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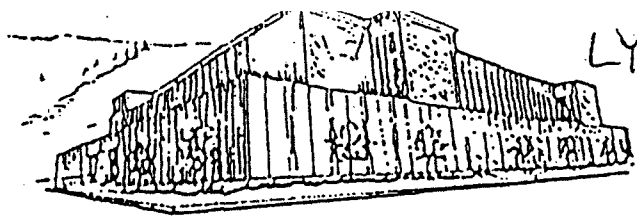
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BIO-RATIONAL PLANNING:
AN ECOLOGICAL APPROACH TO LAND USE PLANNING
IN SAN DIEGO COUNTY, CALIFORNIA

by

Gillian N. Lyons

B.A. Oberlin College, 1990

presented in partial fulfillment of the requirements

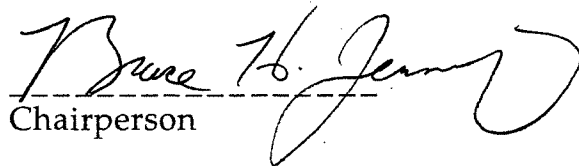
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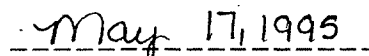
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Environmental Studies

Bio-Rational Planning: An Ecological Approach to Land Use Planning in San Diego County, California (122 pp.)

Director: Bruce Jennings

San Diego County, in the southwestern corner of California, is home to a wide array of habitats, plants, and wildlife. It is also the site of high quality open space and agricultural resources. However, during the past several decades, each of these resources has been compromised or degraded due to suburban-style, low-density growth. This variety of growth is now beginning to dominate the San Diego region. Low-density development, also called urban sprawl, tends to be resource-intensive; it consumes more land and water than denser, more compact forms of development. The San Diego region is particularly ill-suited to low-density sprawl: The county's native habitats are growing increasingly more threatened, and the county contains a very small quantity of reliable local water resources. Yet the County General Plan, the planning document responsible for directing San Diego's future growth, indicates that 68% of all land and 88% of "vacant developable" land in San Diego County is zoned for low-density single family housing. That the bulk of the region's privately-owned land is slated for this brand of development will further jeopardize the diverse natural communities of San Diego's coastal plains, mountains, and deserts. In addition to its preponderance of low-density residential zoning, the General Plan contains weak protective measures for both farmland and open spaces.

In this professional paper, I critique the San Diego County General Plan for its irrational approach to land use planning and natural resource protection. As a primary example of this irrationality, I cite the water-intensive development that has been and continues to be encouraged by the General Plan in the context of a semi-arid climate. Also indicative of the General Plan's shortcomings is the fact that San Diego contains more sensitive species than any other mainland U.S. county, despite formally-stated environmental protection goals. I conclude that the General Plan fails to plan for the long-term success and integrity of natural communities, and that instead, it plans largely for short-term economic gain. By way of solution, I recommend that the General Plan be re-written to incorporate biological and ecological concerns and needs. I call this approach "bio-rational planning." Bio-rational planning's objectives include maintaining and preserving the ecological integrity of natural lands for both wildlife habitat and for the ecological services (i.e., groundwater recharge, carbon dioxide uptake, flood control) these lands provide; and reducing San Diego County's heavy reliance on imported water. Bio-rational planning should pursue these goals through redeveloping urban areas, infilling presently-developed lands, discouraging low-density development, mandating water conservation measures, and adopting strong habitat protection plans.

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CHAPTER ONE: INTRODUCTION

Perhaps the most alarming [aspect of unregulated growth] is the fear that without a concerted effort, replacing [San Diego County's high quality of life] will be a senseless patchwork of endless residential suburbs stitched together by freeways and neon commercial strips typical of Los Angeles.¹

The above quote conveys a concern, or more accurately, a fear. Its authors are clearly worried about the future of San Diego County: They don't want to see their community converted to disjointed subdivisions reminiscent of the more densely populated counties to the north; they want to avoid the consequences of rapid and poorly-planned growth. In fact, this quote appears in the introduction of a seventeen-year-old document entitled "Regional Growth Management Plan," a collection of policy recommendations aimed at regulating San Diego's growth and mitigating the impacts that growth will have upon human and natural communities. As it turns out, the document's authors were visionary: Today, metropolitan San Diego is characterized by Los Angeles-style suburbs, connected to one another by well-maintained and far-reaching freeways; commercial strips feature flavorless franchises and are punctuated by regularly-spaced billboards towering above berms of Kentucky bluegrass. In short, despite forward-thinking plans from the 1970s, San Diego has grown rapidly and, some would argue, thoughtlessly.

