities and counties should develop public participation strategies that allow for early and meaningful community involvement in the general plan process by all affected population groups. Participation plans should incorporate strategies to overcome linguistic, institutional, cultural, economic, and historic barriers to effective participation. Chapter 8 is dedicated to the issue of public participation and suggests methods to improve outreach to and communication with all population groups, including low-income and minority populations.

Compatibility

At the general plan level, discussions about environmental justice involve a central land use concept: compatibility. The primary purpose of planning, and the source of government authority to engage in planning, is to protect the public health, safety, and welfare. Incompatible land uses may create health, safety, and welfare issues for the community. Geographic inequity occurs when incompatible land uses disproportionately affect a particular socioeconomic segment of the community. In this sense, environmental justice problems indicate a failure of land use planning to deliver on its original promise—reducing the harmful effects of incompatible land uses.

Traditionally, zoning has attempted to minimize health and safety risks by segregating land uses. However, taking this approach too far has negative consequences that run counter to the goals of sustainable development. Rigid separation of land uses has resulted in disconnected islands of activity and contributed to sprawl. As discussed above, development patterns characterized by single-use zoning result in the automobile being the only viable transportation option, which has high environmental, economic, and social costs.

The traditional pyramidal zoning model places single-family homes at the pinnacle, followed by denser multi-family housing, followed by office and commercial uses, and, finally, followed by industrial uses at the base. In this model, land uses at a lower level on the pyramid are not allowed within the higher designations (e.g., commercial uses are not allowed in multi-family zones, and apartments are not allowed in single-family zones). This is giving way to a much more sustainable model, where the middle of the pyramid consists of mixed-use development that integrates housing, commercial, and recreational/cultural activities. Despite the desirability of mixed-use zoning, it is important to recognize that there are certain industrial uses that will always be incompatible with residential and school uses.

Residential and school uses are harmed by incompatible land uses that have environmental effects, such as noise, air emissions (including dust), and exposure to hazardous materials. The compatibility problem also operates in reverse. Incompatible uses adjacent to residential units, schools, or environmentally sensitive areas may also suffer negative consequences in the form of higher mitigation costs or the curtailment of economic activities. Specific examples of land use incompatibility include:

- Residential and school uses in proximity to industrial facilities and other uses that, even with the best available technology, will contain or produce materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a significant hazard to human health and safety.
- Residential and school uses adjacent to intensive agricultural uses.
- Residential and school uses adjacent to major thoroughfares, such as highways.
- Residential or commercial uses in proximity to resource utilization activities, such as mining or oil and gas wells.

Issues related to industrial overconcentration and the location of residential dwellings and schools are discussed below.

Information and Analysis

Good information is critical to making informed decisions about environmental justice issues. The analysis of environmental justice problems has benefited from the advancement of geographic information systems (GIS), as has the entire planning field. The role of data in the general plan process is discussed more fully in Chapter 3. The data suggestions for the mandatory general plan elements (Chapter 4) include much of the information necessary for developing environmental justice policies.

Relevant information for addressing environmental justice issues includes, but is not limited to:

- Base map of the city or county planning area.
- General plan designations of land use (existing and proposed).
- Current demographic data.
  - Population location and density.
  - Distribution of population by income.
  - Distribution of population by ethnicity.
  - Distribution of population by age.
- Location of public facilities that enhance community quality of life, including open space.
- Location of industrial facilities and other uses that contain or produce materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a significant hazard to human health and safety.
- Location of existing and proposed schools.
- Location of major thoroughfares, ports and airports.
- Location and density of existing and proposed residential development.

Although the use of population data is a normal part of the planning process, cities and counties do not always gather socioeconomic data when preparing or substantially revising their general plans. Jurisdictions do have to collect some socioeconomic data during the preparation of the housing element, such as income level and persons with special housing needs (elderly, farmworkers, single head of household, etc.), but this required information is not enough to paint a complete socioeconomic picture of the community. From an environmental justice perspective, socioeconomic data is useful for a number of things, including:

- Improving the public participation process.
- Identifying low-income and minority neighborhoods that are underserved by public facilities and services that enhance quality of life and planning for the equitable distribution of such facilities and services.
- Planning for infrastructure and housing needs.
- Identifying low-income and minority neighborhoods in which industrial facilities and uses that pose a significant hazard to human health and safety may be overconcentrated.

As discussed below, the definitions of both equitable distribution and overconcentration do not depend on socioeconomic factors. However, reversing historical problems of procedural and geographic inequity requires accurate socioeconomic information in order to develop policies and prioritize implementation measures.

