The Built Environment

III. The Built Environment

The heritage of Marin's built environment is one of small towns set in the natural and agricultural landscape. Historically, much of Marin's housing was concentrated in its downtowns—the centers of commercial, cultural, and civic activity—and in adjoining, walkable neighborhoods. These places, and the images and lifestyles associated with them, remain among Marin's most treasured and valuable assets.

With the growth of the population and economy in the Bay Area metropolis in the past 50 years, and the increasing influence of automobile access, Marin's urban and rural areas have been subject to the same outward pressure for auto-dependent suburban development as other regions surrounding America's great cities have experienced. Unlike most counties, however, Marin has aggressively sought to protect its irreplaceable natural and agricultural assets from being overrun by low density, low quality sprawl development. And in this effort it has been quite successful.

While many of Marin's open spaces—the habitat for natural and agricultural species—have been protected, the quality of the human habitat has suffered in some cases because of the following:

- Investment in transportation systems has been focused primarily on mobility by private automobile. This has led to fewer public transit alternatives, and to roadways that are congested with automobiles and not well designed to accommodate pedestrians and bicyclists.

- Investment in housing has been focused on the construction of relatively low density developments of single-family houses, often poorly connected to the older neighborhoods and downtowns. This type of development has consumed larger amounts of land to house a small number of residents, is affordable only to those with high incomes, and generates an automobile trip for most activities of daily life.

- Investment in retail and office buildings has been primarily in the form of low density, single-use buildings, each surrounded by its own parking lot. Such buildings are relatively inflexible to respond to the pressures of a changing economy, do not create places compatible with Marin's heritage and character, and generate an increasing number of automobile trips from their occupants.

- Investment in schools, libraries, and other civic facilities has not always been focused in the traditional town centers, and has in some instances put civic activities that bring people together in single-use buildings surrounded by parking lots on the edge of town.

Marin is updating policies that will guide new investment and construction to sustain the cities, towns, and neighborhoods of Marin in ways that better support the life of their residents, while at the same time ensuring the protection of the surrounding open spaces.

An overarching objective of this report is to reinforce sustainable land use practices that supports the core values of the residents of Marin, including:

- Communities designed with many transportation choices.

- The chance to live close to public transportation or to where they work, shop, or play.

- A range of housing types, including those affordable to our workforce and families.

- Housing choices that include mixed-use villages in our downtowns, above parking lots, within commercial areas, and near transit.

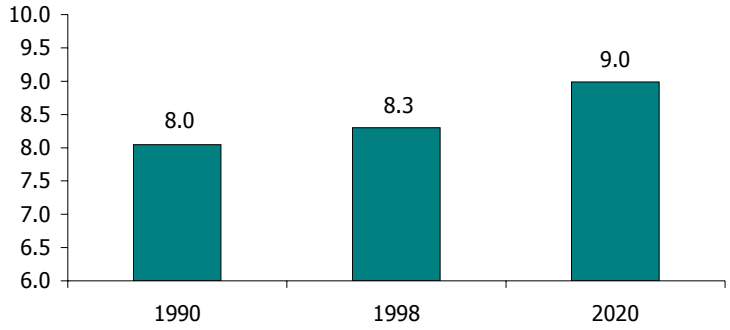
- Environmentally sensitive design and resources conserving construction practices.

A. TRANSPORTATION

➢ Background and trends

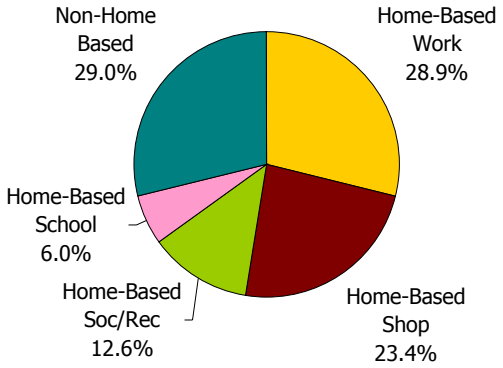
Marin County residents are making more trips within the county. Ninety percent of all trips originating in Marin County are made in automobiles on roads built to standards established several decades ago. In 1998 people living in the county made more than 750,000 trips, an increase of 10 percent in less than a decade, outpacing growth in employment and households (Marin County Congestion Management Agency). The number of daily vehicle trips per household has also increased steadily since 1990 and is projected to continue increasing (Figure III-1). Seventy percent of the daily vehicle trips start from home and go to one destination and back home again. Only 30 percent of the trips are linked (Figure III-2).

Figure III-1
Total Daily Trips per Household in Marin



Source: 2001 Marin County Congestion Management Agency

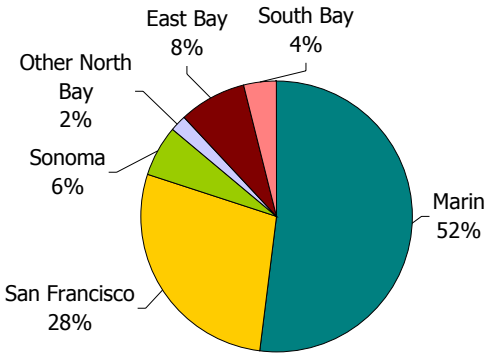
Figure III-2
Total Daily Trips Generated in Marin County



Source: 2001 Marin County Congestion Management Agency

More than half of Marin residents making a commute trip travel to jobs within Marin County, while 28 percent of work trips made by Marin residents are to San Francisco (Figure III-3). During the morning peak hour, 50 percent of the vehicles are going from one Marin location to another Marin location (Figure III-4).

Figure III-3
Work Location of Marin Residents—Percentage by Location/County



Source: 2002 Nelson\Nygaard

Figure III-4
Traffic—A.M. Peak Hour

Marin to Marin	50%
External to Marin	22%
Marin to External	20%
Through	8%

Source: 2001 Nelson\Nygaard

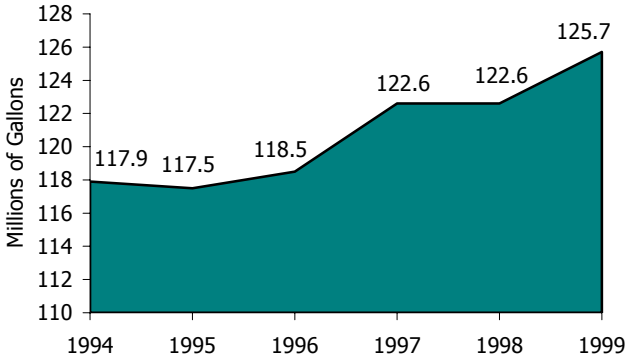
Increasing travel choices is the only way to reduce congestion. Widening freeways and roads to meet projected demand is no longer a feasible solution for traffic relief. Road widening is expensive, may harm the environment and quality of life, and can no longer keep up with demand. A plan for transportation improvements for many modes with effective hubs where transfers can be made will offer choices: rail, ferry, bus, bicycle, pedestrian. Planning to build new facilities needs to be part of an overall system. A fully implemented plan could increase transit ridership by 5,000,000 annual riders and double the number of pedestrian and bicycle trips. Funding from state and federal sources is available to partially pay for some transportation improvements. Local funding is also needed.

1. Automobiles and Roadways

➢ Background and trends

Fuel consumption and transportation costs in Marin are high and increasing. Transportation costs for each Marin household average $7,150 per year. The highest transportation expenses and amount of driving are by West Marin residents, who have fewer transportation choices. Fuel consumption in Marin increased from 118.5 million gallons in 1996 to 122.6 million gallons in 1997. Fuel consumption is increasing at a higher rate than the rate of population growth for some of the following reasons: more frequent driving by residents, driving vehicles with poor fuel economy, traffic congestion, a larger part of the population driving longer distances to work (Figure III-5).

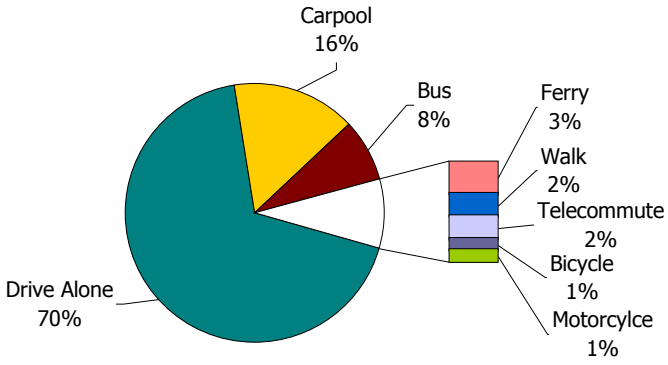
Figure III-5
Marin Vehicle Fuel Consumption



Source: 2001 Marin Economic Commission

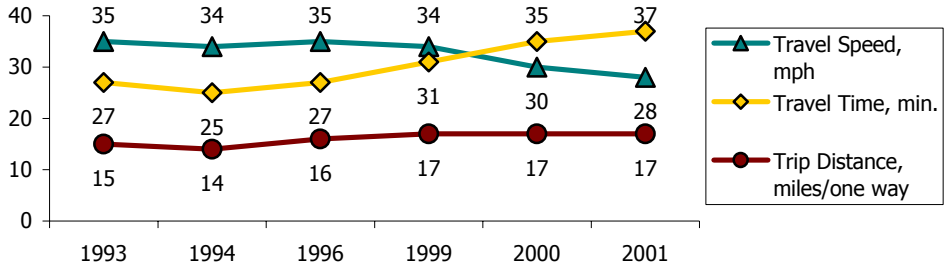
Most people in Marin drive alone, even though carpooling offers advantages. Seventy percent of people driving in Marin drive alone (Figure III-6). Vehicle commute miles and travel times have been increasing and are estimated to continue to increase, while average vehicle speeds have decreased (Figure III-7). Bay Area carpool lane users have saved an average of 16 minutes daily on their way to work since 1993 (Figure III-8). In 2001, vehicles in high occupancy vehicle (HOV) lanes in Marin saved an average of 14 minutes on their southbound morning commute and 3 minutes on their northbound afternoon commute (2001 California Department of Transportation). Carpoolers tend to have the longest commutes, averaging about 22 miles each way.

Figure III-6
Marin County Primary Commute Mode, 2002



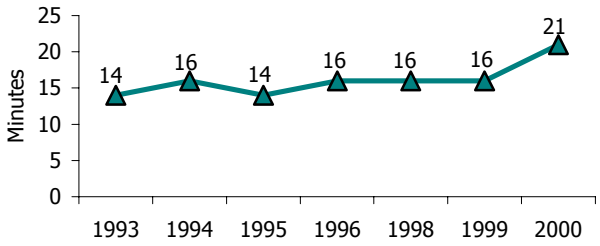
Source: 2002 RIDES for Bay Area Commuters

Figure III-7
Commute Distance and Time



Source: 2001 RIDES for Bay Area Commuters

Figure III-8
Minutes Saved (One Way) by Using Carpool Lane



Source: 2001 RIDES for Bay Area Commuters

West Marin has special issues because of recreational travel to the coast. The Marin County Department of Public Works has completed a Transportation Planning Project for the Point Reyes National Seashore in order to plan mid-term and long-term transit alternatives for visitor travel to and within the park. In addition, the Public Works Department is considering a mid- and long-range scenario of offering a shuttle service to alleviate traffic through Inverness and Inverness Park (Crain & Associates).

➢ Issues

There is a lack of choice for alternatives to the automobile.

a) Historically, transportation funding has been dedicated only to roadways instead of to multimodal transportation expenditures. There are few bike routes between cities.

b) Roadway design should always include safe bike passage and be pedestrian friendly at crossings.

c) Ride-sharing and dial-a-ride services are needed.

d) People need to be further encouraged to use public transit.

People lack incentives to get out of their vehicles.

a) Fewer people are using shuttle buses to the ferry because parking is free.

b) Only selected ferries are served by shuttles.

People need to use more fuel-efficient vehicles.

a) Vehicle fuel consumption is rising in Marin County and the nation.

III

b) Over reliance on imported petroleum raises national security concerns.

Better roadway maintenance is needed, and recycled and energy-conserving materials should be used in road construction.

a) Roadway maintenance should be done frequently and adequately, which would include smooth transitions from the old roadway to the new roadway patching area.

b) The materials used for roadway construction should include recycled vehicle tires.

c) The use of "climate-friendly" concrete, which utilizes recycled products in processing, would use significantly less energy and produce less emission of greenhouse gases than traditional concrete.

d) Road and parking lot shading with tree planting would minimize urban heat islands.

Opposing views about transportation and land use are an issue for planning in Marin and make consensus building difficult.

a) An overarching goal needs to be to decrease the miles driven in automobiles, not to widen the freeway.

b) The freeway needs to be widened and more housing needs to be provided in Marin.

c) Marin has done a great job of protecting the environment but not linking the economy and housing to public transportation.

d) There is spillover traffic from Highway 101 into neighborhoods such as Marinwood and Terra Linda.

➢ Strategies

Increase employer trip-reduction programs to reduce vehicle traffic.

(See also IV. The Economy, Equity and Culture, A. The Economy, Transportation.)

a) Develop a model trip-reduction program and promote the program to businesses.

b) Expand trip-reduction programs for County employees.

c) Design a web site to include a carpool forum to link carpool riders.

d) Require businesses to have an employee carpool program.

e) Require all employers with 50 or more employees to develop and operate a trip-reduction plan.

f) Encourage employers to use the parking cash-out law, which allows workers to trade their employer-provided parking space for money.

Encourage major employers to reduce fuel consumption and increase use of alternative fuels in vehicle fleets.

a) Adopt a County "green fleets" program to eliminate underutilized vehicles from the County's fleet, require the purchase of the most fuel-efficient options for various vehicle classes, and increase the number of low emission vehicles that use alternative fuel.

b) Encourage employers to include hybrid or low emission alternative fuel vehicles in their vehicle fleets.

c) Lobby the State to enact financial incentives such as graduated vehicle license fees and tax credits that encourage fuel efficiency and alternative fuel vehicles.

Secure funding sources for road improvements and repairs, and for transit.

a) Seek funding to maintain street safety.

b) Identify a mechanism to secure additional transit funding.

c) Include an additional ¼ percent sales tax on all vehicle sales to go toward roadway improvements in the county where the vehicle is registered.

Design streets to be accessible to people with disabilities and to bicyclists.

a) Redesign handicapped ramps so they don't exit into the center of the street.

b) Design streets to comply with the Americans with Disabilities Act.

c) Design streets to include bicycle lanes.

➢ Sample indicators

a) Measure the total amount of transportation funding being applied to roadway improvements (Metropolitan Transportation Commission).

b) Track the number of vehicle miles traveled in Marin (RIDES for Bay Area Commuters).

c) Track the number of vehicles registered in Marin (California Department of Transportation).

d) Track the length of average daily commute trips (Metropolitan Transportation Commission).

e) Track the number of residents participating in a registered carpool (RIDES for Bay Area Commuters).

f) Track the amount of time lost to traffic congestion (California Department of Transportation, RIDES for Bay Area Commuters).

g) Track the number of hybrid and alternative fuel (biodiesel and natural gas) vehicles per capita in county government and for all of Marin County (Marin County Department of Public Works).

h) Track fuel sales and the average fuel efficiency of vehicles registered in Marin (California Department of Motor Vehicles, other).

i) Track fuel sales in Marin.

j) Track the number of vehicles per capita in Marin (California Department of Motor Vehicles).

k) Determine the contribution of private vehicle use to overall air pollution and greenhouse gas emissions in Marin.

l) Track the number of accidents per mile of County-maintained and total roads (Marin County Department of Public Works).

m) Record the condition of County-maintained roads (Marin County Department of Public Works).

n) Monitor the percentage of roadway material that includes recycled vehicle tires and other recycled materials (Marin County Department of Public Works).

➢ Sample targets

a) Increase the number of residents participating in registered carpools by 15 percent in 2010 from the 2000 level.

b) Increase the number of hybrid and alternative fuel (such as biodiesel) vehicles by 100 percent in 2010 from the 2000 level.

c) Increase the average fuel efficiency of private passenger vehicles by 10 percent in 2010 from the 2000 level.

d) Decrease vehicle miles traveled in single occupancy vehicles by 20 percent in 2020 from the 2000 level.

e) Decrease the number of private passenger vehicles achieving less than 30 miles per gallon by 20 percent in 2020 from the 2000 level.

f) Increase bike route mileage in the roadways in the City-Centered Corridor by 80 percent in 2020 from the 2000 level.

g) Include recycled vehicle tires in the paving of 50 percent of county roads by 2020.

2. Pedestrian and bicycle

➢ Background and trends

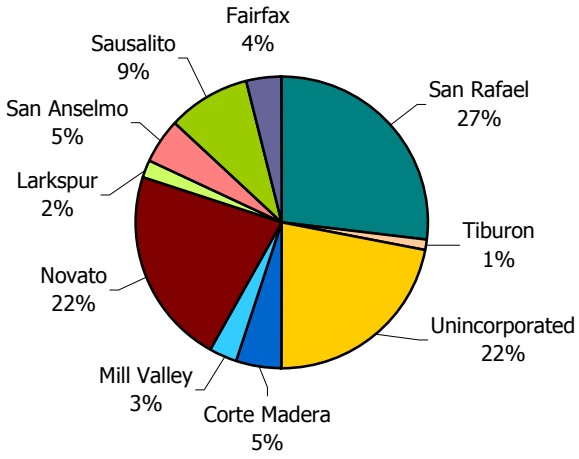
Bicycling and walking as a means of transportation have been growing in popularity. Many communities are working to create more balanced transportation systems and reclaim streets from auto dominance. In addition, recent national and local surveys find that people are willing to cycle more frequently if better bicycle facilities are provided (Marin County Department of Public Works). Through the passage of the Clean Air Act in 1990, the Intermodal Surface Transportation Efficiency Act in 1991, and the Transportation Equity Act for the 21st Century in 1998, there has been a surge in funding available for bicycle and pedestrian projects.

The Marin County Bicycle and Pedestrian Master Plan provides a blueprint for making bicycling and walking an integral part of daily life in Marin County. The Plan calls for the completion of a countywide network of primary and secondary bikeways, pedestrian improvements, and intermodal connections with direct and convenient bicycle and pedestrian ways to major transit stops. The existing bikeway system in Marin's unincorporated regions consists of an incomplete network of approximately 8.75 miles of signed bikeways, although many roads have shoulders wide enough to be signed as bicycle lanes. As of mid-1999, there were bike racks on 88 percent of Golden Gate Transit's buses, all coaches, which are 40 feet in length. Currently, state law prohibits the installation of bicycle racks on express buses, which are 45 feet in length.

Bicycle and pedestrian safety is an important issue affecting the willingness of people to walk or ride bicycles. In 1998, 27 percent of traffic fatalities were pedestrians (Marin County Congestion Management Agency). Between April 1996 and April 1999, approximately 100 serious pedestrian accidents per year were reported in Marin County (Figure III-9). According to an April 1991 Lou Harris Poll, there is a large reservoir of potential bicyclists in unincorporated Marin who do not ride (or ride less often) simply because they do not feel comfortable using the existing street system and/or do not have appropriate bicycle facilities at their destinations. Students riding a bicycle the wrong way on streets account for the greatest number of recorded bicycle accidents in California. This statistic points to the need for safety education. Fewer than 10 percent of Marin students have received bicycle-safety education, and 51 percent of the students incorrectly answered that bicyclists should ride against traffic,

rather than with traffic. Data from April 1996 to April 1999 indicates that approximately 170 bicycle–motor vehicle crashes per year were reported in Marin County. Of those crashes, approximately 39 occurred in the various unincorporated areas of the county. This number of crashes is average compared with those in other communities in California.

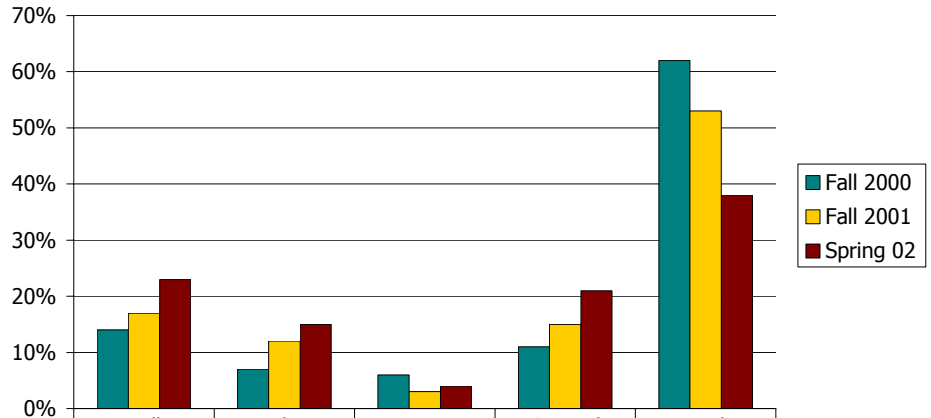
Figure III-9
Marin County Pedestrian Crash Distribution



Source: 2001 Marin County Department of Public Works

Since 21 percent of all morning peak-hour trips are home-based school trips, strategies to encourage trip reduction are an effective way to reduce traffic congestion. About 11 percent of Marin students report riding a bicycle to school daily or in good weather, while 89 percent say they ride either rarely or never. Safe Routes to Schools programs that promote walking, biking, or carpooling to Marin County schools are increasing in popularity (Figure III-10). Auto trip reductions of 15 percent were recorded at schools receiving Safe Routes training in 1999–2000.