The authors of the Regional Growth Management Plan penned their recommendations at a critical time in the history of San Diego County's physical development. During the late 1970s, San Diego stood on the threshold of a population and housing explosion; the early and mid-1980s saw upwards of 80,000 people moving to the San Diego region annually, while real estate

¹County of San Diego, Regional Growth Management Plan, June 1978, 6.

developers built as many as 35,000 housing units each year until 1988.²

Anticipating this growth, the Regional Growth Management Plan made two particularly forward-thinking suggestions: (1) Develop residential areas at higher densities in order to ensure more affordable housing, to conserve land and water, and to provide for more efficient use of facilities such as roads, schools, and sewers;³ and (2) implement land use and zoning designations that discourage development.⁴ Neither of these recommendations were implemented by the County of San Diego. Today, the region is home to 987,000 housing units, 58% of which are single-family homes.⁵ This 58 percent, which amounts to about 566,700 houses, comprises the foundation of the “senseless patchwork” described by the Regional Growth Management Plan. Another name for this senseless patchwork is suburban sprawl.

Suburban sprawl is an almost-natural by-product of the American Dream. Since World War II, home ownership has ranked high on the list of middle-class American goals. The idea of “home” engendered by the American Dream usually involves two or more bedrooms, a large kitchen, a two-car garage, and a yard, front and back. Indeed, this idea takes up quite a bit of space. Yet the concept of the single-family home has not changed much in recent decades, even though sheer numbers of Americans has risen dramatically. The real estate development industry has kept pace with these rising numbers by simply building more homes – a process which leads to the phenomenon of suburban sprawl. This development pattern, which usually entails building on the edges of existing communities, generates a number of consequences, including: increased distance of residential areas from commercial and employment centers

²SANDAG, “January 1, 1994 Population and Housing Estimates,” in *INFO* (September-October 1994), 4-9.

³County of San Diego, Regional Growth Management Plan, 23.

⁴*Ibid.*, 27.

⁵SANDAG, “January 1, 1994 Population and Housing Estimates,” 7.

and thus an increased reliance on automobiles; isolation of older, urban communities; and decentralization of employment centers.⁶ But the consequences with which this paper is primarily concerned are ecological in nature. Suburban development, particularly low-density development, is a resource-intensive venture: It consumes considerably more land and water than denser, more compact forms of development.

In Southern California, forty years of suburban sprawl has contributed significantly to the demise, and in some cases, the elimination, of each of the region's major habitat types.⁷ Consequently, rates of species decline and extinction are now reaching an all-time high.⁸ Yet the habitat destruction associated with sprawl is not limited to the sites of subdivisions. Because Southern California is technically a desert, large quantities of water must be imported from Northern California and the Colorado River to satisfy the domestic and industrial needs of 17 million people. The processes by which this water is dammed, diverted, and stored are profoundly damaging, and in some cases, involve the drowning or parching of entire ecosystems. Thus, when cataloging the ecological-damage wrought by Southern Californian suburban sprawl, the canyons of the Southwest and the valleys of California's north coast must be included. San Diego County, while not nearly as infamous as the 7,000-square-mile Los Angeles metropolitan area, contributes "generously" to both forms of degradation – that caused directly by land conversion and that caused by imported water consumption. In fact, as a result of development-induced habitat loss, San Diego County is home to more sensitive (rare, threatened, or

⁶Bank of America *et al.*, "Beyond Sprawl: New Patterns of Growth to Fit the New California," January 1995, 4.

⁷*Ibid.*, 8; Tim Palmer, "A Great Number of People," in California's Threatened Environment, ed. Tim Palmer (Washington, DC: Island Press, 1993), 25.