Relationship to the General Plan

Cities and counties may incorporate environmental justice into their general plans in several ways. A city or county may choose to adopt an optional environmental justice element. However, OPR recommends incorporating policies supportive of environmental justice in all of the mandatory elements of the general plan. These policies should also be reflected in any optional elements. In keeping with the internal consistency requirement, environmental justice policies in one element cannot conflict with the policies of another element. For example, if the land use element contains a policy prohibiting residential uses adjacent to certain industrial uses, properties affected by that policy could not be used as part of the housing element site inventory.

Public Facilities and Services

Cities and counties should plan for the equitable distribution throughout the community of new public facilities and services that increase and enhance community quality of life, given the fiscal and legal constraints that restrict the siting of such facilities.

Public facilities and services that enhance quality of life include, but are not limited to, parks, open space, trails, greenbelts, recreational facilities (including senior and youth centers), community centers, child care centers, libraries, museums, cultural centers, science centers, and zoos. The equitable distribution of facilities and services has two components. The first component is the number and size of facilities. Simply put, a community should have adequate facilities and services to serve all residents equally. The second component is access, which can be measured as the distance or travel time from each residential area to the facility or service. Access may also be measured by the ability to use a variety of transportation modes, including public transit, walking, and bicycling, to travel between each residential area and the facility or service. A geographic analysis of residential areas and the location of public amenities may reveal underserved neighborhoods. Policies addressing the distribution of beneficial public facilities and services should address existing disparities as well as the needs of future residents.

Public facilities and services that enhance community quality of life can be divided into three basic types for purposes of distribution. The first type is neighborhood facilities, such as parks, that serve a specific neighborhood or subdivision. The second type is district facilities, such as branch libraries or recreational centers, that serve more than one neighborhood. The third type is unique facilities, where one facility serves the entire community—"community" being an incorporated city or, for counties, an unincorporated area.

Neighborhood facilities should be geographically dispersed throughout the community. Examples include parks, tot lots, and neighborhood activity centers. These facilities should be located within the neighborhood they serve. Public amenities can serve to anchor a neighborhood and should be centrally located. Furthermore, locating neighborhood-serving public facilities within walking distance of most residents will encourage use and provide a sense of place. A distance of a quarter to a half mile is generally considered a walkable distance.

Planning for the location of district facilities should follow the same principles as above. Since these facilities serve several neighborhoods, they should be centrally located relative to the neighborhoods they serve. Locating such facilities along transit corridors or in transit-oriented developments will increase their accessibility (see Transit-Oriented Development later in this chapter).

Examples of unique public facilities include the central library or city museum. Where a community has

only one recreational or cultural center, that would be considered a unique facility or service. These facilities should be located in the civic center or urban core rather than isolated in remote single-use complexes. They should be close to transit to allow maximum access for the entire community.

Consideration should also be given to regional facilities, which may exhibit the characteristics of all three basic types described above. Regional facilities include trails, networks of open space such as greenbelts, regional parks and recreation areas, etc. Linear facilities (such as trails and greenbelts) may serve several neighborhoods but are also a unique amenity for the entire area. The same is true of large regional recreational areas. Individual cities and counties may have less control over the location of regional facilities, which may be operated by special districts or joint powers authorities. Cities and counties have even less control over state and federal parks, recreational areas, and forests, although cities and counties should account for such facilities in the planning process. New regional facilities are rare, and when the opportunity to acquire or develop such facilities arises, the location may be predetermined by such factors as natural features, abandoned rail lines (for trail use), or the availability of large undeveloped properties. Nevertheless, planners should consider existing and proposed regional facilities when analyzing community access to public facilities that contribute to quality of life and when planning for future such facilities.

Analyzing Equitable Distribution

A University of Southern California study, *Parks and Park Funding in Los Angeles: An Equity Mapping Analysis,* is an example of how equitable distribution of public amenities (in this case, parks and open space) can be analyzed using a geographic information system (GIS). The report is available at www.usc.edu/dept/geography/espe.

Locating public facilities and uses according to these planning principles may be limited by fiscal and legal constraints. Fiscal constraints include the relative cost of land and the ability of public agencies to obtain financing for acquisition and construction. Legal constraints include, but are not limited to, local, state, and federal regulations for the protection of the environment, public health and safety, and the preservation of natural and cultural resources, including historical and archeological resources.