Figure III-10
Safe Routes to School Pilot Program



	Walk	Bike	Bus	Carpool	Drive Alone
Fall 2000	14%	7%	6%	11%	62%
Fall 2001	17%	12%	3%	15%	53%
Spring 02	23%	15%	4%	21%	38%

Source: 2001 Safe Routes to Schools

Worldwide, the United States ranks as the first-world country with the lowest percentage of people who walk and bicycle for transportation. A year 2000 report by Rutgers University showed walking and biking for only 6 percent of trips in the United States, compared with 12 percent in Canada, 16 percent in England and Wales, 34 percent in Switzerland and Germany, 39 percent in Sweden, and 46 percent in the Netherlands. In the United Kingdom, Germany, the Netherlands, Denmark, and Japan, there has been a trend to build model bicycle and pedestrian communities to demonstrate the effectiveness of shifting auto trips to bicycle and pedestrian trips. Recent federal and state initiatives urge that the needs of bicyclists and pedestrians be included in the planning, design, maintenance, and construction of all roadway and transit projects (U.S. Department of Transportation, 2001 California Department of Transporation).

➢ Issues

Improvements are needed to make walking and bicycling feasible and safe.

a) People want to be able to walk and bike to work and to other destinations, but the routes are not continuous, and they discourage biking and walking.

b) Pedestrian right-of-way improvements are needed to encourage walking.

c) Residents have expressed the need for building paved sidewalks for pedestrian safety while retaining a rural or small-town character of the community.

d) Choices of transportation to cultural events and to parks and open spaces need to be developed.

e) There needs to be a countywide effort to develop safe routes to schools and to find ongoing funding to support Marin's successful Safe Routes to Schools program, which was chosen in 2000 by the National Highway Traffic Safety Administration to be a national model.

f) We need to improve sidewalks, bring back school buses, create a network of bike routes, and reopen neighborhood schools so that children can live close to schools.

g) Marin's senior population needs safe nonmotorized transportation networks in order to be able to continue walking and bicycling as a safe physical activity.

h) Trips of two miles or less could be shifted to walking and biking if safe nonmotorized networks were provided. At present, 25 percent of all trips in the United States are for one mile or less, but 75 percent of them are being made by car. Forty percent of all trips are for two miles or less (1995 U.S. Department of Transportation).

i) A lack of bicycle parking is an important reason why people do not ride their bicycles for errands and local trips. Attended bicycle parking has worked well at transit hubs in other Bay Area counties.

j) The County needs to track increases and decreases of bicyclists and pedestrians by doing regular traffic counts.

k) Marin could become a model community by building the bicycle and pedestrian network identified in the County's Bicycle and Pedestrian Master Plan. Implementation of the plan could show how improved infrastructure leads to increased bicycle and pedestrian trips, and a decrease in the number of crashes.

➢ Strategies

Develop facilities to encourage walking and bicycling.

a) Enact the roadway design and maintenance criteria that accommodate bicycle and pedestrian needs (Highway Design Manual).

b) Implement the recommendations in the Bicycle and Pedestrian Master Plan, including a Class 1 north-south bikeway along the railroad right-of-way parallel to Highway 101, and an east-west bikeway that would run parallel to Sir Francis Drake Boulevard along surface streets and along the railroad right-of-way where feasible, and in West Marin.

c) Include bicycle and pedestrian routes, bicycle storage facilities, and showers in all new commercial and industrial developments, and schools.

d) Create incentives for businesses to install shower facilities to encourage people to bike to work.

e) Continue applying for grants for bicycle and pedestrian infrastructure projects, and seek to expand funding sources for these important and cost-effective methods of transportation.

f) Include bicycle stations at major transit nodes such as the Manzanita park and ride lot, the San Rafael transit center, the Larkspur ferry terminal, and future Sonoma Marin Area Rail Transit stops. These facilities should offer bike repair, storage, and rentals.

g) Do an assessment of roads with shoulders wide enough to be designated as bicycle lanes, and stripe and sign these roadway segments as bike lanes.

h) Require any event for more than 1,000 people to have bicycle parking.

i) Establish public bike-share programs.

j) Locate bicycle racks near bus stops, and provide rental bikes for bus and rail users.

k) Publicize the benefits of bicycle riding to potential cyclists.

l) Continue to promote and find public funding for the Safe Routes to Schools program.

m) Encourage bicycle riding for seniors and persons with disabilities by promoting electric, three-wheeled, and recumbent bicycles.

n) Educate County staff on the needs of bicyclists and pedestrians, and new design techniques for accommodating them.

➢ Sample indicators

a) Do annual traffic counts of bicyclists and pedestrians in key locations to gauge increases and decreases (Marin County Department of Public Works).

b) Track miles of maintained bicycle-way in Marin (Marin County Department of Public Works).

c) Track number of vehicle-bicycle collisions annually (Marin County Department of Public Works).

d) Track number of vehicle-pedestrian collisions annually (Marin County Department of Public Works).

e) Track number of students walking or biking to school in Safe Routes to Schools program (Marin County Bicycle Coalition).

f) Measure number of participants in Bike to Work Day (Marin County Bicycle Coalition).

g) Track the number of county government employees and all Marin County employees (per capita) who bike or walk to work or school (Marin County Department of Public Works).

➢ Sample targets

a) Increase the miles of maintained bicycle-ways in Marin by 200 percent between 2000 and 2010.

b) Increase the number of students walking or biking to school by 100 percent in 2010 from 2000 level.

c) Increase participation in Bike to Work Day by 200 percent in 2010 from 2000 level.

d) Achieve an increase from 3 percent of trips in Marin County made by walking or biking in 2000 to 10 percent by the year 2010.

e) Decrease pedestrian and bicycle accident levels by 15 percent in 2010 from the 2000 level.

f) Increase the number of people who walk or bicycle to transit hubs by 100 percent by 2010 over the level in 2000.

g) Ensure that by 2010, 100 percent of public events that draw more than 1,000 people will have attended bicycle parking.

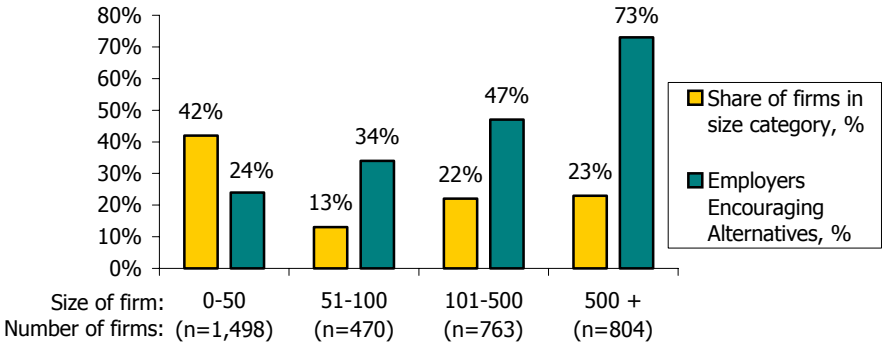
h) Complete the four highest priority multiuse pathway projects by 2010. These projects include, from south to north: opening the Alto Tunnel, completing the Central Marin ferry connection, opening the Cal Park Hill Tunnel, and building the multiuse pathway parallel to the planned commuter rail.

3. Bus

➢ Background and trends

Plans to expand local and express bus service will improve service and increase ridership. At present, 54 percent of local transit users need to transfer from one bus to another or from one mode source to another to get to their destinations. The canal neighborhood of San Rafael has the highest bus trip activity in Marin County. Marin City has the second highest activity. The need for transit and paratransit service is expected to increase. Bus ridership is expected to increase from 13,200 to 16,900 between 2000 and 2020, while the demand for paratransit consistent with the Americans with Disabilities Act is expected to increase by 23 percent during the same period. Marin employers can contribute to bus transit use. Generally speaking, the larger the business, the more the employer encourages alternative transportation modes, including bus tickets at reduced fares (Figure III-11).

Figure III-11
Percentage of Employers Encouraging Alternatives by Firm Size



Source: 2001 RIDES for Bay Area Commuters

Marin Bus Transit Futures, a comprehensive long-range vision combined with practical strategies for implementation over the next 20 years, includes local express bus service at 15-minute intervals along the 101 corridor, intercommunity bus routes, specialized local community services and shuttles, school shuttles and buses, and additional bus transit junctions with timed transfers. Proposals made in the Marin-Sonoma Express Bus Study, prepared by Golden Gate Transit, would expand express bus service between Sonoma and Marin on Highway 101 to more than double the current service levels and serve major employment centers in Marin, although recent funding shortfalls have resulted in route reductions. When the HOV lane system is completed, buses would take advantage of faster travel time on Highway 101.

➢ Issues

Bus transportation service needs to be improved.

a) The public transportation system for moving within the county is not seamless.

b) An intra-Marin bus system is needed to reduce automobile use, with a plan for bus routes within a quarter mile of locations where 90 percent of the population lives.

c) Public transportation service is needed seven days a week, including grocery store jitneys and employee jitneys.

d) Day and year passes for public transit are needed.

Increased funding and marketing for alternatives to the automobile are needed.

a) A carbon tax with the proceeds used for public transit is needed.

b) Marketing for public transportation, walking, and biking is needed.

c) The Golden Gate Bridge toll increase provides an opportunity to market bus service to San Francisco commuters.

d) Marin needs to become a self-help county to get more matching funds.

➢ Strategies

Increase ridership with improved bus service.

a) Implement the Marin County Transit Master Plan.

b) Schedule buses to run frequently, have extended hours, and have seamless connections between buses.

c) Implement priority for buses at traffic signals.

d) Provide more bus trips over the Richmond–San Rafael Bridge.

e) Review local bus routes to determine proximity to park entrances. Explore opportunities to increase bus transportation to regional state and national parks, especially on weekends.

f) Capture some value of increased taxes for transit.

g) Include diverse sizes and routes for buses to serve neighborhoods.

h) Complete transit connections between tourist attractions and buses.

i) Use buses that vary in size depending on capacity demands, and include amenities such as music and lap top computer stations on buses.

j) Enhance service to such constituents as school children, low income people, the elderly, and day-care centers.

k) buses for transport of schoolchildren in the morning and afternoon, and for senior transport midday.

l) Employ improved bus technology for bus details, using global positioning systems to identify bus locations and estimated arrival times.

Create incentives for people to use buses.

a) Develop a public relations campaign for public transit.

b) Increase bus use with incentives including free ride days, extended service, and rewards for riders.

c) Require employers to offer employees incentives to use alternative transportation instead of driving alone.

d) Give creative names to buses, as is done in Palo Alto.

e) Use clean-fuel buses and ferries, such as those running on biodiesel.

f) Provide passes and subsidies for students, low income people, and seniors.

g) Allow transfers and encourage use of Fast Passes between rail, bus, and ferry services.

h) Work with businesses to wholly or partially subsidize employee bus commuting.

i) Make the experience of using the bus pleasant, safe, and fun.

Support public transit with complementary land use policies.

a) Design smart growth and infill development to support rail and bus modes.

b) Identify transit hubs, increase residential densities, and allow mixed use at the hubs.

➢ Sample indicators

a) Measure the number of bus runs (Golden Gate Transit).

b) Measure bus ridership (Golden Gate Transit).

c) Measure fuel type and quantity used on buses (Golden Gate Transit).

➢ Sample targets

a) Increase bus ridership by 15 percent in 2010 over 2000 level.

b) Increase clean fuel usage such as use of biodiesel in buses and ferries by 20 percent by 2010 over 2000 levels.

4. Rail

➢ Background and trends

Rail is part of a multimodal system. The proposed Sonoma-Marin Rail Transit (SMART) system will run from Cloverdale to San Rafael on a railroad right-of-way that is already in public ownership. A second phase will connect to a ferry terminal in central Marin. Trains will run every 30 minutes during peak periods, carrying an estimated 5,100 riders per day. Rail stations will become intermodal hubs, with convenient service from local and express buses and with at least one major ferry link.

Trains will serve inter-county trips between Sonoma and Marin, as well as trips between Novato and San Rafael. There will be two stations in Novato and two in San Rafael, one near the Civic Center and one downtown.

➢ Issues

Local support and planning are needed for a successful rail transit system.

a) Local support for rail transportation is needed if rail is to be adequately funded.

b) Cities with proposed rail stations need to carefully plan around these areas.

c) Tunnels for rail need to be planned as appropriate.

➢ Strategies

Plan for effective service, incentives to attract riders, and land use to support transit.

a) Develop a long-term vision for transit-station locations, and auto and bicycle parking, that would include demand under the Sonoma County build-out.

b) Utilize the existing rail right-of-way and also extend rail to a new ferry terminal at San Quentin.

c) Complete transit connections between tourist.

d) Remove a lane of freeway and replace it with a train monorail or similar "people mover".

e) Select trains that use clean fuel.

f) Allow transfers, and encourage use of Fast Passes between rail, bus, and ferry services.

g) Include free bicycle repair, storage, and rentals at transit stations.

h) Encourage employers to subsidize ticket prices for employees' train tickets, and provide shuttle service or free bicycles from the train station to the place of employment.

i) Design smart growth and infill development around rail stations.

➢ Sample indicator

a) Track rail ridership (Sonoma Marin Area Rail Transit).

➢ Sample target

a) Enact rail transportation in Marin and Sonoma by 2010.

5. Land Use

➢ Background and trends

Smart infill improves transit viability. "Smart infill" concentrates development in areas that can be served by transit, bicycle, and pedestrian travel, and includes multiple uses—residences, offices, and stores—so that people can walk to work and shopping. Smart infill development tends to result in fewer increases to traffic congestion, but will improve the viability of transit and other modes of transportation.

➢ Issues

Land use policies are needed to support transit and reduce traffic congestion.

a) The public needs more information about housing density, parking demand, and vehicles per household.

b) The availability and low cost of public parking throughout the county creates a disincentive to utilize alternative modes of transportation.

c) Incentives for local hiring are needed to reduce commuting.

d) The lack of affordable housing and transit requires the lower income Marin workforce to drive long distances to work. Traffic congestion is worse as a result.

e) Affordable workforce housing and multiple services, including child care, need to be located near transit centers.

f) Coordination with neighboring counties is needed.

➢ Strategies

Increase densities and change parking requirements in areas that can become transit nodes.

a) Locate new mixed-use development within ¼ to ½ mile from transit, and provide pedestrian and bicycle connection to adjoining uses.

b) Purchase land for affordable housing.

c) Establish minimum-density zoning in infill areas and increase the minimum densities near transit nodes.

d) Transfer development rights for additional very low to moderate income housing from environmentally sensitive areas to urban areas near jobs and transit.

e) Rezone the San Quentin Prison site to enable planning for a transit-oriented, sustainable community.

f) Amend commercial and office zoning districts to allow mixed-use development and rezone commercial areas to allow for mixed-use infill development in or above parking lots.

g) Amend parking requirements to require 80 percent compact parking spaces in each parking lot, and bicycle parking.

h) Include provisions for increasing building height to accommodate parking structures with housing.

i) Eliminate the policy requiring "no net loss of parking," provided that traffic-demand-management or similar strategies are employed.

j) Encourage the conversion from gas stations to stations that provide natural gas, electric-vehicle recharge, biodiesel, and hydrogen fuel cells.

Analyze the relationship between traffic congestion and development. Discourage development in environmentally sensitive or hazardous areas.

a) Do not intensively develop floodplains, except for already developed infill areas in the City-Centered Corridor.

b) Establish a nexus between the need to preserve land from development and the need to decrease traffic congestion on major roadways, such as Highway 101 and expand the use of conservation easements in applicable areas.

Use economic incentives to support land use and transportation goals.

a) Provide incentives and bonuses for infill and transit-oriented development.

b) Work with local lenders to offer location-efficient mortgages.

c) Develop affordable housing to attract service-sector employees, the younger population, and the aging population.

d) Prioritize purchasing land for environmental protection in environmentally sensitive areas, in areas designated as community separators, and in greenbelt areas.

e) Encourage the State of California to adopt tiered vehicle-registration fees to discourage the use of gasoline-consuming vehicles.

f) Encourage a higher tax on owners of a high number of vehicles per household and/or vehicles with low fuel efficiency.

g) Allow people using public transit to write off fees from their personal taxes.

h) Publicize the comparative costs to operate a vehicle (including insurance, maintenance, gas, and road repair) versus traveling by bicycle, bus, train, or ferry.

Land use policies that support telework can contribute to a reduction in traffic congestion.

a) Promote telework and satellite work centers to help serve all Marin residents, and to decrease vehicle traffic within the county.

b) Modify the Development Code to encourage telework and satellite workstations.

c) Develop additional performance standards and regulations to encourage home occupations.

d) Offer home office credits in the property tax structure.

➢ Sample indicators

a) Track density of new housing starts (Marin County Community Development Agency).

b) Measure percentage of new housing starts that qualify as infill (Marin County Community Development Agency).

c) Measure the number of businesses with telework programs (Marin Economic Commission).

d) Track the level of automobile subsidy with a goal to decrease it.

e) Track the number of parking spaces and bicycle racks/lockers, and track the use and vacancy of both.

➢ Sample targets

a) Increase the percentage of businesses that have telework programs by 30 percent by 2010.

b) Increase the amount of new housing that is infill/mixed by 50 percent by 2020.

B. ENERGY

(See also II. Natural Systems, A. Environmental Quality, 6. Energy.)

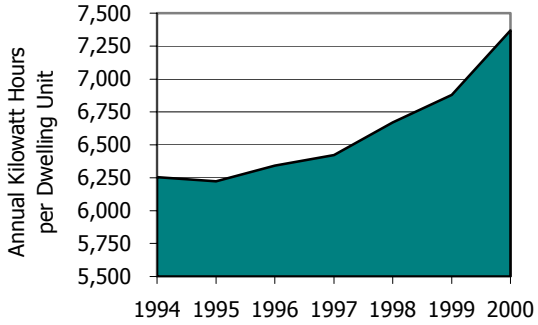
➢ Background and trends

The manner in which the built environment is designed, constructed, and operated has a significant impact on energy use. Built-environment design decisions on every scale—from the region to the city to the neighborhood block, street, and building—determine the rate at which people use energy in their daily lives. On the regional and local scale, Marin County residents consume energy to light, heat, cool, and run appliances in homes and offices, and to operate motor vehicles, mostly single-occupant private automobiles.

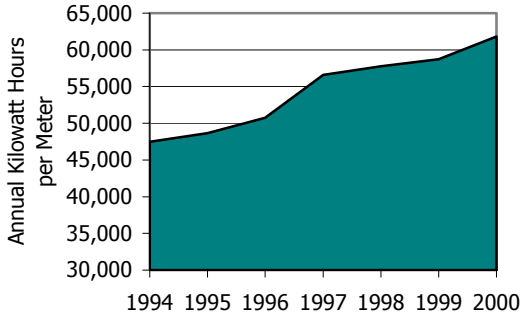
The amount of energy consumed by residential and nonresidential users in Marin is increasing. Residential energy consumption has been climbing since 1995, with the greatest jump occurring between 1999 and 2000 (over 7 percent), but with little increase in population (approximately 0.7 percent). Total consumption increased 18.5 percent from 1995 to 2000, from 619 million kilowatt-hours (kWh) to 734 million kWh. The per capita rate increased 17.7 percent in the same period. Nonresidential energy consumption has also increased, from 47,742 kWh per meter in 1994 to 61,828 kWh per meter in 2000, a 30 percent increase. Total consumption increased from 646 million kWh to 834 million kWh during the same period. During the same time frame, the number of nonresidential meters actually decreased, from 13,608 in 1994 to 13,489 in 2000 (Figure III-12).

Figure III-12

Residential Energy Consumption, 1994–2000



Nonresidential Energy Consumption, 1994–2000



Source: 2000 California Energy Commission

In an effort to counteract these trends, the County of Marin is encouraging energy efficiency by providing rebates and technical assistance to County employees and residents. As of February 4, 2003, Marin County has provided $45,456.29 in energy efficiency rebates and saved county residents and County employees $80,993.93 in projected energy costs.

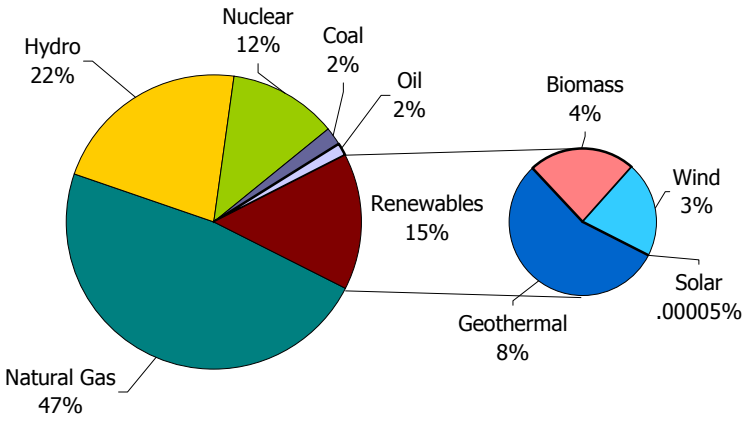
In spite of the trend toward higher energy use in Marin, the increase in use of energy efficient appliances has resulted in reduced energy intensity nationwide. The average electricity use of new refrigerators declined from 1,735 kWh per year in 1972 to 685 kWh per year by 1999. At the same time, new refrigerators became larger and had more features. The average energy efficiency of new refrigerators nearly tripled from 1972 to 1999 (American Council for Energy-Efficient Economy). The sales of energy-efficient compact fluorescent lamps (CFLs) increased nearly fivefold from 1990 to 1999 in the United

States. Eighty-two million CFLs were sold in North America in 1999. National energy intensity (energy use per unit of GDP) fell 42 percent between 1973 and 2000. About three-quarters of this decline is attributable to real energy efficiency improvements, and one-quarter is due to structural changes and fuel switching (American Council for Energy-Efficient Economy).

Although more than half of California's energy is generated from nonrenewable sources, primarily natural gas, there is a gradual trend toward diversification. Over the past 10 years, the relative makeup of California's generation sources has remained steady. The greatest percentages of electricity generated are from natural gas, hydroelectric power, and nuclear energy, respectively. Overall, use of fuel oil has had the largest decrease, followed by nuclear, coal, and renewables decreasing by less than 1 percent. The percentage of natural gas used in cogeneration facilities, which generate electricity by using both oil and natural gas, has grown, while natural gas for combustion power plants has decreased.

While the majority of energy consumption involves natural gas, there has been a gradual migration toward diversifying the mix of energy resources in California (Figure III-13).