⁸Dan Silver, "Conservation Planning in Southern California: A Realistic View" (photocopy).

endangered) species than any other county in the mainland United States.⁹ San Diego County also imports a higher percentage of water than any other political entity in the United States.¹⁰ Should San Diego's "senseless patchwork" of residential and commercial development expand much further, the county's ecological condition will undoubtedly worsen.

Biologists and ecologists have identified suburban low-density development as the culprit responsible for San Diego's habitat loss and its ninety-percent reliance upon imported water. The question remains, who is responsible for suburban low-density development?¹¹ Some may look to consumers – those who apparently create the demand for the housing which usurps wildlife habitat, open space, and prime farmland. However, what appears to be consumer demand may only be a response to a severely limited product selection. Traditionally, developers in the San Diego region have provided home buyers with few options: Most "master planned communities" or subdivisions adhere to similar formats, whereby consumers are offered little in the way of diversity beyond variations on a standard floor plan or their choice of exterior finish. That people have faithfully purchased these homes may be a function of market control exerted by the real estate development industry. Perhaps, then, developers are to blame for San Diego's deteriorating ecological integrity. Clearly, this is the group responsible for actually constructing the homes that usurp wildlife habitat, open space, and farmland. But while developers are certainly a prime motivating force behind the conversion of

⁹The City of San Diego, Public Review Draft: Multiple Species Conservation Program Plan Executive Summary, March 1995, 2.

¹⁰Eric Gibson, Assistant Groundwater Engineer with County of San Diego Department of Planning and Land Use, pers. comm., November 21, 1994.

¹¹Lois Gibbs, Executive Director of Citizens Clearinghouse on Hazardous Waste, in a keynote address delivered at the Second Annual Finding Common Ground Conference in Missoula, MT (May 5, 1995), reminded her audience that grassroots campaigns are much more effective when organizers are able to pinpoint the source of the problem against which they are struggling.

natural communities to residential suburbs, they do not write the laws and regulations that govern their industry.¹² One San Diego columnist summarizes the role of developers in the sprawl dynamic this way:

People like to blame developers for trying to turn San Diego into another Los Angeles. But developers only do what comes naturally to them. Fish swim, birds fly, developers develop. Developers only develop as much as they're allowed to. It's up to elected local politicians – city council members and county supervisors – to create a vision for their community, then guide development to fulfill that vision.¹³

It would appear, then, that the source of San Diego's sprawl might be a development-minded leadership. However, city council members and county supervisors have finite terms; the composition of local councils and commissions will change from decade to decade, and will supposedly reflect the needs and desires of county residents. Presently, the County Board of Supervisors suffers from a pro-development reputation, and has authorized zoning that promotes low-density development in rural areas while undermining open space preservation objectives.¹⁴ Yet this has not always been the case, nor, hopefully, will it be. As local and regional leadership positions change hands, San Diego County's relationship with developers will presumably shift, making any sort of cohesive community vision difficult to create or fulfill. While county supervisors play a crucial part in San Diego's acceptance of suburban sprawl, their authority stems from the documents they are paid to uphold: The County General Plan and the County Zoning Ordinance. In particular, the County General Plan is responsible for providing San Diego with a

¹²In truth, the development community in San Diego and throughout coastal Southern California is politically powerful and influential. While developers do not actually pen laws and regulations, they certainly affect the rules which govern them.

¹³Jim Gogek, "County indifferent to preserving rural land," in San Diego Union-Tribune, March 21, 1994, A-2.

¹⁴*Ibid.*; Duncan McFetridge, Executive Director of Save Our Forests and Ranchlands, pers. comm., November 22, 1994; Tricia Gerrodette, former Land Use Chair of Sierra Club, San Diego Chapter, pers. comm., November 23, 1994; Ruth Potter, former planner with San Diego Association of Governments, pers. comm., November 21, 1994.

vision of its future; like all general plans, San Diego's must "ensure that a long-range perspective is guiding incremental land use decisions."¹⁵ Judging from the incremental land use decisions made by county supervisors and professional planners since the adoption of the San Diego County General Plan in the 1970s, the long-range perspective guiding San Diego's growth appears to be a pro-development one. A closer examination of the General Plan text reveals that this is indeed the case. While consumers, developers, and politicians certainly perpetuate an acceptance of sprawl, the County General Plan may actually lie at the root of San Diego's ecological decline.