Industrial Facilities

Cities and counties should develop policies that provide for the location of industrial facilities and other uses that, even with the best available technology, will contain or produce materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a significant hazard to human health and safety in a manner that seeks to avoid overconcentrating these uses in proximity to schools or residential dwellings.

Overconcentration occurs when two or more industrial facilities or uses, which do not individually exceed acceptable regulatory standards for public health and safety, pose a significant hazard to adjacent residential and school uses due to their cumulative effects.

Facilities that emit, handle, store, or dispose of hazardous materials are regulated by a variety of agencies. These agencies include local Certified Unified Program Agencies (such as environmental health departments or fire departments), air districts, regional water quality control boards, the California Department of Health Services, the California Integrated Waste Management Board, and the California Department of Toxic Substance Control (DTSC). However, cities and counties, as the local land use authority, are primarily responsible for the location and distribution of potentially hazardous industrial facilities through their general plans and zoning ordinances.

Cities and counties may pursue several strategies within their general plans to address overconcentration. Strategies may include:

- Buffer zones between industrial and residential land uses.
- Policies addressing individual project siting decisions.
- Capping the number of certain facilities and uses.
- Changing land use designations in overconcentrated areas.

Buffer zones are a broad approach to land use compatibility. Buffer zone policies may be approached in one of two ways. First, the general plan land use diagram may designate transitional land uses between industrial and residential areas. Transitional uses may include open space, light industry, office uses, business parks, or heavy commercial uses. The land use policies for these buffer areas should prohibit school uses (see discussion below on school siting). Appropriate distances for buffer areas will vary depending on local circumstances. Factors such as the intensity of nearby residential uses, prevailing

winds, geographic features, and the types of facilities and uses allowed in industrial areas should be considered.

Second, buffer zones may be implemented at the project level. One weakness of general buffer zone policies is the difficulty of making *a priori* decisions about how much distance is needed to minimize potential health and safety hazards to residential and school uses. A stronger approach may be buffer policies aimed at individual siting decisions.

Approval of certain industrial facilities or uses can be made conditional if they are within a certain distance of residential or school uses and/or contain or produce hazardous materials. This allows the city or county to consider the potential hazards associated with individual facilities or uses on a case-by-case basis. General plan policies can outline consistent standards to be used in approving, conditionally approving, or denying proposed locations for industrial facilities and other uses that may pose a significant hazard to human health and safety. Such standards should be reflected in the zoning ordinance that implements the general plan (see Chapter 10 for a discussion of zoning consistency).

Approval of a conditional use is discretionary and thus would be subject to the California Environmental Quality Act (CEQA). CEQA requires decision makers to consider the environmental consequences of their actions. CEQA also serves as an important consultation tool. A lead agency must consult with an affected school district if any facility that would create hazardous air emissions or handle acutely hazardous material is proposed within a quarter mile of a school (Public Resources Code §21151.4).

Another policy response to overconcentration is to cap the number of potentially hazardous facilities within a certain distance of each other. For example, the State of Georgia does not allow siting of a new solid waste facility if two such facilities already exist within a two mile radius of the proposed facility. While capping policies are easy to implement and understandable to the public, they have serious drawbacks. Numerical caps are more likely to be based on perception and political compromise than scientific merit. Without analyzing the type, quantity, and concentration of materials to be contained or produced at a proposed facility, it is difficult to determine the number of facilities that would create a situation of overconcentration.

The general plan strategies above can assist a city or county in addressing future problems of overconcentration. General plans, which are by their nature concerned with future development, are not as effective at correcting past problems. One way to address existing or potential future problems of overconcentration is to change the land use designation for existing industrial areas. This approach differs from buffer zones in that buffer zones affect the land use designation of areas adjacent to existing or proposed industrial areas. Changing the allowable land uses in existing industrial areas prevents new industrial land uses from being established and may affect the expansion of existing facilities and uses (depending on how local policies treat pre-existing or "legal non-conforming," land uses).

An important caveat is to consider what new uses will be allowed in the previously industrial areas. A new environmental justice problem could be created if residences and schools are allowed without considering any lingering effects of industrial overconcentration. At the same time, where overconcentration is no longer an issue and effective remediation or clean-up is possible, so-called "brownfield" development is an important tool for a community's continued sustainable development.

Finally, planners should remember to differentiate between overconcentration and the mere presence of materials that may be classified as hazardous. Many neighborhood businesses, such as gas stations, photography studios, retail paint stores, dry cleaners, etc., may have hazardous materials present. While these activities must be conducted in a responsible manner in accordance with all environmental regulations, they should not be confused with those truly industrial activities that are inappropriate for residential or mixed-use areas.