Figure III-13
PG&E Energy Sources



Source: 1999 California Energy Commission

Although solar power provides a minuscule percentage of California's energy, solar electric generation (photovoltaics) is gradually increasing in Marin. Four system permits were approved in 2000, and 44 permits were submitted from January 2001 to October 2001 (Marin County Community Development Agency).

Alternative energy sources are growing in popularity. Solar energy use within the county for both electricity and heat is steadily growing in popularity. The number of permits granted by Marin County alone for the installation of photovoltaics increased from 4 in 2000 to 44 in 2001 in the unincorporated areas. This growth in solar energy use has been primarily in the residential and small business sectors of Marin. A maturing renewable energy infrastructure also exists in Marin to support this growth and includes distributors, designers, installers, and maintenance. Passive solar, solar thermal, and photovoltaic systems are growing in popularity throughout the state of California due to reduction in cost (approximately $9/watt), state government subsidies ($4.50/watt), improvement in technology, and the clean energy they produce (Marin County Community Development Agency).

1. Energy Assessment

➢ Issues

More information about energy sources and consumption is needed.

a) Houses are being designed for greater energy efficiency, but the occupants are using more energy.

b) The sizes of houses are increasing, and there are fewer people in each household.

c) The energy shortage creates a new challenge to air quality, which has generally been improving in the Bay Area. The recent energy shortage has prompted the use of small, polluting power generators.

d) The increase in natural resource costs is taking away from essential services.

e) Monitoring different land uses and their energy consumption is necessary.

➢ Strategies

Carry out an energy assessment to measure energy sources, and use it in order to have baseline data.

a) Inventory energy sources (such as coal, nuclear, natural gas, hydroelectric, renewable), including their economic and environmental costs and reliability.

b) Inventory current use of energy, and estimate future needs by end-use sector (for example, residential, commercial, industrial, agricultural, institutional).

c) Identify opportunities for energy efficiency in each end-use sector, and prioritize by economic, equity, and environmental benefit criteria.

d) Use the International Council of Local Environmental Initiatives Cities for Climate Protection Campaign to measure and set targets for greenhouse gas emissions. Reducing these emissions will necessitate decreased petroleum-based energy use.

e) Map locations and availability of renewable resources in the county, including solar, wind, small hydro, and methane from agriculture and landfills. Identify opportunities for using renewable resources and clean-distributed generation in existing and new developments, and in redevelopment projects.

f) Assess the financial impacts of the status quo and proposed energy policies on populations such as low income residents, on small businesses, and on essential services (such as schools, fire, and police).

Establish goals for reduction of resource and energy consumption, and monitor progress.

a) Set goals and targets for conservation, efficiency, and renewable energy. Goals need to be clear, bold, and timely. The county government should set a higher goal for itself than for the private sector (residential, commercial, industrial, and agricultural) to lead by example.

b) Update planning documents to encourage energy efficiency, such as the Countywide Plan and all Community Plans; the zoning ordinance, including use permits and variances; the subdivision ordinance; the building code; the planned-development ordinance and guidelines; environmental impact review guidelines; and other relevant special-purpose ordinances.

c) Use indicators (such as energy consumption and peak demand, or renewable energy production) to determine progress toward goals and measure the success of programs and policies.

d) Research and adapt valuable policies and programs that have been created and implemented by other local governments throughout the state, nation, and world.

e) Analyze energy policies by sustainability criteria that include the true economic, social, and environmental costs to the community and the society at large.

f) Compile an energy report biannually to track the progress in meeting the goals established by the County for each sector. Modifications of the County's energy strategies should be proposed as necessary to achieve the goals. This report should track the indicators for residential, commercial, and public facilities. A breakdown by city and county jurisdictions will be helpful in determining challenges and successes.

g) Make public transmission lines available to potential renewable energy generators. There are regulatory and institutional hurdles to major renewable energy generation projects. For example, MMWD has tried in the past to retrofit existing dams to generate hydropower, but PG&E denied access to its transmission lines.

h) Refine the data being used to calculate Marin's ecological footprint to accurately reflect local conditions, and develop plans to reach goals.

➢ Sample indicators

a) Track residential energy consumption (California Energy Commission).

b) Track nonresidential energy consumption (California Energy Commission).

c) Track the sources ("mix") of energy provided to Marin County residents and businesses (California Energy Commission).

d) Track greenhouse gas emissions through Cities for Climate Protection (Marin County Community Development Agency).

e) Track Marin's ecological footprint (Redefining Progress).

➢ Sample targets

a) Increase the amount of Marin's energy coming from renewable sources by 25 percent by 2010 from the 2000 level.

b) Decrease greenhouse gas emissions by 20 percent by 2020 over 1990 levels.

c) Reduce Marin's ecological footprint by 20 percent by 2020 over 2000 levels.

2. Government Initiatives

➢ Issues

The County and other public agencies can lead by example in promoting energy conservation and use of renewable energy sources.

a) There is an increased desire to move toward renewable energy, but there is a need for more leadership in government at all levels on this issue.

b) Long-term government policies and programs for energy efficiency need to be adopted. The potential for decreased energy consumption is significant. California decreased energy use by 12 percent in 2001 over 2000 levels due to conservation, energy-efficiency programs, and retrofits.

c) More local government staff needs to be knowledgeable about energy issues.

d) Marin Municipal Water District is the largest energy user in the county. There is a conservation, efficiency and renewable energy opportunity here.

Changes in government regulations are needed to support changes in energy use.

a) Policies and programs encouraging energy efficiency and conservation are needed.

b) Green building construction and compatible permitting procedures across jurisdictions need to be encouraged.

Government should sponsor outreach and initiatives to encourage energy efficiency and use of renewable energy sources.

a) There is a lack of solar insulation information for Marin County.

b) Increased major renovations and significant remodels are opportunities for energy efficient retrofitting.

c) People need to be more proactive in becoming energy efficient.

Financial issues concerning utilities involve a complex and changing mix of private funds and public regulation. Public funding is available for energy conservation programs.

a) There is increasing uncertainty in the energy market. Utilities have gone from a regulated monopoly to a more competitive market. System reliability, price stability, bankruptcy, and various public policies cause uncertainty about the future of energy.

b) After deregulation, approximately five corporations purchased most power plants in California. Less than 20 percent of in-state capacity is now owned by in-state utilities.

c) The energy utility companies are currently in charge of handing out Public Goods–funded rebates for energy-efficient measures to consumers rather than nonprofit or government distribution of those funds.

d) The State of California has to pay pollution fees for power plants under current negotiated energy contracts. This provides no incentive for plant owners and operators to reduce pollution.

e) There are opportunities for business and commerce to conserve energy. Funding for incentives needs to be investigated. Requirements for businesses to conserve energy could be enacted at the point of sale.

f) Money is available for energy programs from the state and federal governments, which all Marin local governments could be seeking out.

g) There is a lack of state funding for renewable energy resources for affordable housing.

New laws are needed to support energy efficiency and renewable energy.

a) Some strategies and standards can be implemented only at the state or federal level.

b) Local elected officials and staff need to support and advocate for energy related legislative initiatives.

➢ Strategies

Public and private organizations and businesses should demonstrate leadership in conservation and renewable energy use.

a) Establish countywide energy efficient and green procurement policies for all goods and services.

b) Require all new public facilities to meet the Leadership in Energy and Environmental Design (LEED) Silver standards.

c) Assist special districts, such as school, water, and sanitation districts, to investigate and implement energy efficiency and renewable energy measures.

d) Create a Joint Powers Authority or other joint venture between local jurisdictions to aggregate energy efficiency and renewable energy programs and initiatives. Since most Marin jurisdictions are small, they can benefit by sharing resources, administration, and infrastructure required for implementing energy strategies.

e) Recapture and/or create energy through falling water from reservoirs and water pressure reduction in distribution buildings and irrigation systems.

f) Encourage the MMWD to enact a solar roofs program, if the district pursues desalinization of bay water.

The County of Marin can become a model for others by conserving energy and using renewable sources in County buildings.

a) Continue to implement all cost-effective energy efficiency and renewable energy measures. Install solar power generation capabilities on County buildings.

b) Continue to retrofit County buildings for energy efficiency and require County equipment to meet Energy Star standards for efficiency.

c) Meet the requirements for the County of Marin to become certified as a green business.

d) Coordinate with the City and County of San Francisco to establish a partnership and/or use model programs such as installing photovoltaics on municipal buildings.

Change regulatory procedures and implement programs to increase energy efficiency and use of renewable energy sources.

a) Adopt the zoning code and design review guidelines to eliminate regulatory barriers to conservation, efficiency, and renewable energy.

b) Implement the Single Family Dwelling Energy Efficiency Ordinance. This ordinance will reduce energy consumption in homes over 3,500 square feet to Title 24 levels of a 3,500-square-foot house.

c) Use solar energy and other renewable energy sources, where feasible, in existing and new structures to meet the criteria of the Single Family Dwelling Energy Efficiency Ordinance.

d) Mandate solar-oriented building design for residential and nonresidential buildings.

e) Enforce Section 20.20.030 of the Development Code requiring that subdivisions "provide, to the extent feasible, for future passive or natural heating or cooling opportunities."

f) Require that energy efficiency be addressed in the building project descriptions as a condition of approval from the Planning Division. Require, at a minimum, that plumbing and electrical connections be provided to facilitate the retrofit of solar water heating and solar electric or other future clean generation technology.

g) Establish energy efficiency standards to be met upon change of ownership of residential and commercial buildings.

h) Incorporate cost-effective energy efficiency and renewable energy use as criteria for design review, environmental studies, and local programs that affect energy use.

i) Implement community aggregation (as may be allowed if the Community Choice or similar bill becomes law) when feasible to provide reliable and cost-competitive electricity from clean and renewable sources to reduce the county's greenhouse gas emissions.

Establish a variety of outreach activities and incentives to encourage energy efficiency, use of renewable energy, and awareness of the ecological footprint.

a) Create a regional energy office to serve all participating local governments and offer education, policy development, rebates, technical assistance, and renewable energy procurement. Provide incentives for property owners or renters to conserve energy or install renewable energy systems.

b) Train architects and contractors in basic energy efficiency, renewable energy, and green building design practices through seminars sponsored by the County. Host workshops for the public and building professionals on cost-effectiveness for energy efficiency, passive solar energy, and other renewable energy.

c) Encourage the use of the U.S. Green Business Council's Leadership in Energy and Environmental Design (LEED) Rating System for new commercial development by providing free technical assistance and introduction to LEED.

d) Utilize the Building Energy-efficient Structures Today (BEST) program to provide resources, technical assistance, and outreach to promote energy efficiency and green building. Promote energy efficiency upgrades in existing buildings through education and/or retrofit service for all structures—commercial, residential, public, and private.

e) Adopt and reprint the Alameda County Green Building Guidelines with information on the County's energy efficiency and green building programs. Provide this resource to other local jurisdictions and the public.

f) Support existing water conservation programs and develop new ones. Since energy is required to pump and treat water and to heat it at the end use, water conservation is an important energy conservation strategy as well.

g) Allow permit fee waivers and over-the-counter permits for solar energy equipment to stimulate the advancement of solar energy applications.

h) Enact a program to accelerate the weatherization of low income residences and rental units.

i) Encourage the replacement of wood stoves with natural gas or pellet stoves.

j) Conduct public education on Marin's ecological footprint, and promote choices that utilize resources efficiently.

Make use of public and private financial strategies to pay for increasing energy efficiency and increasing use of renewable energy sources.

a) Facilitate access to rebates, loans, grants, and other forms of public assistance available through local, state, and federal programs.

b) Develop public/private partnerships for loans, financing, and leases.

c) Facilitate energy efficient retrofit performance contracting with energy services companies.

d) Utilize revenue bonds, revolving loan funds, and other mechanisms available to local governments.

e) Utilize the Public Utilities Commission funds for energy efficiency rebates and renewable energy in public and private buildings.

f) Use energy services companies (ESCOs) to do energy efficient retrofits in public and private buildings. Schools, hospitals, local government buildings, and businesses can all take advantage of the services of an ESCO. Savings on cost of energy due to retrofits can be utilized for additional energy retrofits, energy projects, and/or other sustainability projects with money back via savings.

g) Promote programs such as PG&E's CARE and Energy Partners Programs, which provide free weatherization service to qualified low income individuals and families.

Advocate for legislation at the state and federal level.

a) Track and support legislative efforts to promote energy efficiency and renewable energy development on the local level.

b) Work with the county's state and federal legislators to promote legislation to implement sustainable energy strategies that can only be implemented on the state or federal level (for example, Corporate Average Fuel Economy standards and appliance efficiency standards).

➢ Sample indicators

a) Track energy used in County buildings and countywide (Marin County Public Works Department and Community Development Agency).

b) Track the number of new residential and nonresidential projects exceeding Title 24 standards (Marin County Community Development Agency).

c) Track renewable energy installations (Marin County Community Development Agency).

d) Track funding obtained for renewable energy projects (Marin County Community Development Agency).

➢ Sample targets

a) Decrease the amount of energy used in County buildings by 25 percent by 2010 from the 2000 level and by 10 percent per capita countywide.

b) Increase the number of building projects exceeding Title 24 by 100 percent by 2010 from the 2000 level.

c) Increase the number of renewable energy installations by 100 percent by 2005 from the 2000 level.

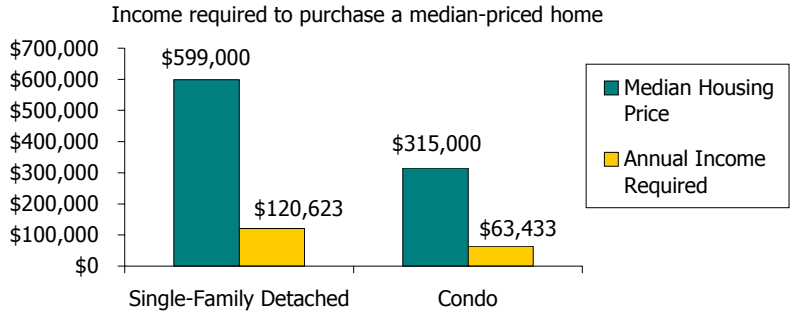
d) Increase funding for renewable energy projects by 20 percent by 2005 from the 2000 level.

C. HOUSING

➢ Background and trends

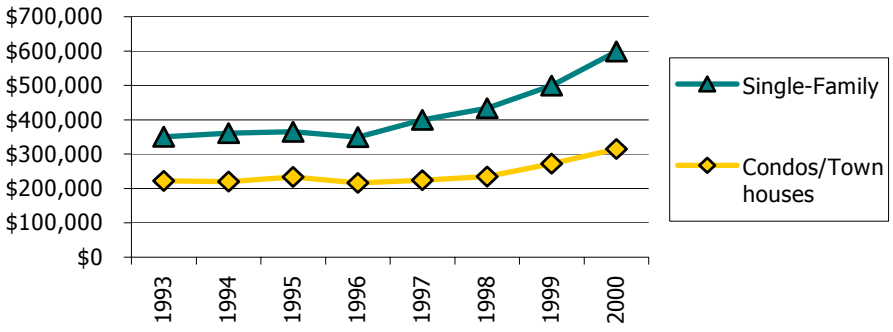
The cost of buying and renting housing in Marin County is continuing to rise. Families and individuals are paying larger shares of their income for housing or are unable to afford to live in Marin. The median sales price for a single-family house increased from $350,840 in 1993 to $599,000 in 2000. The median price for a condominium increased from $237,794 to $315,000 in the same period. It would take an annual income of $120,623 to buy the median-priced single-family house and an income of $63,433 to buy the median-priced condominium (Figures III-14 and III-15).

Figure III-14
Housing Affordability, 2000



Source: 2001 Marin Economic Commission

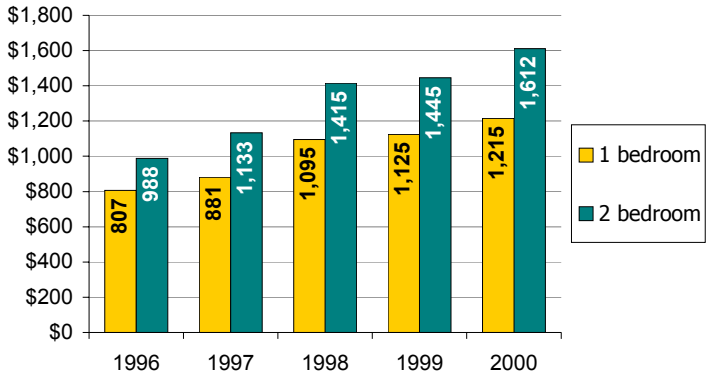
Figure III-15
Housing Median Sale Price



Source: Marin County Assessor

Rents continued to rise from an average of $807 for a one-bedroom apartment in 1996 to $1,215 in 2000 (Figure III-16), while the continued low rental vacancy rate makes finding housing difficult. Relatively few housing units were built between 1994 and 2000. Of the 2,592 that were developed, 1,908 were single-family detached units, 179 were condominiums or townhouses, and 866 were apartments.

Figure III-16
Marin County Average Rent

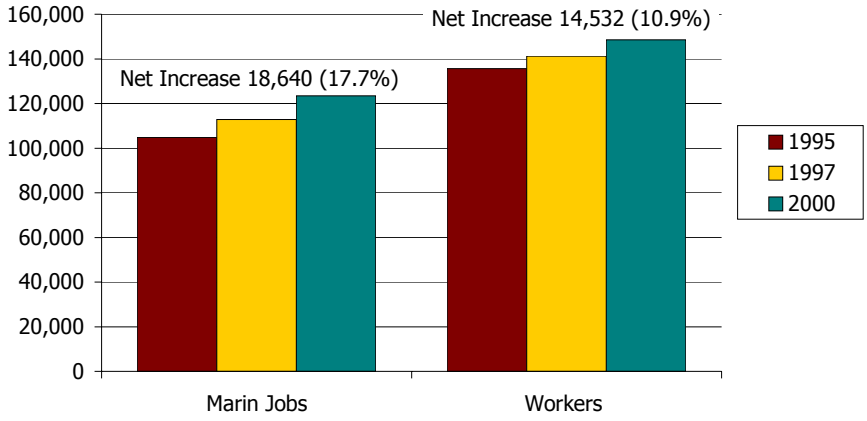


Source: 2001 Marin Economic Commission

People holding many types of jobs cannot afford to buy or rent housing in Marin. The 2001 annual median income for a family of four in Marin County was $80,100. Many jobs provide far less income than this. Very low income jobs paying less than $28,050 per year include cashier, restaurant cook, and retail salesperson. Many clerical and maintenance types of jobs in government agencies are in the category of low income jobs, paying a maximum of $44,850 per year. Moderate income jobs paying a maximum of $67,300 per year include nurse practitioner, pharmacist, firefighter, and police officer. Only people with incomes at the high end of the moderate category could afford to buy a median priced condominium. None could afford the median priced single-family house.

The number of jobs and workers in Marin is greater than the number of housing units where workers can live. While the number of workers in Marin has increased since 1995, the number of jobs created in the county has increased even more. There were 135,557 workers in Marin in 1995 and 148,515 by 2000, while the number of jobs increased from 104,870 to 123,510 in the same period. When applied to the number of housing units in the county, there were 1.32 jobs per housing unit in 1995, increasing to 1.37 in 1997 and to 1.41 in 2000 (Figure III-17).

Figure III-17
Marin Jobs-Workers Balance



Source: 2001 Marin Economic Commission

The construction of housing contributes to environmental problems such as waste generation, air pollution, and water use. According to the Alameda County Green Building Guidelines, 12.91 tons of waste are typically created from the construction of a new 2,000-square foot home. The U.S. Environmental Protection Agency reports that the air in new homes can be 10 times more polluted than outdoor air because of the materials used in construction. Several planning jurisdictions worldwide contribute to water conservation by requiring roof catchment water supply as a condition for approval for new construction. Boulder, Colorado, makes green building a condition for approval.

1. Increasing the Supply of New Housing

➢ Issues

The shortage and cost of housing make it difficult for people who work in Marin to live near their jobs.

a) The lack of affordable workforce housing causes employers and employees to leave the county.

b) There is linkage between the lack of housing and transportation congestion.

c) Housing need is created by increased employment, including in schools and government offices. If employers help provide housing for their workers, this will help to address housing and traffic issues.

d) A legal mechanism needs to be identified to providing housing for people who work in the community need to be identified, with preferences for local workers to buy or rent affordable units.

e) There is a connection between business and housing. Resources need to be leveraged, and there needs to be cooperation between business and the community. Businesses need to be involved in the planning process.

f) The rental vacancy rate is so low that rental housing is hard to find.

g) Increases in development density are strongly resisted.

h) There is a need to find ways to increase support for development of more housing.

A variety of techniques will be needed to identify and develop sites for housing.

a) The supply of affordable housing, money, and available land needs to be increased. The community needs to be mobilized for change.

b) Lower density development of large homes continues because of the profitability and market for this type of development although higher density development uses fewer resources such as water for landscaping and energy because of the shared building walls.

c) New development needs to be transit oriented, pedestrian oriented, and accessible by bike.

d) Changing land zoned for commercial to residential use would reduce land costs.

e) Commercial areas need to be better utilized: They have transit proximity, opportunities for retrofitting shopping centers, and air rights over parking.

f) Existing communities can become denser. Permitted densities of development can be increased in order to increase the supply of housing. Development does not have to be allowed to spread into existing open space and agricultural lands, although density increases are strongly resisted.

g) Zoning for sales tax revenue reduces the availability of land for housing.

h) Transfer of development rights from flood-prone areas to areas with urban development potential needs to be considered.

i) Poor quality building sites increase the cost of development.

j) There is a need for an effective land-banking program.

k) Neighborhoods, business groups, schools, churches, and community organizations can be activated to identify housing sites.

l) Surplus school sites can be evaluated for teacher housing. Also, church lands are underused and could become affordable housing sites.

m) Areas can be identified where housing would add to the desired liveliness of an area.

n) San Quentin is a potential opportunity site for affordable housing.

o) The recommendations for the St. Vincent's and Silveira lands need to be integrated into the Countywide Plan.