Clearly, this pro-development perspective benefits many people. Several hundreds of thousands of county residents are no doubt pleased with their spacious homes and manicured lawns. Many developers have grown quite wealthy thanks to subdivision-friendly zoning condoned by the General Plan. And county leaders probably believe that encouragement of development will ultimately benefit their region's economy and its people; after all, the most direct means of increasing the county's revenues is to attract still more people and businesses to the San Diego area. Yet San Diego's northern neighbors exist as proof that this perspective does not work. The greater Los Angeles area is universally held up as an example of urban (non-)planning gone awry. Los Angeles, in all its sprawling, smoggy glory, is precisely what San Diegans do not want to become. (A local San Diego weekly, The Reader, calls its column on Los Angeles "Hell.A.") Meanwhile, Orange County dutifully spent the past two decades paving over every acre of its farmland, replacing fields of lima beans with rows of tract homes,¹⁶ and promptly went bankrupt. If San Diego truly wishes to avoid following in the footsteps of these suburban sprawl pioneers, the

¹⁵Stuart Meck and Edith M. Netter, A Planner's Guide to Land Use Law (Washington, DC: Planners' Press/American Planning Association, 1983), 9.

¹⁶Bank of America, *et al.*, "Beyond Sprawl," 7.

county's long-range perspective must change. Further, if San Diego truly intends to curb its rate of ecological decline, the county's approach to development must change. These changes will need to happen at the most fundamental level of land use planning policy: the General Plan.

San Diego's County General Plan, as it currently reads, is designed to facilitate growth. It is also designed to protect and conserve natural resources. A few centuries of American growth has illustrated that these two goals are rarely compatible: Usually, the former wins out. That San Diego County hosts as many as 300 sensitive species is an indication that this region has not yet broken with tradition. The General Plan, while certainly paying homage to the significance of natural communities, fails to adequately protect them. This failure is symptomatic of a value system that considers the needs of humans before the needs of land, water, air, plants, or animals. While this value system should come as no surprise to late 20th century Americans – it is, after all, the foundation upon which this nation rests – it might strike some as preposterous, particularly now that interdependencies between human and non-human communities are an accepted truth. Indeed, San Diego's present approach to land use planning is irrational; it effectively ignores these interdependencies while also ignoring the examples provided by Los Angeles and Orange counties.

Perhaps the most glaring instance of this irrationality is connected to water availability. San Diego County receives, on average, ten inches of precipitation annually. Its groundwater resources are relatively scarce due to the region's geology, and natural surface water is generally unreliable. Yet 2.6 million people live in this semi-arid region, parts of which overlap the Sonoran Desert. Consequently, San Diego imports 90% of its water from the Metropolitan Water District of Southern California. This immense reliance upon imported water should constitute a county-wide warning signal, a red flag indicating that San

Diego has overstepped its resource-related bounds. While it would be impossible at this point for the San Diego region to subsist on local water alone, it would *not* be impossible to limit development and further urbanization in the interest of stabilizing or reducing the county's dependence on the Colorado River and other distant sources. However, the County General Plan contains no language to this effect. In fact, the issue of imported water receives little attention at all throughout the document. This neglect may be related to the division of planning labor: the County of San Diego, through its Department of Planning and Land Use, takes responsibility for planning the physical growth of the county; the San Diego County Water Authority, which, despite its name, is unrelated to the County of San Diego, is responsible for procuring reliable and plentiful water resources. Thus, San Diego's water and land use planning exist separately from one another, even though they are, in reality, entirely intertwined endeavors. This discrepancy may explain why the General Plan designates 68% of all privately-owned acreage in San Diego County as low-density single family residential, even though the County Water Authority recognizes this designation as the most water-intensive type of residential zoning.¹⁷

While San Diego's water scarcity stands out as a strong example of the county's irrational approach to land use planning, other instances abound. Farmland, a significant source of open space and revenue for the county, is threatened by a new zoning ordinance that sets the minimum parcel size of agricultural preserves at a somewhat paltry eight acres. The county's endangered species situation has reached crisis levels because the General Plan has failed for

¹⁷SANDAG, "Land Use in the San Diego Region," 9; San Diego County Water Authority, Water Resources Plan, November 1993, 12.

years to prevent habitat loss. Of the 800,000 "vacant developable"¹⁸ acres remaining in San Diego County in 1993, the General Plan indicates that 704,000 are slated for low-density single family housing.¹⁹ In order to prevent further losses within San Diego's natural communities, the General Plan must be made rational.