New Residential Uses and Schools

Cities and counties should provide for the location of new schools and residential dwellings in a manner that seeks to avoid locating these uses in proximity to industrial facilities and uses that will contain or produce materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a significant hazard to human health and safety.

The location of new residential and school development is the flip side of the problem discussed in the section above. Given the need for new housing and schools and given the need to make efficient use of land, how do cities and counties deal with existing overconcentration of industrial uses? When designating areas for residential development, the city or county should identify any areas of overconcentration. Appropriate buffers should be placed between overconcentrated industrial areas and new residential areas. Using their authority over the approval and design of subdivisions, cities and counties may develop

policies and standards related to industrial overconcentration and new residential subdivision approvals. These policies could include buffer zones, as well as the criteria to be used for rejecting new residential development (such as standards for risk to human health and safety from nearby industrial facilities and uses).

The location of new schools is of particular concern to both local governments and school districts. The general plan should identify possible locations for new schools. Such locations may be approximate and need not indicate specific parcels. Identifying appropriate school locations as part of the general plan process may avoid project-level problems of proximity to certain industrial facilities and uses. Due to the fragmentation of authority in the areas of land use planning and school siting and construction, it is recommended that the planning agency work closely with the school district to identify suitable school locations. Prior to adopting or amending a general plan, the planning agency must refer the proposed action to any school district within the area covered by the proposed action (§65352). The city or county should use this opportunity to engage school districts on issues of school siting.

For their part, school districts are required to notify the planning commission of the city or county prior to acquiring property for new schools or expansion of an existing school. School districts are not bound by local zoning ordinances unless the ordinance provides for the location of schools and the city or county has adopted a general plan (§53091). School districts can override the general plan and zoning ordinances with regard to the use of property for classroom facilities by a two-thirds vote of the school board (§53094). The school board cannot exercise this power for non-classroom facilities, such as administrative buildings, bus storage and maintenance yards, and warehouses. If the school board exercises their override power, they must notify the city or county within 10 days (§53904).

CEQA requires that the environmental document prepared for a new school identify whether the proposed site is any of the following: a current or former hazardous waste or solid waste disposal facility, a hazardous substances release site identified by DTSC, the site of one or more pipelines that carry hazardous substances, or located within a quarter mile of a facility that emits hazardous air emissions or handles acutely hazardous material (Public Resources Code §21151.8). If such facilities exist, the school board must make findings that the facilities would not endanger the health of those attending or employed by the proposed school or that existing corrective measures would result in the mitigation of any health endangerment.

TRANSIT-ORIENTED DEVELOPMENT

Cities and counties should promote more livable communities by expanding opportunities for transit-oriented development (TOD) so that residents minimize traffic and pollution impacts from traveling for purposes of work, shopping, school, and recreation.

TOD is defined as moderate- to high-density development located within an easy walk of a major transit stop, generally with a mix of residential, employment, and shopping opportunities. TOD encourages walking and transit use without excluding the automobile. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate transit use (*Statewide Transit-Oriented Development Study: Factors for Success in California*, California Department of Transportation, 2002).

A well-designed, vibrant TOD community can provide many benefits for local residents and businesses, as well as for the surrounding region. Compact development near transit stops can increase transit ridership and decrease rates of vehicle miles traveled (VMT), thereby yielding a good return on transit system investments. TOD can also provide mobility choices, increase public safety, increase disposable household income by reducing transportation costs, reduce air pollution and energy consumption rates, help conserve resources and open space, assist in economic development, and contribute to the housing supply.

TOD is a strategy that may help a community achieve its general plan goals related to circulation, housing, environmental quality, and economic development. Additionally, by improving access to jobs and housing and revitalizing existing neighborhoods, TOD can be a tool for promoting environmental justice.

A variety of factors need to be considered during the development and implementation of TOD. These factors include transit system design; community partnerships; understanding of local real estate markets; coordination among local, regional, and state organizations; and providing the right mix of planning and financial incentives and resources. A successful TOD will reinforce the community and the transit system. Transit operators, property owners, and residents should be involved in the development of TOD proposals.

Data to identify and assess potential locations for TOD should be collected during preparation of the land use, circulation, and housing elements of the general plan. An inventory of potential development (and redevelopment) sites within a quarter to a half mile of existing and proposed transit stops may reveal potential locations for TOD. Additional data may be used to verify the optimum location and mix of uses to further refine

the viability of TOD at specific transit hubs. This data may include origin and destination studies, transit ridership projections, and data to determine the appropriate jobs-to-housing ratio and level of retail services. The appropriate density and intensity will support a high level of transit service. An optimal mix of uses will provide opportunities to shop, work, live, and recreate without the need for an automobile.