Overcoming obstacles to the development of second units would contribute to the housing supply at relatively low cost and ease of development.

a) Restrictive covenants forbidding second units in some older areas could be invalidated and second units could be allowed in new development.

b) Existing illegal second units could be legalized; permits could be expedited; connection fees could be reduced; waivers on height and floor-area ratio could be allowed.

c) Neighborhood opposition to second units and code enforcement against them need to be addressed. The cost of second units is increasing, and it is becoming more difficult to get approvals for them.

d) Regulations could be developed that are sensitive and neighborhood-specific for parking and design to make sure that second units fit in.

e) The reluctance of people to build second units needs to be addressed by identification of areas, techniques for building a second unit, and parking options. Low-interest loans for affordable second units could be provided.

➢ Strategies

Use land efficiently to meet housing needs and implement smart-growth principles.

a) Maintain a diverse population by promoting a variety of choices in housing.

b) Develop new affordable housing strategies to strengthen the link between jobs and housing. Adopt a jobs-housing linkage program.

c) Complete a study showing the nexus between commercial and industrial development and the need for housing for the workforce.

d) Identify existing employee housing opportunities. Specify that employer-provided housing focus on line staff.

e) Prepare land use plans to facilitate infill housing.

f) Prevent the loss of units through downzoning actions by transferring development rights to sites for affordable housing projects near jobs and transit. Purchase Transferred Development Rights (TDR) to increase housing density at selected sites.

g) Encourage transit-oriented development by identifying and designating sites, and establishing development standards.

h) Zone and provide appropriate standards for efficiency/SRO units.

i) Provide for live/work opportunities.

j) Amend multifamily General Plan policies and zoning regulations. Amend single-family zoning regulations to require minimum as well as maximum densities.

k) Review and update parking standards.

l) Incorporate child care centers and Safe Routes to Schools standards into new developments.

m) Develop vacant or underutilized school property for housing.

n) Encourage mixed-use development that includes housing in currently nonresidential areas by preparing a white paper on mixed-use housing development feasibility, conducting a survey of potential mixed-use sites, and establishing mixed-use development standards.

o) Create incentives for the development of long-term affordable housing. Enact density bonus zoning and other incentives.

p) Prepare a white paper on ways to facilitate smaller affordable housing projects. Conduct a detailed feasibility study of affordable housing sites. Evaluate an "Affordable Housing Overlay Zone" zoning designation and sites suitable for such a designation.

q) Facilitate development at key housing opportunity sites. Expedite environmental review for designated housing opportunity sites.

r) Strengthen residential inclusionary requirements and establish inclusionary housing regulations.

s) Modify the second-unit development standards and permit process to make it easier to develop second units. Establish a clearinghouse for second-unit technical assistance. Consider an amnesty program for unpermitted second units. Require resale inspections—assist second units in becoming legal.

➢ Sample indicators

a) Measure the median sales price of homes in Marin (Marin County Assessor).

b) Measure affordability levels of homes in Marin (Marin County Housing Authority).

c) Track the number of new units constructed in Marin (Marin County Community Development Agency).

d) Track the jobs-housing ratio (Marin County Economic Commission).

➢ Sample targets

a) Meet the regional fair-share allocation for construction of 229 very low, low and moderate income units in Marin County by 2006.

b) Increase by 20 percent by 2020 the number of Marin County workers living in the County who hold very low, low and moderate income jobs.

2. Government Programs to Encourage Housing Development

➢ Issues

Planning and zoning programs and incentives have a role in facilitating affordable housing.

a) There needs to be more collaboration on city and County plans to avoid conflicts. All towns and cities need to cooperate in providing a fair share of affordable housing. Multijurisdictional planning efforts could be encouraged.

b) A set of resources could be provided to help small jurisdictions streamline their process and to focus on affordable housing.

c) Incentives for developing affordable housing are needed, such as density and floor-area-ratio bonuses, shared parking, third-floor height allowances, no restrictions on residential density within a building envelope, and single-room-occupancy facilities.

d) Residential infill on underdeveloped residential sites can be encouraged. Infill projects can receive density bonuses.

e) Affordable housing for farm workers is needed. High housing costs make recruitment of workers difficult and contribute to a decreased quality of life for workforce families.

f) There is a conflict between the Association of Bay Area Governments' (ABAG's) housing allocation and some policies in the Countywide Plan that discourage affordable housing. For example, underutilized sites can be redesignated to allow additional housing.

g) Prezoning to allow multiuse and affordable housing could be considered. Overlay zones for mixed use and affordable housing can be established.

h) Blanket overlay zones are problematic; instead, amend the zoning districts accordingly.

i) Setbacks need to be relaxed and clustering allowed. Off-street parking requirements can be reduced for multifamily housing development.

j) The environmental review process might create a barrier to affordable housing development.

k) Models for housing development such as programs and standards used in Davis could be considered.

l) Incentives for meeting and penalties for not meeting housing goals need to be established.

m) The percentage of inclusionary units required in new projects needs to be increased.

n) On-site or offsite housing is more effective than fees for mitigating the impacts of new commercial development.

o) Cooperatives and cohousing could be considered as possible affordable housing types.

p) Free or low cost land is useful, but subsidies are still needed for affordability.

q) One way to overcome neighborhood opposition is by providing examples of well-designed affordable housing. Design is the key to community acceptance.

Housing developers, funding sources, and financing are essential factors in building affordable housing.

a) Local government agencies need to identify reputable developers and work with them to develop affordable housing.

b) The public needs to recognize that a developer requires flexibility to fit a project into a community and to make it feasible. There needs to be recognition that developers would prefer to invest equity in the community rather than have to pay extra taxes or fees.

c) Mixed-income housing projects need to be considered so that a variety of funding sources and financing can be used.

d) Ways to make rentals available and affordable need to be explored. There is a need for a community bank to provide loans for higher density housing.

e) Apartment owners are reluctant to accept Section 8 clients. They need education on this subject.

f) A real estate transfer tax for affordable housing could be established. Tax-exempt financing and bonding potential by redevelopment agencies and cities need to be considered.

g) Although homeowners receive a large subsidy through mortgage interest and property tax deductions, there is some public opposition to subsidizing affordable housing.

h) Mixed-use projects need to tap into increasingly greater funding sources.

i) Government and developers need to coordinate with banks and utilize their obligations under the Community Reinvestment Act.

j) The update process for the Housing Element of the Countywide Plan provides an opportunity to set in motion a countywide housing trust fund and options for funding sources.

➢ Strategies

Work together to achieve housing goals.

a) Work with housing advocates.

b) Establish procedures for neighborhood meetings. Prepare and update public information materials.

c) Conduct community outreach. Provide public education on affordable housing opportunities and incentives for first-time home buyers.

d) Collaborate to implement an interjurisdictional strategic action plan for housing. Undertake coordinated lobbying efforts.

Build local government capacity to respond to housing needs.

a) Increase local government effectiveness in implementing housing programs. Provide briefings for elected and appointed officials on alternative housing types.

b) Conduct staff training. Designate staff to develop local funding sources. Establish a permanent "affordable housing strategist" position. Establish a Housing Assistance Team (HAT).

c) Leverage funding opportunities. Establish a housing trust fund ordinance and operating procedures. Seek additional local sources of funding. Coordinate funding among development proposals.

d) Utilize Redevelopment Agency powers.

e) Streamline the permit application process to allow for affordable housing for farm workers. Consider waiving or lowering permit fees as an incentive for the construction of farm worker housing.

f) Provide green building technical assistance for affordable housing.

g) Establish a housing-data clearinghouse. Conduct an annual Countywide Plan Housing Element review.

h) Mandate fee waivers or discounts for deed-restricted units as is done in San Rafael.

i) Eliminate time limits on deed-restricted units.

j) Zone appropriately so that sites are eligible for funding (many sources exclude projects that require General Plan or zoning amendments).

k) Promote more consistent fee schedules among jurisdictions.

l) Provide a land-transfer-for-units option with priority on getting sites.

m) Use available funding to maximize the number of affordable units.

n) Establish an open, public policy for allocation of Housing Trust Fund monies.

o) Integrate inclusionary units into projects instead of allowing payment of an in-lieu fee. Base inclusionary requirements on the size of market rate units.

p) Create incentives for the provision of more than the minimum number of affordable inclusionary units.

➢ Sample indicators

a) Measure the amount of local public money provided for affordable housing and its utilization for housing developments (Community Development Agency, Marin County Housing Authority, Marin County Community Development Block Grant).

b) Measure the implementation of programs in the Countywide Plan's Housing Element.

c) Measure the number of inclusionary units built in the county (Marin County Community Development Agency, Marin County Cities and Towns).

➢ Sample targets

a) Increase the amount of local funding and the number of units of affordable housing by 20 percent by 2006 over the 2002 level.

b) Implement programs in the Housing Element according to the schedule specified in the Element.

c) Increase by 10 percent the number of inclusionary units by 2006 over the number approved in 2002.

3. Utilization of Existing Housing Stock

➢ Issues

The existing housing stock provides opportunities to increase the supply of affordable housing.

a) For a variety of reasons, many "empty nest" households continue to occupy housing units that are well suited to families with children and with adults in the workforce.

b) There is a need to stimulate turnover of large houses occupied by empty nest households by encouraging the production of smaller units, and of assisted-living and residential care facilities targeted to the senior population.

c) The San Mateo County shared-housing program could be used as a model for providing opportunities for shared housing in Marin.

d) Large homes sizes result in fewer affordable units.

e) There is a need to discourage demolition of housing that is in good shape and conversion of housing to nonresidential use unless the housing is to be replaced by an equal or greater number of housing units. A housing conservation plan needs to be developed to protect existing housing.

f) Existing housing needs to be acquired and made affordable. Large homes could be converted to multifamily housing.

g) The number of projects to which affordability (inclusionary) requirements apply, and the amount of the requirements, are not sufficient to meet the affordable housing need.

➢ Strategies

Maintain and enhance existing housing and blend well-designed new housing into existing neighborhoods and communities.

a) Provide housing that is well designed. Adopt criteria for use in design review to clarify the design review process. Consider creating a shared architect or designer position.

b) Protect and enhance existing affordable housing.

c) Protect "at-risk" units.

d) Link code enforcement with public information programs. Assist in maximizing use of rehabilitation loan programs.

e) Acquire rental properties for affordable housing.

f) Review the Condominium Conversion Ordinance.

g) Use mediation to resolve landlord-tenant issues.

h) Investigate and encourage home-sharing and tenant-matching opportunities.

i) Provide for child care in housing developments.

j) Modify the Second Unit Development Standards and Permit process. Establish a clearinghouse for second-unit technical assistance.

k) Consider an amnesty program for nonpermitted second units.

l) Analyze how incorporating uniform design standards or processes affects the function of design review boards. Look at ways to reduce the cost of the design review process.

m) Address nonconforming uses and their reconstruction potential—there is a great potential for loss of units because of this.

n) Incorporate Safe Routes to Schools criteria with new housing development.

o) Keep on-site wastewater treatment limitations in mind.

p) Maintain parking-requirements where street widths are narrow, on-street parking is minimal, and public transit is not close by.

Provide housing for special-needs populations.

a) Establish zoning for emergency shelters and transitional-housing facilities.

b) Modify residential care facility zoning to facilitate provision of such care facilities.

c) Ensure good neighbor relations involving emergency shelters and residential care facilities.

d) Review and consider revising zoning regulations for farm worker and ranch hand housing if necessary.

e) Provide housing for government employees.

➢ Sample indicators

a) Measure the number of new second units and rent levels (Marin County Community Development Agency).

b) Measure the number of homeless people assisted through the Continuum of Care program (Marin County Housing Authority).

c) Inventory and track farm worker housing to ensure that all vacant farm worker housing is being fully utilized (Marin County Department of Agriculture, Weights and Measures).

➢ Sample targets

a) Add 50 second units by 2006 over the level in 2002.

b) The number of individuals provided assistance in obtaining shelter and other services will increase by 10 percent in 2010 over 2000 levels.

(See also IV. The Economy, Equity and Culture, A. The Economy, Workforce Housing, and C. Social Equity and Public Health, Housing.)

D. COMMUNITY DESIGN

1. Community Structure and Character

➢ Background and trends

Marin County's built environment and natural landscape are historically in harmony. The heritage of Marin County's built environment is one of villages, towns, and cities that are in harmony with the surrounding natural and agricultural landscape. Marin's housing was historically concentrated in its downtowns—the centers of commercial, cultural, and civic activity—and in adjoining, walkable neighborhoods. These places, and the images and lifestyles associated with them, remain among Marin's most treasured and valuable assets.

Marin County is experiencing outward pressure for suburban development. With the growth of the population and economy in the Bay Area metropolis in the past 50 years, and the pervasive influence of automobile access, Marin's urban and rural areas have been subject to the same outward pressure for suburban development as other rural edges of the Bay Area. Unlike most rural counties, however, Marin has aggressively sought to protect its irreplaceable natural and agricultural assets from being overrun by low density, low quality development.

Most new growth has been automobile oriented. Much of the housing built in the last 30 years has been relatively low density, single family houses that are not within easywalking distance of shops, schools, or parks. And any new office and retail developments are in the form of low density, single-use buildings, each surrounded by its own parking lot. This type of automobile oriented development has consumed larger amounts of land to serve a smaller number of residents and generates an automobile trip for most activities of daily life. With the high cost of land, and growing concern about traffic and air quality, there is a need for a more sustainable urban form that is disciplined by the needs of the pedestrian.

➢ Issues

More sustainable community development patterns would better utilize our limited amounts of land and other nonrenewable resources.

a) The cost of land is increasing. There is a need for more efficient use and reuse of existing developable lands.

b) Land is increasingly used to serve automobiles.

c) There is increasing dialogue on mixed-use neighborhoods, especially in downtown areas.

d) There are interjurisdictional barriers to the sustainable design of communities.

e) There is a direct relationship between the design of new development and the preservation of resources.

New and redeveloping neighborhoods could be made compact and walkable, and could include a range of housing types, with schools, parks, and neighborhood shops within a ½-mile walking distance. The majority of the population would be concentrated within a ¼-mile radius, as is shown in the traditional neighborhood diagram on the previous page.

a) Existing communities can become denser through increased permitted densities of development, including allowance for second units, thus preserving existing open spaces and agricultural lands.

b) Design guidelines can be used to code a variety of housing types and sizes, including mixed income neighborhoods near transit.

c) Existing discontinuous bicycle and pedestrian routes hamper the ability to walk and bike to work and other destinations. Gated communities can hamper connections and walkability.

d) An intra-Marin bus system could reduce automobile use, with a plan for bus routes within a quarter mile of locations where 90 percent of the population lives.

➢ Strategies

Incorporate principles of the new urbanism into the Countywide Plan, zoning code and community plans.

a) Identify areas near transit nodes that would be appropriate for higher density, transit-oriented development. Create incentives for development in these areas.

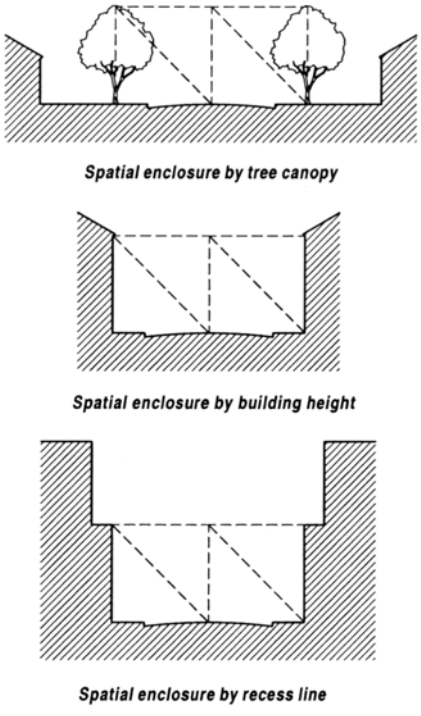
b) Include and designate mixed-use zones and higher density residential zones.

c) Permit second units in all residential zones.

d) Encourage mixed-use development in commercial areas within the City-Centered Corridor.

e) Update community plans with community-specific standards and guidelines to ensure that new development retains the essential characteristics that make each community unique.

Figure III-18
Spatial Enclosures



• **Spatial Enclosure:** the defining elements of a public space provided by facades with disciplined tree planting as an alternative. Trees aligned for spatial enclosure are necessary on thoroughfares that exceed the maximum height-to-width ratios.

Source: 2002 Fisher & Hall Uban Design

Incorporate clear development standards and design guidelines into the zoning code and subdivision standards, including the following elements.

a) Build streets in an interconnected grid or modified grid to provide route choices and dispersion of traffic.

b) Design buildings with similar uses to front the street, facing one another. Use changes should occur at the rear property line.

c) Design buildings so that heights are similar on a given street frontage and be proportional in height to the width of the street, at a height-to-width ratio of no more than 1:3, as shown in the Spatial Enclosure diagram at the right.

d) Provide on-street parking where feasible to serve as a buffer between pedestrians on the sidewalk and moving traffic except in certain cases where steep terrain would require excessive grading. In this case, parking on one side, or opportunistic parking lanes where terrain permits, are good options.

e) Design parking structures so that the street levels have uses other than parking.

f) Produce a map showing walking distances from existing housing to services. Overlay with half-mile radii circles—the distance that most people will comfortably walk—to determine the number of residences that are not within walking distance of services.

Plan and design new development with respect for its natural surroundings.

a) Design compact mixed-use communities to accommodate the needs of the human population in discrete areas, leaving the undeveloped countryside alone. (See the diagram comparing towns in the landscape to suburban sprawl, on the following page.)

b) Review hillside grading standards in terms of amount removed or reused on-site and of revegetation requirements. Require grading to follow a smooth contour; avoid sharp cuts and fills, and long, linear slopes that have uniform grade.

c) Use local building materials to the extent possible to create a local sense of place.

d) Provide and protect scenic corridors and significant viewsheds from scenic roads, hiking trails, and public places throughout the county.

e) Do not allow building near visually prominent ridgelines when a choice of building location is available. Building rooflines must be located below the ridgeline so that views to the hillside retain the natural ridgeline.

f) Require that roof forms and rooflines of hillside buildings be broken into a series of smaller building components to reflect irregular forms of the surrounding natural features. Require roof colors to be earth tones.

g) Require that hillside buildings be cut into the hillside to reduce visual bulk. Excavate underground or use below-grade rooms to reduce effective bulk and provide energy efficient and environmentally desirable spaces.

h) Encourage sloping lot design, such as split-level building terraces, to reduce building pad size. Building forms should be stepped to conform to the site topography.

i) Reassess and reduce to a minimum the maximum amount of flat yard area in hillside development. Reassess clustering policies for hillside development and clarify, with 90 percent open space and 10 percent development, what is acceptable in each use.

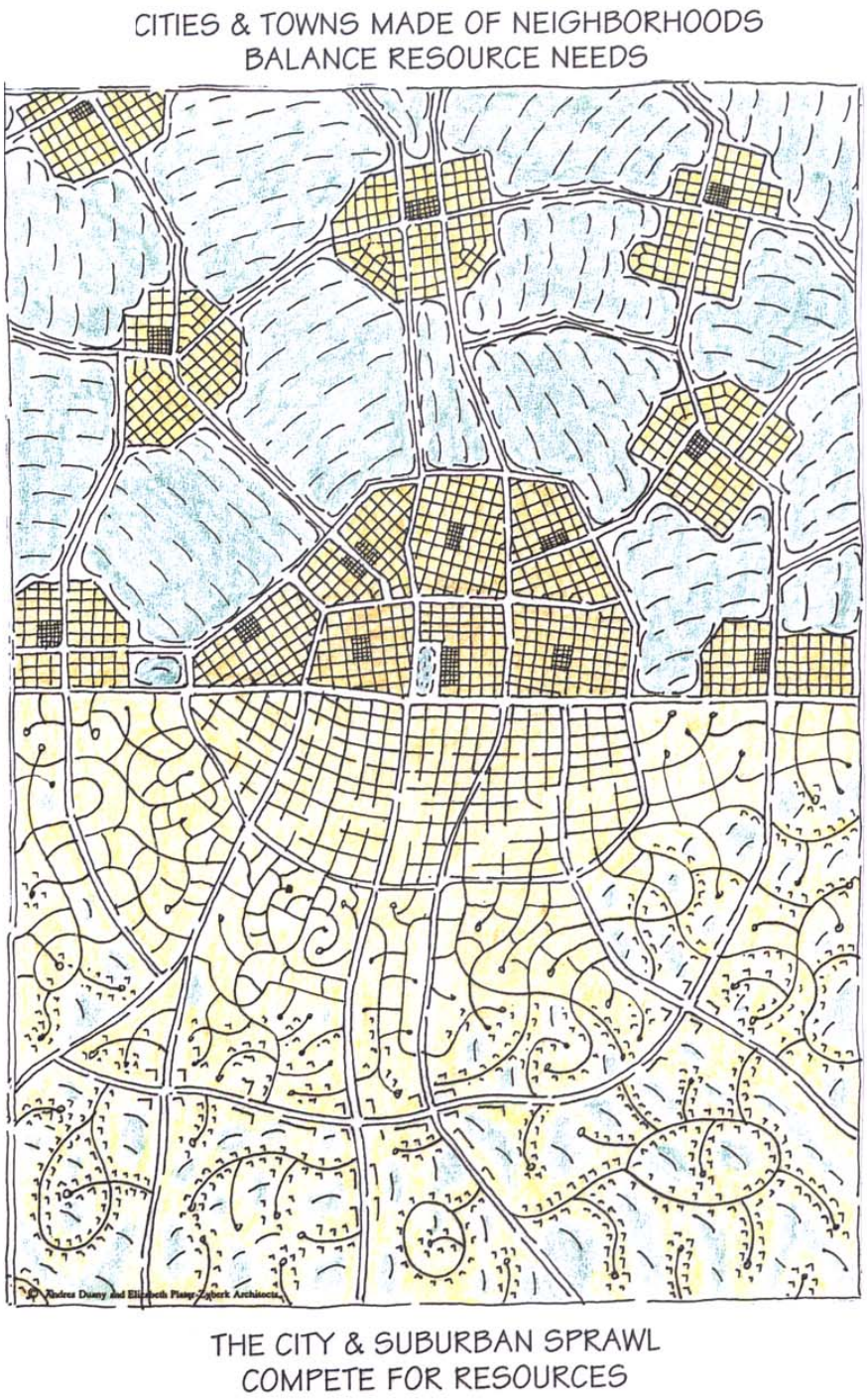
j) Do not allow continuous building masses that create a "wall" effect and inhibit views should not be allowed. Do not allow large expanses of wall in a single plane on downhill elevations on hillside lots.

k) Improve the quality of stormwater runoff with sensitive site design.

l) Use irregular plant spacing to achieve a natural appearance on graded slopes.

m) Clarify under what circumstances eucalyptus trees are protected.