This paper puts forth a suggestion that the General Plan be re-written to incorporate an ecological perspective, one that informs all land use decisions at the county level. This new and improved Plan should shift the zoning emphasis away from low-density sprawl, and towards more compact, intelligently-designed mixed-use communities, by resurrecting the two discarded recommendations from the Regional Growth Management Plan: (1) Develop residential areas at higher densities in order to ensure more affordable housing, to conserve land and water, and to provide for more efficient use of facilities such as roads, schools, and sewers; and (2) implement land use and zoning designations that discourage development. Simultaneously, it should provide San Diego's natural communities with the protection to which they are fully entitled; the re-worked Plan should place ecological considerations on par with anthropocentric ones, and require that land use planning carefully examine the needs of *all* county residents.

Importantly, elevating the status of ecological concerns within San Diego's planning process will benefit humans as well as non-humans. The suburban areas that have cropped up in the wake of San Diego's sprawl are mainly accessible to residents who can afford to purchase a single-family home, at least one car, and the gasoline necessary for daily commutes to places of business. These same suburbs have also contributed to the overall decline of city centers; as

¹⁸"Vacant developable" acreage is land that can be developed, presumably without posing a significant threat to the public welfare or the environment.

¹⁹SANDAG, "Land Use in the San Diego Region," 9.

middle- and upper-class people leave cities behind in search of home-ownership, they may disrupt social stability and increase the economic disparity between older communities and newer suburbs. Similarly, as employment hubs relocate to the suburbs, lower-income people living in urban areas may discover that nearby jobs are more difficult to find.²⁰ In short, sprawl is a socially unjust development pattern: It encourages social and economic stratification, through the abandonment of city centers and the physical and cultural inaccessibility of suburbs. A planning tool that strongly discourages low-density sprawl in the interest of protecting natural communities will also serve the needs of humans, particularly those that have traditionally had no voice in the land-use planning dialogue, by emphasizing compact, resource-efficient, high-quality, affordable housing. To the extent that this kind of planning approach can work towards equitable and compassionate treatment of humans, animals, plants, land, and water, I have chosen to call it *bio-rational planning*.

Just as the Regional Growth Management Plan was written at a critical juncture in San Diego's growth continuum, so is this set of recommendations. San Diego County is now half-way through a decade that will see the region grow by 24 percent.²¹ In 2015, San Diego is expected to have 3.8 million residents, an increase of more than one million people over the current population.²² These new San Diegans will take up residence in 490,000 additional homes, many of which may be constructed in presently rural areas.²³ In order to accommodate this increase in people and housing, the County General Plan will need to be revised, as today's land use designations cannot absorb the predicted numbers. This revision will either increase the allowable densities on lands that have

²⁰Bank of America, *et al.*, "Beyond Sprawl: New Patterns of Growth to Fit the New California," January 1995, 4.

²¹Tim Palmer, "A Great Number of People," 24.

²²SANDAG, Series 8 Regional Growth Forecast 1990-2015, March 1994 (photocopy).

²³*Ibid.*

already been developed or push new development onto presently undeveloped lands; a bio-rational general plan could ensure that new housing construction remain focused on lands that have already been “committed” to residential uses. The county is also expected to approve a large-scale Multiple Species Conservation Program, designed to protect the region's plethora of sensitive plants and animals. The MSCP would cost several million dollars, and operate outside the parameters of the county's land use planning efforts. However, if the General Plan provided adequate protection for species and their habitats, as it is supposed to do, the MSCP would be unnecessary. Rather than pursue stop-gap measures that will not challenge the cause of species decline – suburban sprawl – the County of San Diego should simply require that the General Plan perform its appointed duties. A bio-rational General Plan would render the MSCP obsolete, as it would prioritize wildlife habitat protection.