Local governments can promote TOD through general plan policies that encourage supportive densities and designs and a mix of land uses. TOD-supportive policies may provide for higher land use densities, reduced parking requirements, decreased automobile traffic levels of service, and increased transit levels of service. TOD policies should facilitate a pedestrian-oriented environment with features such as traffic calming strategies, traditional grid street patterns with smaller blocks, and architecture that orients buildings to sidewalks, plazas, and parks rather than to parking.

TOD Standards and Policies

TOD design will vary with local needs and context, but there are several generally accepted characteristics. These characteristics should be addressed broadly in general plan policies and standards. Policies for specific neighborhood districts or development sites can be implemented through the planning tools discussed at the end of this section.

Density

Density is a key concern in designing TOD policies. A higher residential density relative to the community as a whole is necessary to achieve a high level of transit service and maximize the use of land suitable for such developments. Density levels vary significantly based on local circumstances, but a minimum of 15 to 25 units per acre may be required to sustain an appropriate level of transit use and commercial activity. The location of the TOD (regional urban core, town center, suburban development, etc.) and the mix of uses envisioned for a particular TOD will affect the optimal level of density and intensity.

Mixed Use

A mix of uses is also a key element in TOD. Mixed-use development facilitates a pedestrian-oriented environment, encouraging walking and transit over automobile trips. A mix of uses also creates an environment that encourages both day and night activity. For example, residential development supports restaurants and entertainment uses after regular work hours have ended.. This can increase safety by avoiding the "dead zone" atmosphere that many residential areas have by day and that many downtowns and commercial districts have in the evening. Public uses also can contribute to the success of TOD. Some TODs are anchored by a public facility, such as a police station, child care center, recreation center, or government office. Not only does a TOD benefit from the presence of public amenities, but the public also benefits by having these amenities convenient to transit.

A mix of uses may be within the same building (such as first-floor commercial with residential units above) or in separate buildings within a quarter to a half mile of the transit stop. Particularly with the latter case, referred to as "horizontal mixed-use," it is important to provide safe and direct pedestrian linkages between different uses.

It is recommended that general plan standards and definitions of mixed-use development exclude industrial facilities and uses that, even with the best available technology, will contain or produce materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a significant hazard to human health and safety.

Pedestrian Scale

With higher-density mixed-use development, scale is important. Pedestrian scale should be maintained through appropriate street and sidewalk widths, block lengths, the relationship of the buildings to the street, and the use of public spaces.

Safety

In addition to the round-the-clock activity mentioned above, it is important to maintain "eyes on the street" in urban development through the appropriate placement of windows and entrances. Appropriate lighting also contributes to safety and the attractiveness of the development.

Landscaping

A TOD, particularly when it is infill development, may not have large areas available for landscaping. Nevertheless, high quality landscaping should be used to enhance public spaces. The generous use of trees creates a more livable environment and reduces energy costs for cooling. Street trees can make development more pedestrian friendly by providing a barrier between the sidewalk and street.

Circulation

Circulation within a TOD should, in addition to supporting transit, maximize walking and bicycling without eliminating the automobile. Cities and counties may designate certain qualifying areas served by transit as

CASE STUDY: **Integrating Transit-Oriented Development into the General Plan**

The following policies from the agriculture and land use element of the *Fresno County General Plan* illustrate how local jurisdictions can facilitate and guide transit-oriented development:

Policy LU-F.1 The County shall encourage mixed-use development that locates residences near compatible jobs and services.

Policy LU-F.2 The County shall encourage the combination of residential, commercial, and office uses in mixed use configurations on the same site.

Policy LU-F.3 The County shall promote development of higher-density housing in areas located along major transportation corridors and transit routes and served by the full range of urban services, including neighborhood commercial uses, community centers, and public services.

Policy LU-F.4 The County shall selectively redesignate vacant land for higher density uses or mixed uses to facilitate infill development.

Policy LU-F.5 The County shall encourage subdivision designs that site neighborhood parks near activity centers such as schools, libraries, and community centers.

Policy LU-F.6 The County shall encourage the creation of activity centers including schools, libraries, and community centers in existing neighborhoods.

Policy LU-F.7 The County shall seek to reduce the amount of land devoted to parking in new urban non-residential development and encourage the use of shared parking facilities.