Figure III-19
Cities and Towns Made of Neighborhoods



Source: 2002 Fisher & Hall Urban Design

This diagram shows the same amount of development in compact towns and villages, top, and evenly spread suburban sprawl, bottom. The compact development provides a larger net amount of undisturbed open space. ©DPZ & Co. Reproduced with permission.

Remove interjurisdictional barriers to the sustainable design of communities.

a) Work with each of the cities and the Congestion Management Agency to develop a comprehensive master plan. The goal of this master plan would be to maximize the amount of transit-served development, and ensure that new development and redevelopment is transit-servable.

b) Work with each of the cities to maintain a coherent urban boundaries to retain a pattern of compact towns and villages in the Marin countryside.

➢ Sample indicators

a) The rate of growth of the human population in relation to the rate of growth of urbanized land (Marin County Community Development Agency).

b) The density of new development overall, and compared with the averages from 1980 to 2000 (Marin County Community Development Agency).

➢ Sample targets

a) Increase residential densities of new development in Marin County by 20 percent by 2020 over the prior 20-year period.

b) Twenty percent more residences will be within a quarter mile of services and transit by 2020.

c) Update and code all of the community plans to include sustainable development and new-urbanism principles and design standards by 2020.

2. Streetscape and Open Space Design

➢ Background and trends

Marin County's roadway system was designed for a smaller population. Historically, Marin's roadway system was made up of two-lane highways winding through the countryside, narrow country lanes lined with rural houses, tree-lined neighborhood streets, and busy commercial streets in the towns. Streets and roads that carried small amounts of low speed traffic often had no sidewalks because it was comfortable to walk along the edge of the roadway, while busier streets almost always had comfortable sidewalks for pedestrians. Parking was allowed on both sides of most streets, such that a row of parked cars often separated the pedestrian from moving traffic.

Streets constructed in recent years have been designed and detailed to maximize the level of service for automobiles, and the level of service for pedestrians and bicycles has suffered. As the population increased in recent decades, wider streets were constructed to carry more traffic at higher speeds. These streets included collector streets and arterial streets, in addition to four-lane highways and freeways. These streets were built with and without sidewalks, and parking was often prohibited in the interest of allowing more traffic to flow more freely. This brought fast-moving traffic very close to pedestrians on the sidewalk or shoulder of the road. A result was that people who could afford a car would generally not choose to be a pedestrian on streets with fast-moving traffic.

Garages and other service functions historically were located away from the street. While the houses in the older neighborhoods generally had garages that were set back behind the house, the streetscapes of the newer neighborhoods often were dominated by garages. As land became more valuable and lots became smaller, the percentage of the lot frontage devoted to parking and the garage increased substantially.

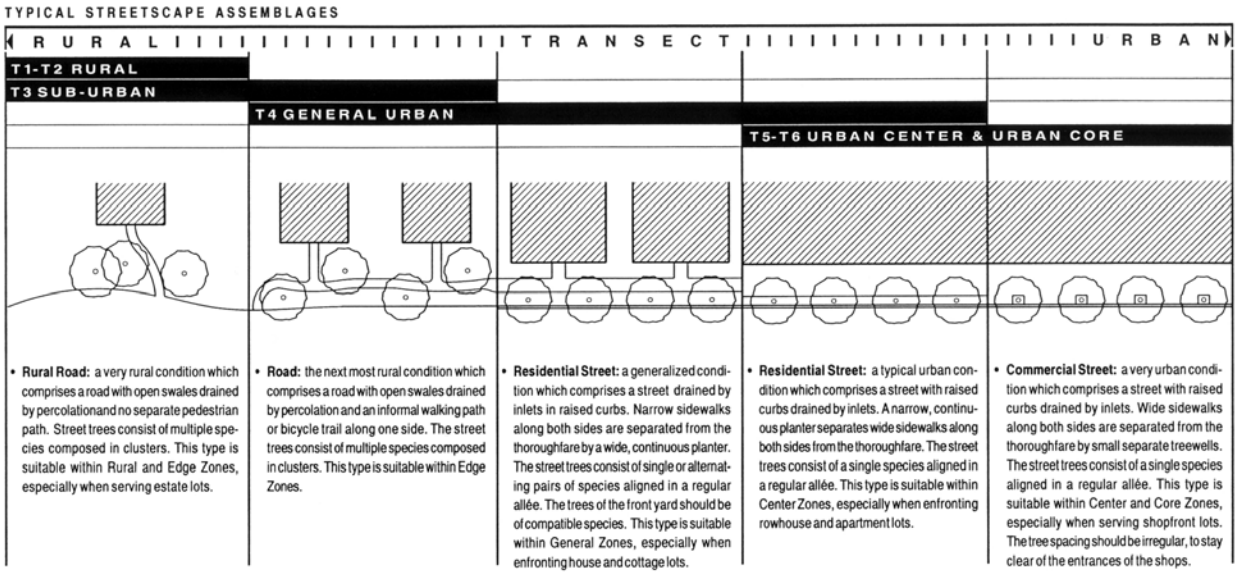
As local governments' ability to raise funds for construction and maintenance has been significantly reduced in recent years, the quality of public space design and maintenance has also been reduced. With the passage of Proposition 13, local governments' ability to raise funds for the construction and maintenance of streets and parks was significantly reduced. To maximize the traffic-carrying capacity of the streets for the lowest cost, street standards were produced that often removed the parking lanes, sidewalks, street trees, and planting strips. To maximize the acreage of parkland that could be provided for a limited amount of money, standards were developed for the building of larger, more widely spaced parks rather than small neighborhood parks within walking distance of new homes. This made the parks more economical to maintain but required that most children be driven to them to play. The responsibility for funding and constructing new streets and parks was largely shifted from local government to developers and builders. The developers generally supported the trend toward bare-bones streets and parks, since they saw those as "off-site" costs that did not add value to their "product," and hence sought to minimize their investment in public spaces and infrastructure.

There is a nationwide trend toward traditional neighborhood development that is reversing the trend toward auto-dominated public spaces. A strong focus of this movement is the design of public spaces to accommodate pedestrians and bicyclists comfortably while allowing cars to move through, generally at lower speeds (Figure III-20). A key to avoiding congestion is to design street systems that connect neighborhoods together with an open network of many smaller streets, rather than relying on a single collector or arterial street for this function. The result is that not one street is burdened with a large amount of traffic, and thus the streets are not easily overloaded.

The blocks within a traditional neighborhood street network are relatively small, so that children and other pedestrians can easily move in any direction through the neighborhood. The streets have relatively narrow pavements and comfortable sidewalks, and are spatially defined by street trees and by houses set facing the street. Houses often have front porches or stoops, with the garages tucked back. The fronts of the houses—free of garages—can be pulled up close to the street, creating a strong neighborly feeling.

The destinations to which one can walk in such neighborhoods include small shops, offices, apartments, and transit stops along a larger street at the neighborhood edge; a small green or playground near the quiet center of the neighborhood; bicycle and jogging trails along an open space at a neighborhood edge; and neighborhood schools located where several neighborhoods meet.

Figure III-20
Typical Streetscape Assemblages (I)



Source: 2002 Fisher & Hall Urban Design

A diagram showing the character of the street based upon the zone in which it is located. From *The Lexicon of the New Urbanism.* ©DPZ & Co. Reproduced with permission.

The key to an efficient and convenient transit system is getting people to leave their home on foot or on a bicycle. Once people are in a car, they will probably drive to their final destination. If they are willing to switch to transit from the car, parking facilities are needed at the transit stop, which are either very costly to provide in structures, or consume large amounts of valuable land for surface parking at terminal locations where the land could be used for higher density mixed-use development.

➢ Issues

Neighborhood streetscapes—including streets, front yards, and building facades—should be designed in a coordinated way that makes them comfortable to walk along.

a) Land is predominantly used to serve automobiles.

b) Design principles and development patterns can be developed to create pedestrian and bicycling opportunities within the community.

Street design can balance the needs of the pedestrian and the bicyclist with those of the motorist. Moderating the motorists' speed is an important factor.

a) New development can consider bike and pedestrian paths as basic infrastructure.

b) Improvements to existing streets can be pedestrian and bicycle oriented.

The design of streets and roads can be functionally and aesthetically appropriate to the neighborhood.

a) In the rural areas of West Marin, and in lower density neighborhoods on the edges of towns and cities in the City-Centered Corridor, roadways can be more rural in appearance.

b) Most residential streets should have sidewalks or separate pathways so that walking is pleasant and safe. An exception to this could be rural roads with little traffic where it might be fine to walk along the edge of the road or on the road.

c) Downtown streets, such as those in San Anselmo and Fairfax, need to have plenty of on-street parking so that customers will use the front doors of businesses.

Parks, squares, greens, and plazas can provide safe and useful public spaces within a neighborhood when they are appropriately sited and carefully designed.

a) Public spaces that are faced by buildings inhabited at all times of day ensure that they are safe and secure.

b) Small play areas within walking distance of residences allow children to play and socialize without being driven there by an adult.

c) Public plazas and squares can serve as local gathering places, making them ideal locations for small-scale local businesses such as cafes, bakeries, and service businesses.

➢ Strategies

Prepare both countywide and community-specific standards for pedestrian oriented streets that honor the principles of sustainability and new urbanism.

a) Make sure that streetscape improvements and standards are pedestrian and bicycle oriented.

b) Establish a system that measures Level of Service for pedestrians and for bicycles. In directing infrastructure investment, adopt minimum standards for these that supersede standards for automobile traffic.

c) Consider users of public spaces to be from a wide range of ages.

d) Provide or require the provision of pedestrian amenities such as fountains, benches, tables, kiosks, landscaping, and courtyards in key facility locations.

e) Encourage single-family homes to have porches at the front and garages to the back of the site.

f) Restrict the use of solid fences and walls over four feet in height along public streets due to the negative impact on the streetscape.

g) Street trees should be planted to provide continuous shade and green.

h) Design buildings to provide defensible space. Higher density residential areas should have doors and windows facing the street at frequent intervals. Commercial areas should avoid dead spaces such as blank walls.

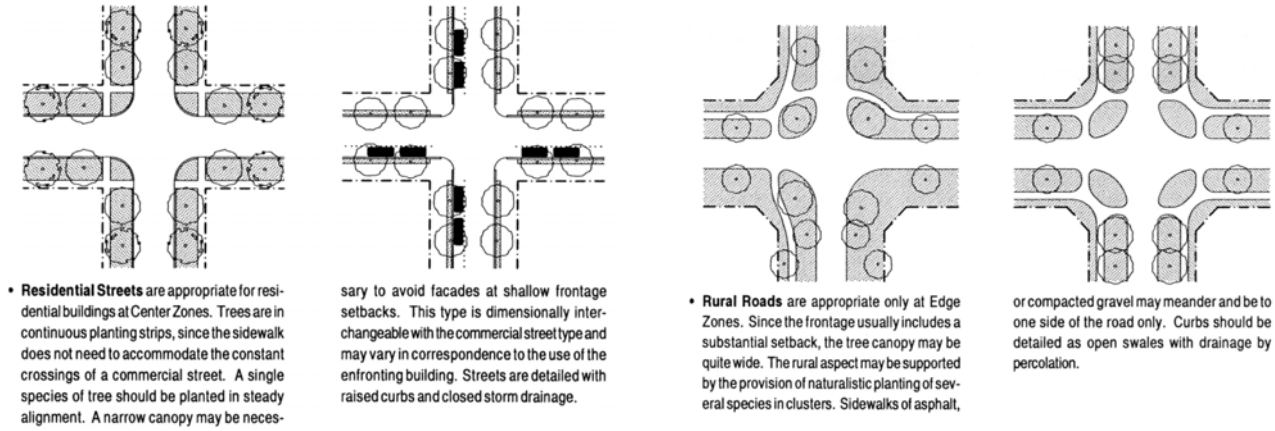
Integrate street and road design standards with the overall community design, reinforcing the rural or urban character of the place they serve (Figure III-21).

a) Develop typical and special streetscape standards for the three corridor areas and Community Plan boundary areas.

b) Modify hillside roadway standards to require minimum widths to maintain the rural feel of the hillsides. Use narrower street widths to reduce grading impacts.

c) Inventory the character of the streets and roads in terms of width of sidewalks, presence and spacing of street trees, height-to-width ratio of "outdoor room," height of streetlights, number and spacing of benches, and distances between doors facing the public street. Base community-specific standards on this inventory.

Figure III-21
Sample Street-type Diagrams



• **Residential Streets** are appropriate for residential buildings at Center Zones. Trees are in continuous planting strips, since the sidewalk does not need to accommodate the constant crossings of a commercial street. A single species of tree should be planted in steady alignment. A narrow canopy may be necessary to avoid facades at shallow frontage setbacks. This type is dimensionally interchangeable with the commercial street type and may vary in correspondence to the use of the enfronting building. Streets are detailed with raised curbs and closed storm drainage.

• **Rural Roads** are appropriate only at Edge Zones. Since the frontage usually includes a substantial setback, the tree canopy may be quite wide. The rural aspect may be supported by the provision of naturalistic planting of several species in clusters. Sidewalks of asphalt, or compacted gravel may meander and be to one side of the road only. Curbs should be detailed as open swales with drainage by percolation.

Sample street-type diagrams that show how the design is based upon overall character of the adjacent development. From *The Lexicon of the New Urbanism*. ©DPZ & Co. Reproduced with permission.

Source: 2002 Fisher & Hall Urban Design

Incorporate clear, high quality development standards and design guidelines for public parks and plazas. The following elements should be addressed.

a) Design public plazas and community parks to be fronted by building facades and circumscribed by thoroughfares.

b) To maximize their use and security, locate parks and plazas next to other destinations.

c) Take care that open spaces have visual supervision from fronting buildings.

d) Avoid dense, visually impenetrable planting since it creates the opportunity for crime.

➢ Sample indicators

a) Percentage of residences within ½ to ¼ mile of a playground ((Marin County Community Development Agency).

b) Number of miles of new sidewalk constructed on streets that previously had none (Department of Public Works).

c) Ratio of pedestrians per day to cars per day, and ratio of bikes per day to cars per day (Metropolitan Transportation Commission).

d) Average driving speed on residential streets.

e) Average percentage of empty seats on buses and ferries (Golden Gate Bridge, Highway and Transportation District).

➢ Sample targets

a) Ensure that by 2020, 50 percent of local streets (not including collector and arterial roads) have more pedestrians and bicyclists per day than cars.

b) Ensure that 10 percent of the gaps in street trees in the City-Centered corridor will be planted with new street trees by 2020.

c) Increase the amount of new residential development with front porches, shallower setbacks, and garages behind the house to 75 percent by 2020.

d) Increase the number of new parks and plazas enfronted by building facades and surrounded by thoroughfares to 80 percent by 2020.

3. Building and Site Design

➢ Background and trends

The dominant model of development in Marin County comes from the early 20th century and is based on a network of walkable streets and small blocks. In each community this basis pattern was configured and detailed in a unique way that gave each place its own distinctive local character. The dominant indigenous urban design and architecture of Marin is based on American town planning practices of the early 20th century. This design is characterized by relatively small-scale buildings fronting onto small neighborhood streets. In West Marin, the character of the buildings and the way they are sited on their lots was historically relatively rural, with larger lots, mostly one-story buildings with larger setbacks, and relatively informal landscaping. In the City-Centered Corridor, the historic tendency was to a more urban character, with taller buildings set closer to the street, and more formal arrangements of trees and other landscaping.

The current model of development in Marin County is not community-specific. Current zoning tends to require that building and site design within a given zone be the same regardless of location in the county. The community plans attempt to counter this tendency by including community-specific standards and guidelines that customize buildings to their community.

There is a trend toward new urbanism designs. There is a strong nationwide trend toward higher density mixed-use infill development, particularly near transit nodes. This is a sustainable way to provide needed housing and neighborhood-serving commercial uses. There is also a nationwide trend toward new urbanism, a pattern of development based on the walkable neighborhood. This pattern provides a range of housing types, a range of neighborhood-scale commercial uses, and a range of civic amenities such as schools and parks, all within a walkable radius of approximately ¼ mile.

When lower density new development occurs on natural terrain, it should fit the terrain as much as possible to minimize grading and reshaping. Low density housing development, particularly on steep hillside sites, may be damaging to the natural terrain. Marin is committed to developing and enforcing building and site design standards that minimize reshaping of the natural terrain and harmonize the built elements with their natural surroundings.

➢ Issues

Green building techniques include the use of energy efficient and recycled materials, reduce the use of nonrenewable resources, and reduce the discharge of waste into the environment.

a) Green building and biological treatment of sewage can be encouraged through government policies.

b) Buildings consume 65 percent of the electricity and 35 percent of the total energy generated in the United States (U.S. Green Building Council). Fly ash can be used in concrete to replace a portion of cement. This reduces the amount of carbon-dioxide emissions and waste from coal-fired power plants, and increases sheer strength over time.

c) Buildings use 40 percent of raw stone, gravel, and sand and 25 percent of virgin wood in the United States (U.S. Green Building Council). Buildings use 25 percent of water consumed in the United States.

d) Green building could be required as a condition for residential remodeling and new construction approval by utilizing a rating system.

e) Sustainable building materials and solar and wind power could be used in housing. Incentives could be provided for green building and other standards for high quality housing.

f) A whole-systems approach to building homes should be considered (site runoff to landscaping, orientation of building to sun, reused building materials).

g) Sustainable housing can be provided, using energy efficiency, water conservation, sustainable materials, attention to indoor air quality, and renewable energy.

h) Restricting new housing to the City-Centered Corridor helps preserve rural areas.

Marin's varying community types could benefit from unique landscape design standards and guidelines.

a) Native landscaping could enhance the sense of place in each of Marin's unique communities.

b) Gardens could be sited in urban areas, including rooftop gardens and community gardens.

➢ Strategies

Adopt parking lot design standards that require parking to be screened from public view and designed in an environmentally responsible way.

a) Develop underground and parking structure standards.

b) Encourage the use of pervious surfaces for drainage swales, driveways, walkways, and parking lots. Use hybrid parking surfaces to reduce impervious surfaces.

c) Create a parking grove standard with permeable stall design, a grid of trees, and bollards to delineate parking spaces.

Focus site development standards on the siting of buildings for access by pedestrians and bicyclists. Cars should be accommodated but should not dominate.

a) Make sure streetscape improvements and standards are pedestrian and bicycle oriented.

Develop unique landscape design standards and guidelines for each of Marin's various community types.

a) Encourage gardens in urban areas, including rooftop gardens and community gardens.

b) Select streets to add trees and landscaping.

c) Use irregular plant spacing to achieve a natural appearance on graded slopes.

d) Use landscaping as a tool to promote and provide food, habitat, and water. Incorporate the elements of good ecological design into the design review process.

e) Include native landscaping as part of lot coverage.

Reevaluate parking standards so that they do not unintentionally decrease the density of infill projects or discourage the use of transit.

a) Allow shared, tandem, and elevator car parking, and other flexible parking arrangements for mixed-use or affordable housing projects.

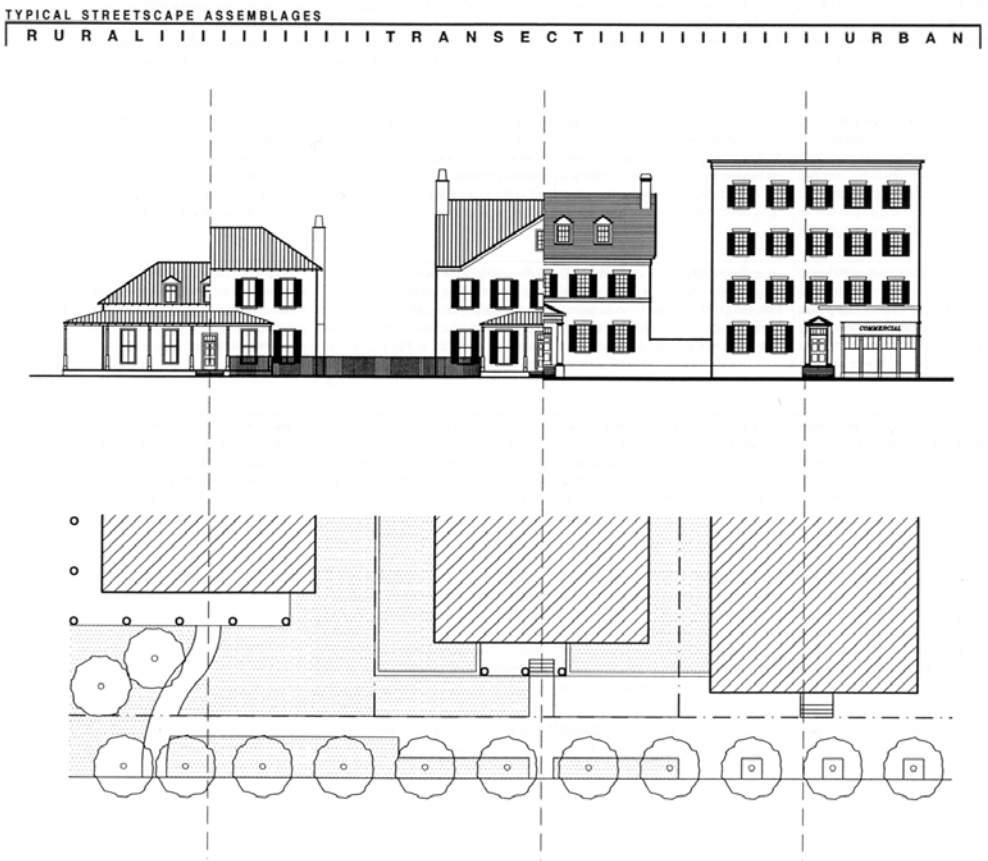
b) Reassess parking requirements related to transit uses.

c) Increase the compact parking ratio for affordable housing projects.