Indeed, the mid-1990s may offer San Diego its last chance to avoid full-scale “Los Angelization.” Despite the ecological degradation already brought on by suburbia, especially in the western third of the county, San Diego contains vast reaches of rural land and intact wildlife habitat. A bio-rational planning tool would be committed to preserving these necessities by altering the “long-range perspective” that motivates land use planning in this part of Southern California. This new perspective must incorporate a sense of limits, a notion that human communities have already consumed too much. Donella Meadows writes of this kind of vision in The Neighborhood Works:

In a land where freedom of movement is a right, and where growth is the supposed solution to all problems, the question of how to develop without growing, to differentiate, to innovate, to get better without getting bigger has never been taken seriously. But it is the ultimate question before all of us....The problem of the 21st century is how to live good and just lives within limits, in harmony with the earth and each other. Great cities can rise out of cruelty, deviousness, and a refusal to be bounded. Livable cities can only be sustained out

of humility, compassion, and acceptance of the concept of "enough."²⁴

In San Diego County, the concept of "enough" has yet to be effectively explored, but it is not too late to begin the exploration. The following chapters initiate this exploration by discussing the need for and place of a bio-rational focus within the county's land use planning paradigm. Chapter Two describes the relationship between imported water and San Diego's expansive growth, and the impacts of this growth upon wildlife habitat/land resources, water resources, and agriculture. Chapters Three and Four discuss and critique the planning tools regulating land use and water use, respectively, in San Diego County. Chapter Five expands on the critique of the previous two chapters by proposing a bio-rational alternative to the planning status quo. Finally, Chapter Six offers a range of recommendations that might be implemented in the effort to rationalize San Diego's land use planning policy.

²⁴Donella Meadows, The Neighborhood Works, reprinted in The Utne Reader (November-December 1994), 137-138.

CHAPTER TWO: THE FAR-REACHING IMPACTS OF IMPORTED WATER

To know your policy, you must know your purpose; and to get your purpose, you have to know your history.¹

The restricting effect of water supply on growth of every kind, when water was obtained exclusively from local sources, has been overcome.²

In terms of population distribution, San Diego County is a microcosm of California: Eighty-four percent of the county's 2.6 million residents live within a 30-mile-wide band along the Pacific coast; similarly, 80% of the state's 32 million residents live inside a 30-mile-wide belt of coastal "seismic real estate."³ Human preferences shape this distribution: People tend to congregate near large bodies of water, especially oceans; people seem to prefer a mild, maritime climate to the more extreme temperatures of the mountains or the desert; many people need or want to live near cities, where employment and cultural amenities can be found more readily than in rural areas; and people are generally comforted by the knowledge that, provided they pay their bills on time, water will always flow from their faucets, shower heads, and garden hoses.

The rural, unincorporated, eastern two-thirds of San Diego County cannot provide all of the above-listed features; however, it can and increasingly does provide residents with other desirable standard-of-living factors, such as low population densities, plentiful open space, clean air, and insulation from urban problems. Essentially, both the urbanized and unincorporated portions of the county have much to offer Southern Californians. Consequently, both areas have experienced high rates of growth over the past few decades. This growth,

¹Mark Sagoff, The Economy of the Earth (Cambridge, UK: Cambridge University Press, 1988), 144.

²Western Management Consultants, Inc., "Water and San Diego County Growth," a study for the San Diego County Water Authority, 1966.

³Tim Palmer, California's Threatened Environment (Washington, D.C: Island Press, 1993), 5.

which is predicted to continue into the next century, although at lower rates than those seen in the 1970s and '80s,⁴ will have differing impacts upon the county's urban and rural regions due to these regions' distinct characteristics. Although it is difficult to predict the exact nature of these impacts, chances are good that sustained and low-density growth, of the variety that has been encouraged by the county in recent years, will adversely affect the very qualities that people seem to find so attractive about San Diego today. Furthermore, this brand of growth cannot avoid taking its toll in the arenas of water consumption and land conversion.