Policy LU-F.8 The County shall adopt transit- and pedestrian-oriented design guidelines and incorporate them into community plans and specific plans. The County shall review development proposals for compliance with its adopted transit-and pedestrian-oriented design guidelines to identify design changes that can improve transit, bicycle, and pedestrian access.

Policy LU-F.9 The County shall plan adequate pedestrian-oriented neighborhood commercial shopping areas to serve residential development.

Policy LU-F.10 The County shall encourage school districts to site new schools in locations that allow students to safely walk or bicycle from their homes, and to incorporate school sites into larger neighborhood activity centers that serve multiple purposes.

"infill opportunity zones." (§65088.1) These zones, which must be identified by December 31, 2009, are exempt from county Congestion Management Plan level of service requirements (§65088.4).

Parking

Parking requirements for TOD are typically lower than for conventional development and often specify a maximum rather than a minimum number of spaces. In order to maximize the use of land, parking structures are favored over surface parking, particularly at infill TOD sites. The placement of parking structures should not physically separate the TOD from the surrounding community.

Implementation Tools

Successful TOD implementation is dependent upon TOD-supportive general plan policies enabled by specific zoning codes, development regulations, and design guidelines. To create an effective regulatory and review environment, local jurisdictions can modify existing zoning codes to encourage TOD; tailor development regulations to individual TOD sites where appropriate; develop TOD-friendly design standards; and simplify and streamline the permit and review process.

The following planning tools are typical ways a community can implement TOD-supportive general plan policies.

CASE STUDY: **Integrating Transit-Oriented Development into the General Plan**

The following policies from the 1998 *City of Oakland General Plan* illustrate how local jurisdictions can facilitate and guide transit-oriented development:

Goal: Integrate land use and transportation planning: Integrate transportation and land use planning at the neighborhood, city and regional levels by developing transit-oriented development where appropriate at transit and commercial nodes.

Objective: Provide mixed use, transit-oriented development that encourages public transit use and increases pedestrian and bicycle trips at major transportation nodes.

Policy 1: Encourage Transit-Oriented Development. Transit-oriented development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transportation such as BART, bus, shuttle service, light rail or electric trolley, ferry and inter-city or commuter rail.

Policy 2: Guiding Transit Oriented Development. Transit-oriented developments should be pedestrian oriented, encourage night and day time use, provide the neighborhood with needed goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.

Policy 3: Promoting Neighborhood Services. Promote neighborhood-serving commercial development within one-quarter to one-half mile of established transit routes and nodes.

Policy 4: Linking Transportation and Economic Development. Encourage transportation improvements that facilitate economic development.

Policy 5: Linking Transportation and Activities. Link transportation facilities and infrastructure improvements to recreational uses, job centers, commercial nodes, and social services (i.e., hospitals, parks, or community centers).

Specific Plan

Specific plans are a useful zoning tool for implementing the TOD-related policies and objectives of the general plan. A specific plan can provide detailed land use policies, development standards, and infrastructure requirements in the TOD area. For a further discussion of specific plans, see Chapter 10 as well as the OPR publication *The Planner's Guide to Specific Plans*.

Transit Village Plan

The Transit Village Development Planning Act of 1994 (§65460, et seq.) authorizes cities and counties to prepare "transit village plans" to encourage mixed-use development in close vicinity to transit stations. Transit village plans occupy a niche similar to the community plans described in Chapter 1. What distinguishes them is their specific role in encouraging high-density pedestrian-oriented development around transit stations.

A transit village plan must be consistent with the city or county general plan (§65460.8). The plan is adopted by resolution, like the general plan, and becomes the policy foundation for village zoning provisions, public works projects, and future subdivision activity.

To encourage pedestrian use, the entire village must be contained within a one-quarter mile radius of a transit station. The Act provides that a city or county adopting a plan will be eligible for state transportation funds but does not indicate that areas with such plans will receive priority funding. Transit villages may be excluded from conformance with county Congestion Management Plan level of service standards with the approval of the Congestion Management Agency.

Zoning

Transit-oriented development will typically involve changes in zoning, either as a separate action or in conjunction with a specific plan or a transit village plan. The purpose of the rezoning is to specify uses and allow the necessary density and building intensity for a successful TOD. Zoning changes may take the form of a new zoning district or an overlay zone. Planned unit development (PUD) zoning may also be used for TOD. Considerations for TOD zoning include mixed-use, minimum residential densities, intensity of commercial and office uses, appropriate automobile parking standards, and optimal building setbacks to create pedestrian scale.