Include customized building and site design standards in community plans to ensure that the unique character of each community is preserved.

a) Ensure that infill development makes incremental changes from the existing character of a surrounding area.

Figure III-22
Typical Streetscape Assemblages (II)



Source: 2002 Fisher & Hall Urban Design

Building types that represent a change along a continuum from rural to suburban to urban. From *The Lexicon of the New Urbanism.* ©DPZ & Co. Reproduced with permission.

b) Complete countywide and community-specific design guidelines for all types of development in order to achieve high quality site design. Consider separating these into corridor areas.

c) Update each Community Plan to address similar topics and standards in order to clearly articulate requirements and streamline review of development applications.

d) Community plans need to concentrate on design issues unique to their areas (see the "Typical Streetscape Assemblages" diagram, above).

e) Require excellence in building and site design.

Develop design standards and guidelines for new development that ensure it will be compatible with the historic character of its community.

a) Develop policies and design guidelines for large-home construction in existing, established areas so that the integration of new buildings is more compatible and less intrusive.

b) Develop policies and design guidelines discouraging the establishment of gated residential communities.

c) Assure ridgeline protection by developing better-defined ridgeline graphics, articulated criteria, protection of specific viewsheds, and hillside design guidelines.

d) Prepare detailed standards for architectural review for multifamily and mixed-use development to include such items as bulk, building materials, reflectivity of glass, color, landscape treatment of front yards, and driveway paving.

e) Develop an interjurisdictional approach to sustainable design of communities. Encourage residential infill on underdeveloped residential sites. Allow density bonuses for infill projects.

Develop design standards, guidelines, and technical assistance for the design of environmentally responsible green building.

a) Require solar orientation as a condition for approval.

b) Encourage and facilitate the use of products with no or low volatile organic compounds (VOC) and the use of local, ecologically sound building materials in construction.

c) Promote the use of recycled and salvaged building materials. Prepare a construction and demolition waste ordinance that requires building projects to recycle 50 percent of waste or develop a recycling plan.

d) Promote the weatherization of all homes in Marin.

e) Encourage the replacement of wood stoves with pellet stoves or other EPA approved stoves.

f) Promote straw bale construction and other natural building technologies, such as: clay, adobe, rammed earth, and presá.

g) Require using the Leadership in Energy and Environmental Design (LEED) rating system for new and remodeled commercial and industrial facilities. Require an LEED Silver rating.

h) Promote the use of renewable energy in buildings.

i) Provide free green building technical assistance to commercial project applicants. Actively seek projects for which the County can provide technical assistance.

j) Use biofilters for vegetated slopes, channels, and parking areas to allow runoff to move slowly over vegetation.

k) Promote water conservation programs and require native, low water consuming vegetation in new or renovation projects.

l) Encourage the use of edible landscape materials.

m) Increase the use of Integrated Pest Management (IPM) by promoting IPM to agencies and the public; encouraging plant nurseries to use and promote IPM; and continuing and expanding the programs established by the IPM Commission to reduce or avoid pesticides, herbicides, biocides, and other chemicals on County projects.

n) Require green building as a condition for approval for new market rate projects and significant renovations. A checklist developed in conjunction with building professionals will determine which projects get approved.

o) Provide free green building technical assistance to affordable housing applicants. Actively pursue funding to assist the ability of affordable housing projects to use energy efficient and green building materials.

p) Create a green building training program for building professionals in partnership with the Builders Exchange.

➢ Sample indicators

a) The average annual energy use per residence, in relation to a 1990 baseline (Pacific Gas & Electric).

b) The average annual water use per residence, in relation to a 1990 baseline (Marin Municipal Water District, North Marin Water District).

c) The percentage of green building materials used, in relation to a 1990 baseline.

d) The rate of increase in impervious paved surfaces in relation to the rate of increase in population.

➢ Sample targets

a) Reduce the amount of resources consumed for housing needs by 25 percent by 2020.

b) Ensure that 10 percent of all new or remodeled buildings use green building design and materials by 2010 and 25 percent by 2020.

c) Ensure that 30 percent of new dwellings and 50 percent of new commercial space is built within ¼ mile of an existing or planned transit stop by 2020.

d) Sixty percent of new housing is constructed in walkable neighborhoods with a mix of owner occupied and rental residences, in a wide range of household sizes, types, and income levels.

e) Ensure that the children and parents of Marin residents are able to find suitable housing in the same neighborhood.

f) Seventy-five percent of new residences are built within walking distance of an elementary school by 2015.

4. Infill and Redevelopment

➢ Background and trends

Recent new development in Marin County has been relatively low in density. The bulk of new development in Marin County in the past 40 years has been composed of relatively low density suburban housing tracts, shopping malls, and office and industrial parks. Most buildings are one and two stories in height and provided with a large supply of surface parking.

In order to improve transit services and relieve traffic congestion, nodes of higher intensity mixed-use development are needed. One of Marin County's main goals over the past 30 years has been to improve the transit services available to its residents. Traffic congestion and its impacts on the urban and natural environments are a major concern. Yet convenient and cost-efficient transit systems have not yet proved to be a viable alternative to driving a private automobile. This is due in large part to the lack of centers with a population density that will support transit service at sufficiently frequent intervals to make transit a reasonably convenient and attractive alterative to driving.

➢ Issues

Infill development should be located, sited, and designed for a long life cycle, and for long-term flexibility and adaptability of building use.

a) Current needs ought to be considered in the context of respecting Marin's history without being solely bound to its tradition.

b) Commercial areas need to be better utilized: They have transit proximity, opportunities for retrofitting shopping centers, and air rights over parking.

New development should be in the form of infill whenever possible and should be compatible with the unique design character of Marin.

a) Housing development must be infill; transit and pedestrian oriented; and near jobs, shopping, and recreation.

b) Neighborhood identity should be clearly identified and preserved. The County should require compatibility with existing residential development.

c) Design guidelines should be developed that focus on mixed-use and reuse development.

➢ Strategies

Mixed-use infill development should be encouraged in appropriate transit-served locations.

a) Encourage mixed-use development of residential over office and commercial.

b) Match jobs and housing in quantity and location.

c) Target commercial parking lots for redevelopment.

d) Focus on transit-oriented development.

e) Identify countywide opportunity areas for infill and mixed use development, and work with Marin towns and cities to prepare specific plans for their improvement.

Develop standards for increased density, mixed-use, transit oriented development near

transit nodes.

a) Develop design guidelines that focus on mixed-use and reuse development.

b) Define flexible-use building types for mixed-use neighborhood center zones, which can be adapted to new uses over time with minimal internal remodeling, avoiding the need for expensive and energy intensive demolition and reconstruction.

c) Establish zoning for attached single-family homes, or townhouses, which not only occupy less land per dwelling but also expose less exterior surface area to the weather, reducing heating and cooling needs.

d) Amend commercial and office zoning districts to allow mixed-use development.

e) Rezone commercial areas to allow for mixed-use infill development in or above parking lots.

f) Include provisions for increasing building height to accommodate parking structures with housing.

Develop design standards and guidelines for increased density, mixed-use, transit-oriented infill building types.

a) Clearly articulate design standards for commercial, industrial, mixed-use, and residential development in order to achieve high quality site designs and to streamline applications for development.

b) Develop design guidelines that focus on mixed-use and reuse development.

➢ Sample indicators

a) The square footage of remodeling and renovation permits as a percentage of total construction permits (Marin County Community Development Agency).

b) The percentage of building area entitled on previously built sites as a percentage of total new building area entitled (Marin County Community Development Agency).

c) The public subsidy per passenger mile of bus route, compared with 1990 levels, adjusted for inflation (Golden Gate Bridge, Highway and Transportation District, Metropolitan Transportation Commission).

d) The average square footage per residence, compared with 1990 averages. This could be divided to measure the averages for residences more and less than ¼ mile from a transit stop (Marin County Community Development Agency).

➢ Sample targets

a) Ensure that 30 percent of new dwellings and 50 percent of new commercial space are built on previously developed sites by 2020.

b) Increase transit ridership by 40 percent by 2020, relative to 2000 levels.

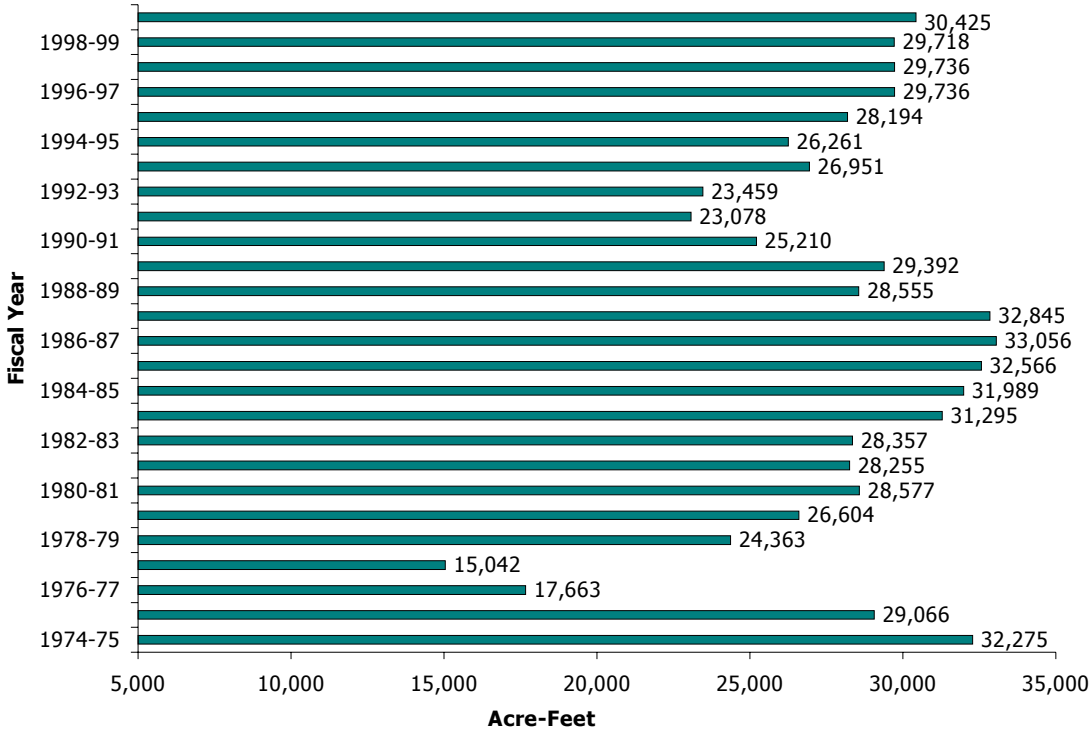
E. COMMUNITY FACILITIES

1. Water Supply

➢ Background and trends

The Marin Municipal Water District is anticipating increased water demand over the next 20 years. Thanks to aggressive conservation programs adopted during the last drought, the Marin Municipal Water District's (MMWD) annual water production has remained relatively stable over time. Demand has remained below peak 1987 levels, despite an estimated 15 percent increase in population. Nevertheless, MMWD demand has been steadily rising for the past several years (Figure III-23).

Figure III-23
Marin Municipal Water District: Annual Water Production



Source: 2001 Huffman

III

The Marin Municipal Water District reports that 5,400 acre-feet per year of additional water supply will be required over the next 20 years (Figure III-24).

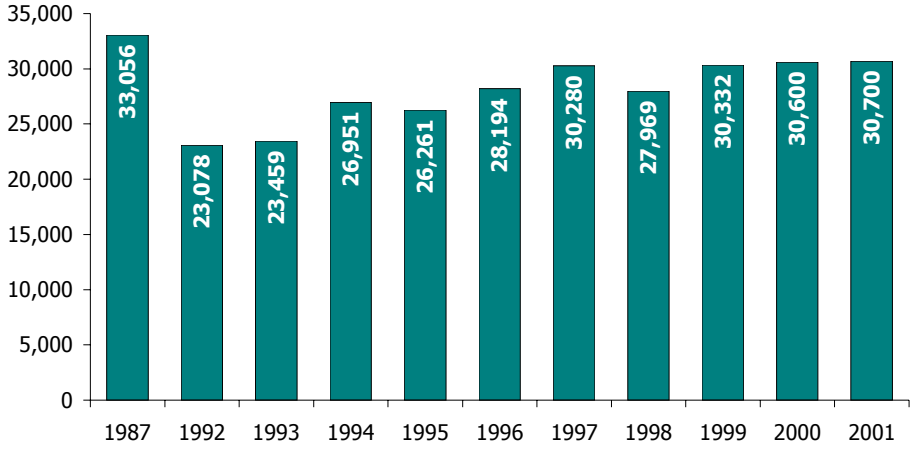
Figure III-24
Marin Municipal Water District:
Water Demand Projections for 2020

Supply	Acre-Feet/Year
Current operational yield	28,600
Current demand estimate	32,500
Projected increase in demand by 2020	2,160
Projected reduction in North Marin pipeline capacity	2,300
Amount required through additional conservation, recycling, and supply	8,360

Source: 2001 Huffman

From 1992 to 2000, per capita water consumption has increased dramatically, from just over 4,600 ccf in 1992 to more than 5,400 ccf in 2000 (1 ccf = 100 cubic feet, or 748 gallons). (It should be noted that 1992 was a drought year.) Demand for water recently began to exceed MMWD's operational yield of 28,600 acre-feet per year "operational yield" is the amount of water MMWD can reliably deliver over time without overdrafting its reservoirs and while meeting service level goals relating to the depth and frequency of rationing) (Figure III-25).

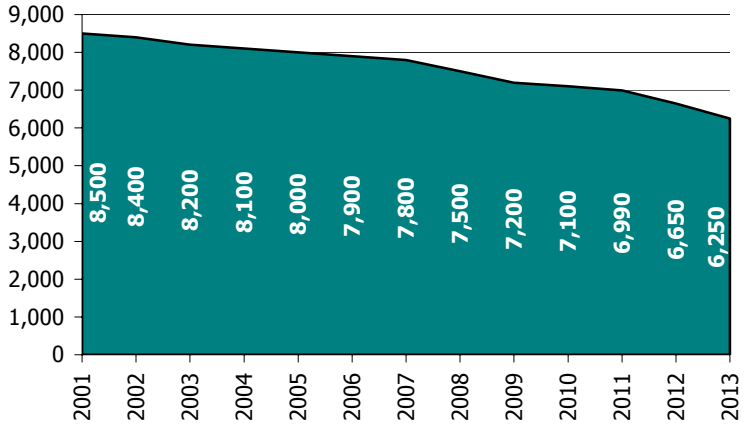
Figure III-25
Demand for Water in Marin: Acre-Feet of Water Used



Source: 2001 Huffman

Per capita demand has been increasing at an even greater rate despite strong conservation measures. MMWD's share of the delivery capacity of the Northern Marin pipeline is expected to decrease from 8,500 acre feet in 2001 to 6,250 acre feet in 2013 (Figure III-26).

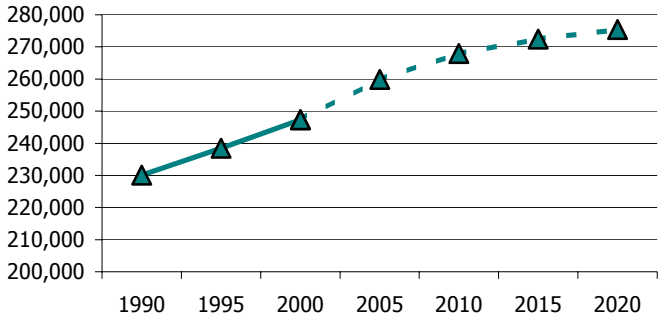
Figure III-26
Marin Municipal Water District's Delivery Capacity



Source: 2001 Huffman

The population of Marin County is expected to increase to nearly 275,000 over the next 20 years, according to ABAG (Figure III-27).

Figure III-27
Marin County Population, 1990–2020



Source: U.S. Census Bureau

Water supply conditions vary in different parts of the county. The North Marin Water District estimates that an additional 8.7 million gallons per day of peak-month service capacity will be needed by 2025. In West Marin, the Bolinas Public Water Utility District (BPUD) has a moratorium on new water service connections because demand is equal to capacity and there are chronic shortages in the dry season.

➢ Issues

Careful water supply planning is needed, and the constraints need to be examined.

a) Development is not congruent with the available water supply, and tension is mounting around this issue.

b) Historically, water planning has been determined by estimating demand and providing supply, versus focusing efforts on demand reduction programs.

c) There is potential for more efficiency in water districts and more potential for cooperation between water districts and sanitation districts.

d) County government is not sufficiently involved in water planning.

e) Data is lacking on how much water is consumed by various land uses.

f) There is a lack of information and education on water sources, the energy used to create supply, and environmental impacts. Information could be provided at water taps in public facilities.

There is debate over new sources of water supply—desalination or a pipeline bringing water from the Russian River.

a) Desalination technology costs are decreasing and coming close to the cost of delivered water. The Russian River pipeline option is estimated by MMWD to cost $1,000 to $1,500 per acre-foot, while desalination is estimated to cost $1,200 to $1,800 per acre-foot. There are factors skewing unit-cost comparison.

b) There is limited flexibility for Russian River deliveries in that the Sonoma County Water Agency contract regulates timing and amount of water access.

c) The operational flexibility of desalination is questionable.

d) Voters approved the Russian River pipeline in 1992, but it has not been constructed due to increased concerns about reliability, environmental issues, and costs.

e) Desalination is attractive because it is drought proof and provides high quality water. However, desalination uses considerable amounts of energy and generates brine, which must be disposed of.

f) Unit costs may skew the comparison between desalination and the Russian River pipeline because desalination is more operationally flexible. For the pipeline, MMWD's contract with Sonoma County contains "off-peak" and "take or pay" provisions, which in many years result in purchases of water that is not needed. A desalination plant, however, can be turned up or down as needed.

g) Russian River water is of excellent quality but draws water from outlying areas and watersheds beyond that of the river. In the summer months, most of the Russian River's flows are actually diversions from the Eel River.

Water conservation measures could reduce the need for additional water supply.

a) Increasing conservation is difficult but still more cost effective than making major infrastructure improvements, which include the Russian River pipeline and desalination.

b) Change-out programs (replacing high flow toilets with low flow ones) and other conservation programs are generally more cost effective than capital projects.

c) Water conservation measures need to be implemented by all community types, including high income communities.

d) The water rate structure for the North Marin Water District should be tiered to encourage conservation.

e) The County could continue to set an example by expanding water conservation at all of its facilities.

f) The recent rise in water consumption can be attributed primarily to outdoor landscaping water use.

West Marin communities have a limited water supply and unique water issues.

a) For West Marin residents served by coastal wells, saltwater intrusion on the coast may be limiting the availability of drinking water.

b) Stream water turbidity caused by heavy winter storms is an issue for the Bolinas Community Public Utility District, since suspended particles and debris can overload the capacity of the treatment plant to purify the stream water.

c) The Inverness Public Utility District (PUD) has no reservoirs for long-term storage. The water system is dependent for its supply on the daily flows in the springs in the watershed. In late summer and fall the amount of water available in the springs sometimes gets very close to equaling the water system's demand. There is no more surface water available in the District's watershed.

d) Water demand is increasing in Inverness because large houses are being built or remodeled and landscaped. Many irrigation systems are on automatic timers and use more water than houses with more natural drought-tolerant landscaping. Water use during the dry season has increased 3.2 percent over the past decade.

e) The Muir Beach Community Services District (CSD) is concerned with delivering water to residents through a water-delivery system that is more than four decades old in some places and suffers from deferred maintenance.

Other issues include groundwater and other ways to conserve and reuse water.

a) Individual diversion of groundwater and streams can result in creating fish migration barriers.

b) Potable reuse could help meet some of our demand for water, but the concept is politically unpopular.

c) There are conflicting regulations about graywater use among Marin County agencies, the North Marin Water District, and the Marin Municipal Water District.

d) People would invest in graywater systems for their homes if there were additional financial incentives.

e) Further information is needed on composting toilets and other experimental types of facilities.

f) A minimum development standard for on-site water retention is lacking.

g) New developments are not being designed to capture rainwater because of existing regulations, and programs do not encourage this practice.

➢ Strategies

Increase water-conservation measures.

a) Study the impacts of increased development and higher densities on water demand.

b) Develop measures to reduce Marin County's dependence on fresh water sources, especially diversions from environmentally sensitive rivers and streams.

c) Support the Marin Municipal Water District's tiered water rate structures to encourage water conservation.

d) Urge the North Marin District to adopt the California Urban Water Conservation Council Best Management Practice of tiered billing rates to encourage water conservation.

e) Develop a model water conservation program to be implemented at all County buildings (such as the Civic Center), landscaped areas, and parks. This model program could be used as an example for other jurisdictions.

f) Institute a water conservation program for all County facilities. Install zero-flow urinals and low-flow toilets, sinks, and showers. Continue to use recycled water in the chiller of the Civic Center and encourage the use of recycled water in other County facilities, use drought-resistant landscaping for all County facilities and public roadway landscaping, and use little to no potable water for landscaping.

g) Require compliance with the County's water-conservation measures, such as requirements for use of native plants in landscaping and water-conserving fixtures in buildings.

h) Develop public information fact sheets with water consumption rates for various land uses, water conservation suggestions, the amount of energy that was used to create the water supply, and the environmental impacts.

i) Require drought-tolerant landscaping on all new development and re-landscaping projects over a certain size to reduce the amount of water used for irrigation.

j) Conserve water both to decrease use of a scarce resource and to reduce the consumption of energy for water distribution.

k) Encourage farms to create water retention ponds for on-site agricultural use.

l) Encourage the use of recycled water for landscaping on public and private land.

m) Encourage and support water conservation and efficiency programs implemented by the Marin Municipal Water District and North Marin Water District.

Evaluate and consider implementing a variety of techniques for conserving and reusing water.

a) Evaluate the benefits and costs of desalination as a water source, including measures to reduce the environmental impacts of desalination, such as renewable energy generation and blending of brine discharge with existing wastewater outfalls.

b) Encourage use of rainwater catchments. Evaluate the use of small-scale portable graywater converter systems as a possible water source for landscaping. Reevaluate graywater regulations and modify them as necessary to encourage its use.

c) Provide financial incentives to encourage people to invest in graywater systems for their homes.

d) Provide information on composting toilets and other experimental types of facilities.

e) Create development standards for capturing rainwater for irrigation.

f) Require homes over 5,000 square feet to reuse 25 percent of their own water through catchments and/or water recycling.

g) Upgrade the water delivery systems in West Marin to reduce the incidence of saltwater intrusion and leakage.

h) Study efficiency and cost effectiveness of rainwater harvesting systems, infiltration, and recharging patterns of groundwater aquifers to assess the most feasible water sources.

i) Conduct a groundwater study of groundwater availability and water quality of the Tomales Bay watershed, including the Walker, Lagunitas, Stemple, and Olema Creek watersheds, and the aquifer bordering the Petaluma River.

➢ Sample indicators

a) Monitor MMWD and NMWD reservoir levels (Marin Municipal Water District and North Marin Water District).

b) Measure the amount of water supplied by the Russian River (Marin Municipal Water District and North Marin Water District).

c) Track the rate of water consumption by County government and countywide (Marin Municipal Water District and North Marin Water District).

d) Track recycled water use (Marin Municipal Water District and North Marin Water District).

e) Measure water use per capita (Marin Municipal Water District and North Marin Water District).

➢ Sample targets

a) Increase water-conservation measures in use by regulated industries by 10 percent by 2010 over 2000 levels.

b) Increase water catchments by 25 percent by 2010 over 2000 levels.

2. Sanitary Districts and Sanitary Waste Disposal

➢ Background and trends

Sanitary districts throughout the county have to address the need for expanded capacity and upgrading of facilities. The Las Gallinas Sanitary District and the Novato Sanitation District will need to expand in order to serve the large parcels that are anticipated to develop within the next 10 years. Sanitary District #5 (Tiburon Area) will reach its capacity by 2003.

The Southern Marin Sewerage Agency assumed ownership of a five-mile trunk sewer system from member agencies. This system requires upgrading to prevent sewer system overflows and backups. The estimated cost is $1,800,000, and the project should be completed in 2003.

The Ross Valley Sanitary District #1 has some areas that are served by septic systems. Property owners are connecting to the sewer service as required. An assessment district may be an option if a majority of the property owners agree.

The Seafirth treatment plant, located between Corte Madera and Tiburon, is privately owned by 100 property owners. The plant has operating problems, and the residents are interested in annexing to a public treatment facility.

The Bolinas Community Public Utility District (BCPUD) is currently operating at capacity in non–dry weather months; therefore, there is a moratorium on new connects to the system.

➢ Issues

Issues of concern to sanitary districts include releasing sewage into the bay, upgrading and improving facilities, funding upgrades and maintenance during a time when electricity costs are rising, and trying to keep customer rates down.

a) Concerns of the Las Gallinas Valley Sanitary District include sewage violations by the district; heavy metal deposits, such as mercury, zinc, and copper, which are building up in the District's treatment plant; the need to improve management of natural and financial resources; funding the upgrading of aging pipes and other equipment; improving communication with the public; and dealing with methane gas on District lands.

b) The Sausalito/Marin City Sanitary District will be required to upgrade two additional pump stations, replace two pump stations with gravity sewers, rehabilitate the Marin City collection system, and install a new sludge dewatering facility at the treatment plant. These improvements will not increase the system's capacity but will allow it to handle present peak flow conditions more safely.

c) The Bolinas Community Public Utility District (BCPUD) needs to upgrade its system to increase capacity at an estimated cost of $1.2 million.

d) There is a need for the County to develop new septic regulations.

➢ Strategies

Encourage sanitary districts to support and participate in water conservation programs.

a) Include consideration of volumetric billing and partnering with water districts to reduce the volume of wastewater that must be treated.

b) Strongly urge the County to support the use of treated wastewater for irrigation by using wastewater to irrigate County-owned properties and encouraging wastewater irrigation at other public and private facilities.

Reduce the toxic impacts of sewage treatment.

a) Develop policies and programs that encourage biological treatment of sewage.

b) Encourage the sanitary districts to reduce the number of sewage violations.

c) Encourage the sanitary districts to reduce the accumulation of heavy metal deposits, such as mercury, zinc, and copper, in their treatment plants.

➢ Sample indicators

a) Measure levels of heavy metals, such as mercury, zinc, and copper, in wastewater (Marin County Department of Public Works).

b) Measure the amount of wastewater that is recycled and reused (Marin County Department of Public Works).

➢ Sample targets

a) Reduce heavy metal deposits at sewage treatment plants by 20 percent by 2020.

b) Increase the amount of wastewater that is treated and recycled by each sanitary district by 20 percent by 2020.

3. Public Utility Districts and Community Services Districts

➢ Background and trends

Special districts that provide water and other facilities have a variety of supply concerns. In terms of water supply versus water demand, certain West Marin districts periodically experience water supply shortages during peak-use periods and drought conditions. For example, the Inverness Public Utility District's available water volume can range from a high of 2 million gallons per day in winter during heavy rainfall periods to a low of 69,000 gallons per day, which occurred during August 1994, following the 1993-94 drought (Marin Countywide Plan Community Facilities Technical Report, 2001).

The Bolinas Community Public Utility District (BCPUD) has had to impose building moratoriums on new water service connections due to lack of adequate water storage capacity. The first moratorium was enacted in 1971. The BCPUD currently has a moratorium in new water service connections due to chronic water shortages during the dry season (Marin Countywide Plan Community Facilities Technical Report, 2001).

➢ Issues

Special districts are faced with resource and maintenance issues.

a) The Inverness Community Plan needs to consider how the community is going to address its water needs in an era of increasing demand for limited resources.

b) The Bel Marin Keys Community Services District is concerned about how to deal with the unincorporated waterfront community's silted lagoons and deteriorating lock system, and how to fund planned improvements to waterways.

➢ Strategies

Address supply and maintenance issues.

a) Work with the Inverness PUD on updating the Inverness Community Plan to identify ways to address the demand for resources.

b) Encourage Bel Marin Keys to identify strategies for addressing waterfront silting and improvement cost demands.

➢ Sample indicators

a) Monitor annual water production in acre-feet per year for each district (Sanitary Districts, Marin County Department of Public Works).

b) Monitor average daily demand of the peak month (in million gallons per day [mgd]) for each district (Sanitary Districts, Marin County Department of Public Works).

➢ Sample targets

a) Increase the installation of water conservation devices by 25 percent by 2010 and 50 percent by 2020.

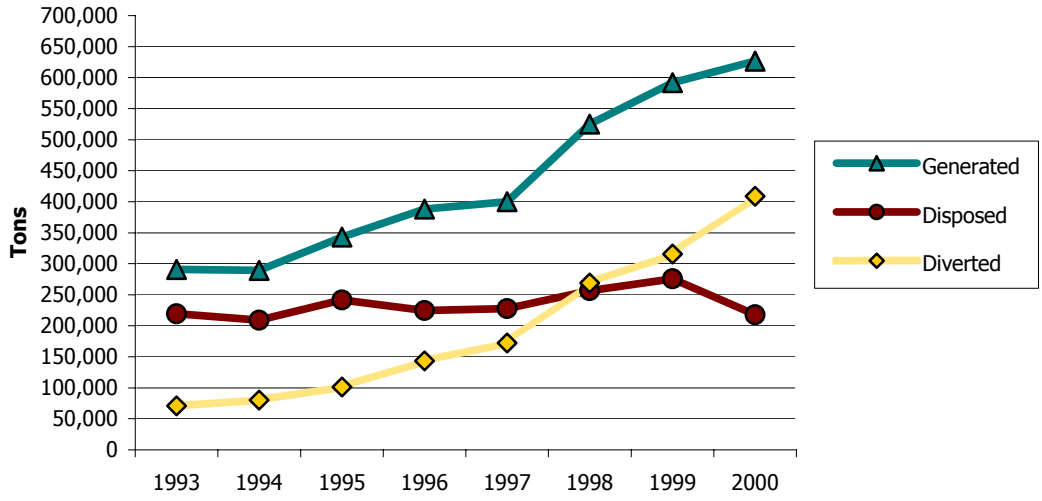
b) Water demand will not increase by 2010 over 2000 levels.

4. Solid Waste

➢ Background and trends

Marin County's solid waste generation is increasing, but diversion from landfills is also high. There are approximately 30 known solid waste sites in Marin County, including a solid waste landfill, a composting facility, a materials recovery facility, and a large-volume transfer and processing facility (Snyder and Smith Associates). Marin County has significantly increased the percentage of solid waste diverted from landfills. Only 24.4 percent of all waste was diverted from landfills in 1993, compared with 65.2 percent by 2000. During the same period, however, waste generation increased 115.7 percent, from 290,519 tons to 626,696 tons (Figure III-28).

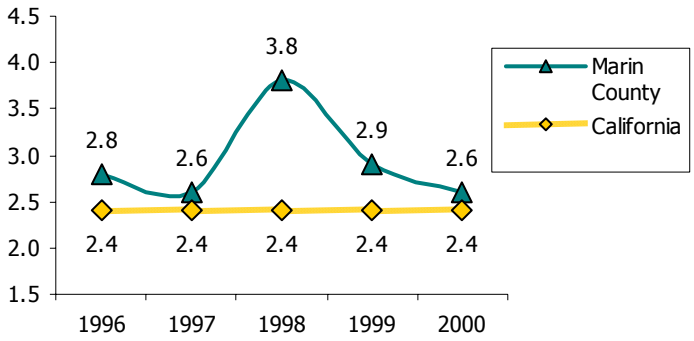
Figure III-28
Waste Generation: Disposal and Diversion Rates



Source: Marin County Hazardous and Solid Waste Management Authority

Residential disposal rates have varied but are above the state average. While the average resident disposed of 2.4 pounds of waste per day in California, in Marin the amount varied from a low of 2.6 pounds in 1997 and 2000 to a peak of 3.8 pounds in 1998 (Figure III-29).

Figure III-29
Residential Disposal Rates
Per Resident, Per Pound



Source: Integrated Waste Management Board

Hazardous waste disposal regulations are changing. The State of California is attempting to reduce overlap and redundancy within the hazardous materials regulations and enforcement efforts. The state is promoting site-specific health-based risk analysis cleanup standards versus broad, conservative regulation standard and a tiered permitting process, which indicates an interest in public health and the environment.

➢ Issues

Despite very high recycling, Marin County can do more to reduce waste.

a) Marin County's Regional Integrated Waste Management Plan needs to be implemented.

b) Rules for diverting construction waste from landfills exist in some communities but not in Marin.

c) Since there is no landfill or transfer station in West Marin, residents must drive to the Redwood landfill in Novato to dispose of refuse. Because of the lack of an easily-accessible disposal site, there is considerable illegal dumping of trash.

➢ Strategies

Pursue additional efforts to reduce waste.

a) Create a construction and demolition waste ordinance to divert construction waste from landfills.

b) Continue to impose aggressive recycling, resource recovery activities, and composting efforts to reduce the amount of waste diverted to landfill.

c) Enact educational programs to inform residents about recycling and composting programs.

d) Develop an education program and a Web site about diversion of construction waste from landfills to other sites within the county.

e) Explore the feasibility of establishing a transfer station in West Marin.

➢ Sample indicators

a) Annually measure the diversion rate of waste from the Redwood Landfill in accordance with the California Integrated Waste Management Act of 1989 (California Integrated Waste Management Board).

b) Measure the percentage of reduction in landfill solid waste volumes (California Integrated Waste Management Board).

➢ Sample targets

a) Recycle at least 50 percent of Marin County construction waste by 2005.

b) Increase the waste stream diversion rate to 75 percent by 2020.

5. Emergency Preparedness

➢ Background and trends

Disasters are increasingly complex. The scope of disasters continues to broaden. No longer does emergency response focus solely on life-safety or property and environmental protection. A focus on efficiency has led to increased dependence on technology to communicate and manage personnel and equipment during an emergency response. There are fewer government resources. Government in California is growing at one-half the rate of the population. The government resources available in a disaster are now relatively fewer and less available than in the past.

Threats to life, property, and the environment in Marin County are increasing in variety and frequency, such as earthquakes, fires, floods, and diseases. There is significant evidence that earthquake activity is increasing in the Bay Area. The chance of a major earthquake (6.7 on the Richter scale) hitting the Bay Area before 2030 is estimated at greater than 70 percent.

Global warming is expected to cause an increase in weather severity and rising sea levels. Rising sea levels will cause increased localized flooding in low-lying coastal areas and will increase coastal erosion. Expected and predicted impacts from global warming and the resulting rise of sea levels on coastal areas include increased coastal erosion, increased saltwater intrusion, increased flooding in low-lying areas, and liquefaction of soils.

➢ Issues

Emergencies can be caused by a variety of events.

a) There are threats of drought based on increasing population versus decreasing water supplies. Environmental restrictions being placed on the Eel and Russian rivers will impact Marin's ability to draw water from these sources.

b) There are threats from wildfires. Controlled burns are not keeping pace with the growth of vegetation. Heavy vegetation combined with the housing patterns in Marin creates a significant fire hazard. Sudden Oak Death will exacerbate this problem.

c) Recent evidence indicates that the most significant threat from tsunami comes not from an earthquake in Japan, Alaska, or Chile, but instead from an underwater landslide or earthquake just off the California coast; the resulting tsunami could hit the coastline within 20 to 30 minutes.

d) There are potential threats, including nuclear and biological threats from terrorists.

e) Perhaps the greatest threat to life in Marin is that posed by a public health crisis. An outbreak of a communicable illness, such as drug-resistant tuberculosis or pandemic influenza, would pose a grave challenge to the local medical institutions.

Government agencies have to face many challenges to be able to respond effectively to emergencies.

a) Emergency response requires an increasingly sophisticated and coordinated effort on the part of local and state government agencies, as well as community groups and nonprofits. The effects and response to a disaster can last years. Jurisdictions in Marin County need to train exhaustively for emergency preparedness.

b) Technology is vulnerable to disruption from natural events as well as criminal attack. Manual back-up systems must remain in place.

c) Increasingly, local governments are required to develop plans and procedures that address other disaster-related issues, including sheltering special-needs populations, complying with the Americans with Disabilities Act, mitigating economic losses including tourism, and addressing the mental and emotional needs of victims and responders. Some jurisdictions address emergency preparedness in their general plans.

d) With a relative reduction in resources and increased complexity, local communities are increasingly reliant upon outside assistance following a disaster. No longer can a community take care of itself—emergency response must focus on bringing resources from outside the affected area. This interdependence places a great premium on the ability to communicate and manage people and equipment during a crisis.

e) City, County and special district employees are increasingly living outside Marin County. A recent survey of County employees showed that 44 percent live outside the county. This will have a major impact on the ability of local governments to respond during a disaster—especially if access routes like Highway 101 or 37 are closed down.

f) Government resources that can be brought to bear in a disaster are becoming relatively fewer and less available. Additionally, the federal military agencies have closed almost all of their Northern California installations in the last 10 years, and the National Guard has lost 50 percent of its strength. Governments have moved fully out of the civil-defense structure seen from 1949 through 1989. There are no warehouses full of disaster supplies, and either few or no community response teams.

g) A contingency plan is needed for critical lifelines (power, water) if they are unavailable.

h) Building a north-south bikeway parallel to Highway 101 creates a new transit corridor that could serve emergency vehicles if the highway is blocked.

i) Marin cities do not have an emergency manager on staff. The preference of the Office of Emergency Services (OES) is for each city to have at least an emergency manager on staff on a part-time basis.

j) Increased interdependence and reliance on outside counties and agencies for assistance, supplies, and other resources is a challenge. The County does not have enough resources on hand to be able to cover needs. In the event of a disaster, it is a challenge to quickly identify the resources needed, which requires significant coordination and management among OES staff, both internally and external to outside agencies. This could result in a delay in getting resources to the area.

k) The County could take an active role in hazard mitigation by focusing on prevention and minimizing their effects.

l) The County does not have adequate storage or warehousing facilities for emergency vehicles and equipment.

m) Marin County has not received national or international certifications that verify the community's level of readiness for a particular type of disaster. Examples of such certifications include the National Fire Protection Association's 1600 Standard on Disaster/Emergency Management and Business Continuity Program (NFPA 1600), and the National Weather Service's StormReady and TsunamiReady Programs.

n) The County Emergency Operations Center is too small, and a new one needs to be constructed, as well as an alternative center.

o) In an emergency, all the local agencies (municipal, fire, and water) require a reliable method for speaking with one another.

Local residents and communities need to be prepared for emergencies.

a) Most neighborhoods are not prepared for disasters. Most families do not have a food and water contingency plan for emergencies. Marin County residents must expect to be on their own for at least 72 hours following a major event.

b) Better exit plans are needed for hillside residents if their primary access is blocked. Bicycling and walking may be the only practical transportation means in some areas during an emergency.

c) Planning for special needs populations during emergencies is being promoted in communities.

➢ Strategies

Improve government ability to respond to emergencies.

a) Support the Office of Emergency Services (OES) efforts to oversee emergency response that identifies and coordinates all potential allies during an emergency, such as nonprofits, hospitals, and schools.

b) Support the OES Emergency response plan that identifies potential threats and the appropriate responses.

c) Build the new OES Emergency Operations Center, which will support the management of response activities during a disaster.

d) Continue to train Marin County staff in emergency procedures and the emergency response plan.

e) Complete the north-south bike route with design features that will accommodate emergency vehicles if the highway becomes impassable.

f) Encourage jurisdictions to create an emergency response plan if one does not already exist in their master plan.

g) Integrate into the County Space Plan the minimum requirements for the County Emergency Operations Center expansion needs.

h) Ensure that the Marin Emergency Radio Authority (MERA) project is completed.

Educate the public about emergency preparedness.

a) Establish an "Emergency Preparedness Awareness Week" for an annual public education campaign about what families should do to prepare for potential emergencies. Educational programs in schools could also occur during this week.

b) Encourage residents to have 72 hours of water, food, and other supplies available; to plan multiple exit routes from both the house and the neighborhood; to prepare for situations when roads are not passable by car traffic; and to undertake other preparatory actions.

c) Encourage the installation of automatic natural gas shut-off valves in residential and nonresidential buildings and have neighborhood emergency-response groups educate others about the location of natural gas shutoff valves and prepare neighborhood emergency plans.

d) Encourage residents to go through the Community Emergency Response Training (CERT) so that they can serve as civilian volunteers during an emergency.

e) Support affordable housing for emergency response personnel so that they are able to purchase a house within the county if they desire to do so.

f) Develop a contingency plan for special needs populations, which might include identification of their location and special need and an identification of reaction requirement given the emergency.

g) Prepare an education program for businesses and families for emergency preparedness, which might include evacuation plans, and on-site storing of adequate water and food.

➢ Sample indicators

a) Number of disaster readiness or training certifications received by County departments (Office of Emergency Services).

b) Percentage of County employees trained through the Emergency/Disaster Operations and Introduction to Standardized Emergency Management System (SEMS) training (Office of Emergency Services).

c) Percentage of communities with 1 percent of their population trained in Community Emergency Response Training (CERT) (Office of Emergency Services).

➢ Sample targets

a) Complete the Office of Emergency Services' Emergency Operations Center by 2008.

b) Train 95 percent of County employees in the Emergency/Disaster Operations and Introduction to Standardized Emergency Management System (SEMS) training.

c) Train 1 percent of the population of every community in Community Emergency Response Training (CERT).

6. Fire Protection

(See also II. Natural Systems, B. Environmental Hazards, 4. Fire Hazards.)

➢ Background and trends

Efforts are being made to reduce fire hazards around buildings. New development in the outskirts of cities but in the unincorporated areas require a fuels management plan and an automatic sprinkler system in buildings. Vegetation management programs are being promoted; this includes clearing flammable vegetation away from structures.

➢ Issues

Fire protection agencies are facing the need to upgrade equipment and personnel.

a) The comprehensive plan for the Novato service area calls for a fire station with a paramedic engine company in the southern portion of the fire district.

b) Water pressure in some hillside areas is not adequate for fire protection.

c) Many areas of the county are located a great distance away from or are difficult to get to from fire stations.

d) The current fireboat used by the Sausalito Fire Department to protect the waterfront has limited access in certain tidal conditions, in shallow water, and where there is debris on the bottom of the bay.

e) The 1999 Fire Flow and Seismic Improvement Master Plan from the Marin Municipal Water District established priorities for water distribution in the Tiburon Peninsula where fire flow was low. The 3000 to 4000 block of Paradise Drive was not included in this plan for update.

f) The Bolinas Fire Protection District has a station that is seismically inadequate and too small to meet its current need.

g) The West Marin Fire District counts on volunteers to become as highly trained as firefighters in paid departments, but the number of volunteers is quickly becoming depleted due to the age of the population and a change to more of a weekend vacation population.

h) Inverness has several engines and utility vehicles that are 20 or more years old and that need replacement, but fiscal considerations have constrained the replacement.

➢ Strategies

Use personnel effectively for fire protection and emergencies.

a) To better serve Marin's aging population, encourage Novato, like San Rafael, to require that firefighters be certified Emergency Medical Technicians as a condition of employment.

b) Continue to maintain adequate response times by continuing to use mutual aid for fire protection.

c) Promote the value of fire volunteering to the younger people in West Marin.

Consider fire protection needs in building and development policies.

a) Continue to encourage more urban development in the City-Centered Corridor to maintain development in the areas serviced by public utilities.

b) Aggressively promote vegetation clearing from structures as a fire management technique.

c) Continue to support the Fire District's requirement for on-site water retention for parcels located in areas with inadequate water flow.

Provide necessary facilities and equipment.

a) Encourage a Sausalito Fire Department committee to finalize specifications and recommend purchase of a new fireboat for the Sausalito waterfront floating homes.

b) Encourage the Marin Municipal Water District to consider adding to its Fire Flow and Seismic Improvement Master Plan improvements required for the 3000–4000 block of Paradise Drive.

c) Encourage the Bolinas Fire Protection District, along with other public and private sources, to continue to seek funding for its station-rebuilding project.

d) Encourage Inverness to seek public or private funds for the replacement of its engine and utility vehicles, which are each more than 20 years old.

7. Police Protection

➢ Background and trends

Police agencies are broadening their functions and using volunteers to supplement paid staff. Police officers are now bridging the gap in social services by working with mental health patients and Health and Human Services. Volunteers to supplement sworn officers for specialized duties (airplane crew, patrol boat staff, mounted deputies, specialized event patrol) continues to be used extensively for the Marin County Sheriff's Department.

➢ Issues

a) If Marin City were to be annexed to Sausalito, additional police officers and equipment would be needed, and additional space is not available at the existing facility.

➢ Strategies

Meet staffing and facility needs.

a) Continue to provide the social benefits of alternative health services instead of jail for people with mental health problems who are nonviolent.

b) If Marin City is annexed to Sausalito, revisit their need for additional officers or building space.

c) As the population ages and the use of volunteers does not subside, the Marin County Sheriff's Department needs to continue to recruit volunteers to replace those retiring.

8. Schools

➢ Background and trends

Current trends in school-age population may not continue. The increase in elementary school children in the mid-1990s caused some school districts to reopen closed schools and expand existing facilities. Since 1985 the following school districts have experienced a steady increase in average daily attendance: Dixie, Kentfield, Larkspur, Ross Valley, San Rafael Elementary, and Novato Unified.

In Marin County the proportion of the population composed of children 17 years old or younger is expected to decrease by 27 percent. The decrease in the number of children may bring about the closure of schools and may reduce the demand for child-care services.

➢ Issues

There is uncertainty about the merger of two school districts in San Rafael.

a) Depending upon a decision of the California State Board of Education, voters may consider the unifying of the San Rafael Elementary and the San Rafael High School Districts in 2003. Many are concerned that less money per student will be allocated to the unified district. Also, the future existence of the continuation school is unknown; and the Santa Venetia students currently going to Terra Linda High School may or may not continue to go there.

b) Decreased State funding may substantially impact Marin school districts.

➢ Strategies

Provide adequate facilities and assess future needs.

a) Seek additional funding sources for capital improvements to school facilities.

b) Conduct a study to reassess whether the development fees currently collected with building permits adequately meet the school facilities' needs.

c) Find multiple uses for schools to meet other community needs.

d) Encourage the County to create smaller neighborhood schools throughout the county so that children can safely walk or bike to school.

e) If the California State Board of Education agrees to the unification of the San Rafael Elementary and San Rafael High School districts, encourage the community to consider all the impacts when voting in 2003.

f) Encourage the school district to continue to follow trends in numbers of school-age children and assess facility needs.

➢ Sample indicator

a) Measure enrollment figures against the maximum design capacity of each school (Marin County Office of Education).

➢ Sample target

a) Ensure that by 2020, enrollment within 90 percent of the school districts will not exceed design capacities for their schools.

9. Libraries

➢ Background and trends

The Marin County Free Library (MCFL) system currently serves roughly one million visits per year. This has remained relatively unchanged since fiscal year 1996–97, when the population in the MCFL service area was 132,310. In fiscal year 2000–01, the service area population was 136,875. It is expected that future visits to the library system will increase as the demographics of the county evolve.

In particular, the number of visits from immigrant and elderly populations is expected to grow (Marin County Grand Jury).

The MCFL circulates approximately 1¼ million volumes and processes more than 150,000 reference requests per year. Reference requests have been steadily declining, dropping from 235,085 in fiscal year 1996–97 to 154,776 in 2000–01. It is speculated that the decreasing trend in the number of reference requests reflects increasing use of the Internet.

The MCFL sponsors a variety of special programs and outreach services. In 2001, the MCFL was involved in more than 300 adult programs reaching nearly 2,700 attendees. In addition, more than 28,000 participants attended 1,000 children's programs. Other services offered included a bookmobile program, a Books on Wheels program for homebound patrons, the Tender Loving Care service to convalescent homes, and the Marin Literacy program, to name a few (2001–2002 Marin County Grand Jury Report).

➢ Issues

Libraries need adequate facilities and staff.

a) Adequate library facilities and services are required to meet the needs of people of all ages in all parts of Marin.

b) It will continue to be a challenge for libraries to keep up with changing technologies and funding constraints.

c) In the coming years, a large percentage of librarians will retire, and there are a limited number of new librarians coming into the system. The high cost of living compared with the salaries of librarians may make it difficult to find committed and knowledgeable librarians to work in Marin.

d) Many of the Marin County branch libraries are not large enough to meet minimum standards. The library staff will need to evaluate space requirements and try to meet the needs of the branch libraries.

e) A report from the Grand Jury in 1997 focused on the poor condition of many Marin County public libraries.

A variety of services are needed for a diverse population.

a) As the population in Marin increases, library use will likely increase.

b) Libraries provide an opportunity for low income individuals to have access to digital information. Librarians can help people navigate the Internet and gain access to information.

c) If the demand by older people increases, the materials may have to be more age appropriate, with more large-print books and books on tape.

d) Outreach to the community will become more important for libraries. With the reduction in school libraries, children are not exposed to library services and will need to be educated about the availability of library resources.

e) Changing demographics provide challenges for libraries. There is a need to provide services to the elderly, to reach out to younger patrons, and to provide bilingual and literacy services.

f) Public libraries are a key institution for helping immigrants to become assimilated into the mainstream culture.

➢ Strategies

Provide needed library facilities.

a) Continue to seek additional revenue sources to fund library operations.

b) Upgrade library technology and increase communication capacity for computer access for each library. Ensure that more of the library resources are available in digital format. Evaluate space requirements for branch libraries, and develop a program to meet identified needs.

c) Find multiple uses for libraries to meet other community needs.

d) Install a reliable, fast computer network that electronically links all the libraries.

e) Improve transportation options, such as bike and pedestrian pathways, that link libraries to their communities.

Address the needs of a diverse population for library programs and services.

a) Periodically evaluate Marin's demographics in order to provide improved library services. Ensure that library services match the demand of the populations they serve.

b) Develop better ways to serve the library needs of the county's special populations, such as children, young adults, the elderly, the handicapped, and residents who are not native English speakers. Ensure that adequate literacy, bilingual services and bilingual technological services are available in all libraries.

c) Expand outreach efforts to the community.

➢ Sample indicators

a) Measure the number of library resources available in digital format (Marin County Free Library).

➢ Sample targets

a) Increase the number of library resources available in digital format by 20 percent by 2010 (Marin County Free Library).

10. Hospitals

➢ Issues

a) Marin County was identified in the Statewide Health Facilities and Services Plan (1985) as having a significant excess of acute care hospital beds.

b) Marin General is considering retrofitting two of three wings by 2008, or building a new hospital by 2013.

➢ Strategies

a) Given the aging population, it is recommended that any decrease in acute care hospital beds be carefully considered.

b) If Marin General decides to retrofit its two wings, it should coordinate with other area hospitals to prepare contingency plans for service.

11. Telecommunications

➢ Issue

a) High-speed computer access is critical to data network deployment for economic development.

➢ Strategy

a) Integrate the strategies in the Marin Telecommunications study into the policies of the Countywide Plan.

(For discussion of the digital divide issue related to telecommunications, see IV. The Economy, Equity, and Culture, C. Social Equity and Public Health, 4. Education.)

F. COMMUNITY DEVELOPMENT

➢ Background and key trends

The Countywide Plan incorporates sound environmental and planning principles that have guided Marin County for 30 years. The Plan designates the 606 square miles of land and water composing Marin County as an environmental unit consisting of regions called *corridors,* with specific geographical and environmental characteristics and natural boundaries formed by north- and south-running ridges. In the first Countywide Plan, adopted in 1973, and in subsequent updates, three environmental corridors were designated:

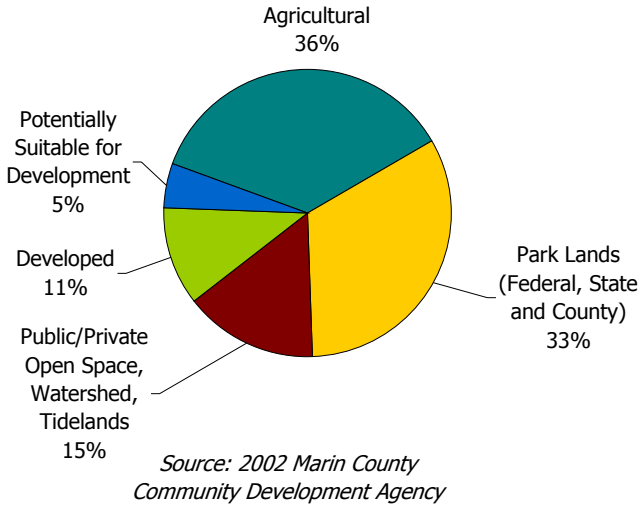
- The Coastal Recreation Corridor, adjacent to the Pacific Ocean, is designated for federal parklands, recreational uses, agriculture, and the preservation of existing small coastal communities.
- The Inland Rural Corridor in the central and northwestern part of the county is designated for agriculture and compatible uses, and for preservation of existing small communities.
- The City-Centered Corridor along Highway 101 in the eastern part of the county near San Francisco and San Pablo Bay is designated for urban development and for protection of environmental resources. This corridor is divided into six planning areas based on watersheds.

One modification proposed in this update of the Plan is the designation of a fourth environmental corridor encompassing the lands along the shoreline of San Francisco and San Pablo Bay. The designation as a Bayfront Corridor would provide heightened recognition of the unique environmental characteristics of this area and the need to protect its important resources. The area consists of marshes, tidelands, and diked lands that were once wetlands or part of the bay.

Resource areas are also designated in the Countywide Plan. They include stream and creekside areas, the Bayfront Conservation Zone, and the coastal zone, which is protected by a detailed plan for coastal conservation called the Local Coastal Plan.

More than three-fourths of Marin County's land is protected from development, and population growth is low. Only 11 percent of Marin County's land area has been developed. The majority of this land is within cities. Most of the 5 percent of land potentially available for development is also in cities. Nearly 85 percent of the county consists of parks, open space, watersheds, tidelands, and agricultural lands (Figure III-30).

Figure III-30
How Marin Lands Are Used



Source: 2002 Marin County Community Development Agency

Countywide population growth between 1990 and 2000 averaged ¾ percent per year. The population in cities grew from 165,997 to 178,554, while the population in unincorporated areas increased from 64,099 to 68,735. Countywide population was 230,096 in 1990 and 247,289 in 2000 (1990 and 2000 Census).

Countywide planning requires coordination with cities and regional agencies. The Countywide Plan is not created in a vacuum. Coordination is needed with agencies such as ABAG in regional planning efforts and the Regional Water Quality Control Board in developing policies that will result in clean water flowing from creeks into the bay and ocean. State and federal agencies like the California Coastal Commission and the National Park Service are also consulted.

Local agencies and various County departments participate in the planning process. The Local Agency Formation Commission (LAFCO) is an agency that plans for the provision of urban services, and the future service areas and boundaries of cities. Its policies and boundaries are incorporated into the Plan. A Countywide Planning Agency was created by a joint powers agreement among all the cities and towns and the County, with one of its functions being to review and comment on the Countywide Plan and the general plans of the cities and towns. It can play an important role in the update of the Plan.

Planning policies and zoning are used to carry out the goals of the Countywide Plan. Since many of the mapped boundaries and policies in the Countywide Plan were established 30 years ago, there may be reasons to review them carefully and consider revisions. A careful study of the relationship between land use designations in the Countywide Plan and zoning on specific parcels would indicate whether the intention of the Plan is being expressed in the zoning.

LAFCO is reviewing spheres of influence for cities and service agencies in the City-Centered Corridor. Any changes made to these boundaries will be considered in the course of the Countywide Plan update and will ultimately be incorporated into the Plan.

Community plans provide specific direction for communities in the unincorporated area of the county. Most unincorporated communities have a community plan, which provides specific direction for land use, transportation, community facilities, building design, and environmental issues. Some of these plans have been updated recently in a format that is consistent with the Countywide Plan.

1. Coordination within the County and with Regional Agencies

➢ Issues

Sound regional planning requires coordination and consistency among general plans of neighboring counties, cities and towns in Marin, federal and state management agencies, and the Countywide Plan.

a) Data and policies in various plans need to be consistent and compatible.

b) A broader view of planning to encompass public health, social services, and other quality of life issues is needed.

c) Land use planning needs to be coordinated with LAFCO and with agencies providing water and sewerage.

The Countywide Planning Agency was created to coordinate planning among the cities and the County, and can be used for a variety of planning functions.

a) With representation from all the cities and the County, the Countywide Planning Agency can address many planning issues of concern to all jurisdictions.

➢ Strategies

Coordinate with all relevant agencies in updating the Countywide Plan.

a) Coordinate with the National Park Service on land use planning for property adjacent to or within park boundaries.

b) Continue to work with the Local Agency Formation Commission on its special studies to determine changes in boundary areas.

c) Work with ABAG in the development of a regional plan.

d) During the periodic review of the Countywide Plan, also conduct a review of the general plans of participating jurisdictions to coordinate growth projects, traffic level of service, housing policies, and environmental quality policies and programs.

e) Have the County continue to take an active role in participating with other organizations' planning efforts (for example, health agencies, social agencies, and transit) to encourage the understanding of the relationship between land use planning and quality of life.

f) Have the County analyze the cumulative impacts of development applications on water availability.

Utilize the Countywide Planning Agency for a variety of the following planning functions.

a) Take a greater role in the coordination and implementation of land use and transportation planning efforts.

b) Conduct a biennial review of the general plans of participating jurisdictions to coordinate growth projections, traffic level of service standards and mitigations, housing policies and programs, environmental quality policies and programs, and policies and programs dealing with provision of community facilities and services.

c) Work closely with the Planning and Public Works departments regarding smart infill standards and designs.

d) Cooperatively implement capital improvements, transportation services, or modifications to land use designations to maintain the levels of service with the Planning and Public Works departments.

e) Develop a program to coordinate the pace of development in all jurisdictions with the provision of transportation system capacity.

f) Evaluate expanding the functions of the Countywide Planning Agency to include such activities as waste management planning and airport land use planning. The design and implementation of a countywide revenue-sharing program, review of major development projects, and the relationship of jobs and affordable housing should also be considered.

g) Analyze the impacts of development applications on public services and facilities by requiring a fiscal-impact analysis that examines the costs and benefits of the proposed development. The analysis should include possible financing methods if it shows that new or expanded facilities are needed to serve the proposed development.

h) Have the County and the cities, through the Countywide Planning Agency, report on a regular basis to the appropriate agencies on development activities and growth projections, and should coordinate with water and sanitary districts in the provision of water and sanitary facilities.

i) Have the County and the cities contribute semiannually to the County land use and transportation database to monitor, track, and map Marin County growth.

j) Have the districts provide the Countywide Planning Agency with regular reports on facility development and capacity of existing facilities.

➢ Sample indicators

a) Coordination by the County with all relevant agencies.

b) Increased functions for the Countywide Planning Agency.

➢ Sample targets

a) The County will contact 100 percent of the affected local, state, and federal agencies during the 2004 Countywide Plan update.

b) The Countywide Planning Agency will add at least two new planning review functions between 2003 and 2010.

2. Planning and Zoning Policies

➢ Issues

Planning policies and zoning may need revision.

a) Zoning designations may not be consistent with Countywide Plan land use designations.

b) There are many categories of zoning, which makes it difficult to interpret and understand the County Development Code.

Transfer of development rights may offer opportunities for environmental protection and smart infill.

a) Analysis of appropriate locations for transfer would provide information about the viability of such a program.

Effective policies and implementation can ensure protection of environmental resource areas.

a) The Bayfront Conservation Zone is one of the sensitive resource areas that need protection.

Countywide Plan and zoning policies and implementation can help provide protection from environmental hazards.

a) Zoning and procedures can provide protection from flood hazards.

b) The County Community Development Agency needs to continue to consult with fire officials to provide adequate protection from fire hazards.

➢ Strategies

Review and consider revising planning policies if necessary.

a) Develop planning relationships between planning corridors, watershed boundaries, and planning areas.

b) Reassess the seven planning-area boundaries for boundary appropriateness.

c) Conduct a review of the zoning ordinance to determine whether zoning categories and regulations clearly reflect the intention of the land use designations of the Community Development Element of the Countywide Plan, express the relationship between land use and population density, and outline appropriate uses and procedures.

d) During the development review process, encourage telecommuting in proposed commercial office projects and in residential areas.

Review and revise zoning designations and the zoning map for consistency with the Countywide Plan and simplification of designations.

a) Revise zoning designations where proposed land use is different from existing zoning in the unincorporated portions of the county. Zoning shall be consistent with Countywide Plan land use in unincorporated areas.

b) Revise the zoning ordinance text to explain commercial uses and the application of floor area ratios (FARs).

c) Revise zoning designations to simplify designations.

d) Review zoning designations where proposed land use is different from existing zoning in the unincorporated portions of the county.

e) Modify the Coastal Plan to be consistent with current issues and trends in the coastal area.

Use Transfer of Development Rights to protect environmental and agricultural resources and encourage moderate density mixed-use development in the City-Centered Corridor.

a) Transfer development rights (TDRs) from West Marin to the City-Centered Corridor around transit nodes, and increase densities around the nodes.

b) Have the County and the cities consider a program that would enable development rights on bay-front, ridge, and upland greenbelt lands to be transferred to existing communities designated as high intensity centers.

Provide for protection of environmental resource areas in the Bayfront Conservation Zone.

a) Minimize the development impact of earth disturbance, erosion, and water pollution in the Bayfront Conservation Zone.

b) Encourage use of shoreline areas with sound ecological and safety considerations.

c) Encourage public access easements to facilitate public use and enjoyment of the bay-front lands, along with protection of wildlife habitat.

d) Encourage recreational uses such as fishing, boating, hunting, picnicking, hiking, nature study, and wildlife preserves as an appropriate means of providing public education on the value of shoreline preservation.

e) Evaluate the survival of built elements, such as overhead utilities, that detract from the shoreline and marsh landscape.

Provide for protection from environmental hazards.

a) Discourage development in areas that have high natural-resource value or that pose a significant hazard to life or property.

b) Continue to implement the regulations of Marin County Code Title 23.09 (Floodplain Management), which establishes Coastal High Hazard Zones with special location and construction standards for all land uses subject to inundation by a tsunami.

c) Coordinate between the Marin County Community Development Agency and the County Fire Marshal in mapping fire hazard areas subject to wildland fire risk. Make these maps available to planners and the public for use in reviewing projects and applying building standards that reduce the risk of fire.

d) Include recommendations made by fire authorities as conditions of approval for discretionary planning permits when the Community Development Agency staff determines that these recommendations are necessary for safety reasons.

e) Specify requirements for referrals of discretionary planning permits to County fire officials in the County Code.

f) Allow development in areas identified as having extreme fire hazard only where adequate water for fire suppression is or can be made available and where dual emergency evacuation is possible.

g) Have the Community Development Agency and fire officials work together to evaluate the adequacy of standards for water-supply and road access to subdivisions.

h) Amend the Marin County Code to establish uniform standards for clearance from structures, landscaping, and fire resistant building materials (particularly pole construction) for all new construction in fire hazard areas. Removal of exotic flammable vegetation should be encouraged.

i) Periodically conduct review of the Marin County Code by the Community Development Agency, Department of Public Works, and fire officials to ensure conformance with the latest Uniform Codes.

j) Have the Community Development Agency work with fire officials to bring the Marin County Code into conformance with State Responsibility Area construction and fire safety standards.

➢ Sample indicators

a) Implementation of Countywide Plan programs.

➢ Sample targets

a) Development Code and zoning map revisions will be adopted concurrently or within one year of the Countywide Plan.

b) Fifty percent of the programs identified in the Countywide Plan will be implemented within five years after adoption and 90 percent within 10 years.

3. Planning for Unincorporated Communities

➢ Issues

A community plan is a miniature Countywide Plan for each unincorporated community.

a) Community plans need to be regularly updated to remain relevant and consistent with the Countywide Plan.

b) Community plans are most useful and easy to use if they follow a consistent format.

➢ Strategies

Periodically revise the community plans according to a schedule and with current information consistent with the Countywide Plan.

a) Prepare a schedule for revision of community plans.

b) Address community plans in defined general plan topics and issues important to a particular community.

c) Modify the community plans to correspond to the Countywide Plan elements.

d) Coordinate between Marin County and the National Park Service during review of development applications for property adjacent to or within park boundaries.

➢ Sample indicators

a) List of community plans with most recent date of adoption and schedule for revision, with the oldest plans scheduled to be revised first (Marin County Community Development Agency).

➢ Sample targets

a) All community plans will be reviewed and updated as needed at least every 10 years.

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