Water and land, along with the ecological processes that link these two resources, comprise the true infrastructure of all communities, including human ones. Many people associate the term "infrastructure" with streets, sewers, and phone lines. Yet the physical elements upon which all communities fundamentally depend are natural, such as land and water. Alarming, though, these are among the first casualties of urban and suburban development. In San Diego, like many other places that have grown rapidly, water consumption and land conversion have both increased dramatically to the detriment of regional and distant natural systems. As urban and suburban development consumes, degrades, or eliminates these resources and their associated communities, infrastructure may start to crumble. San Diego's natural infrastructure, while partly intact, is now showing signs of decay. Failure to recognize and act upon these signs is the planning equivalent of shooting oneself in the foot: It simply makes no long-term sense. The sections below catalog the physical changes that have taken place in San Diego since World War II. This review of trends, numbers, and predictions offers a context for understanding the maldevelopment of San Diego, and for considering positive visions of its future.

⁴SANDAG, "A Look at San Diego's Future," in INFO (January-February 1994), 4.

An Overview of San Diego's Growth Dynamics: The Recent Past

As is the case with the rest of Southern California, the story of San Diego's development didn't start to get really interesting until imported water entered the picture. Prior to World War II, San Diego was, relatively speaking, a sleepy region; as of 1940, the entire county boasted just under 290,000 residents.⁵ Once the war got underway, however, the city of San Diego and its environs became a hub of military activity – its coastal locale made it a highly convenient base for the United States' endeavors in the South Pacific theater of war. All of this ship-building and soldier-training created a rapidly expanding economy which in turn attracted plenty of newcomers to the area.⁶ As the population approached the half-million mark, city planners examined the annual precipitation records and considered the ubiquitous chaparral; they realized that sustained growth of this magnitude would only be possible in the presence of more water.

Luckily for San Diego, Los Angeles arrived at this same conclusion 40 or so years earlier, and had already gone about the somewhat messy and unjust process of acquiring water by any means necessary.⁷ The Metropolitan Water District (MWD) of Los Angeles was well-established and well-supplied by the time San Diego annexed to it in 1946; in late 1947, San Diego's first imported water flowed through the recently chartered County Water Authority's pipelines.⁸ Thirteen years later, in 1960, the region's population exceeded one million people;⁹ between 1965 and 1990, San Diego's annual growth rate was twice that of California's and four times the nation's.¹⁰ Table 2.1 shows the increase in San Diego's population that took place between 1970 and 1994 in the

⁵SANDAG, Historical and Projected Population by Jurisdiction, July 1988 (photocopy).

⁶SANDAG, "A Look at San Diego's Future," 2.

⁷See Marc Reisner, *Cadillac Desert* (New York: Viking Penguin, Inc., 1986).

⁸San Diego CWA, "Water for San Diego County," Fact Sheet 1 (photocopy).

⁹SANDAG, Historical and Projected Population by Jurisdiction 1900-2010, July 1988 (photocopy).

¹⁰SANDAG, "A Look at San Diego's Future," 4.

incorporated and unincorporated areas of the county; in that 24-year time span, both parts of the county saw their human populations virtually double.

<u>POPULATION</u>	<u>1970</u>	<u>1994</u>
Incorporated:	1,065,229	2,251,985
Unincorporated:	292,625	436,002
Total:	1,357,854	2,687,987

Table 2.1: Population Changes Over a 24-Year Period in San Diego County.¹¹

The population growth of the past several decades was accompanied by the construction and completion of five large-diameter water pipelines. These pipelines are routed through two aqueducts, known as the First and Second San Diego Aqueducts, that run from MWD's facilities in Los Angeles through Riverside County into San Diego County.¹² Today, the five pipelines transport approximately 400,000 acre-feet (an acre-foot is the water needed to cover an acre of land with one foot of water, or about 326,000 gallons) of water per year, most of which originates in the Colorado River, to a region that usually receives about ten inches of rain per year. These pipelines are the key to San Diego's modern identity; without them, and the imported water cascading down their lengths, San Diego might still resemble its pre-World War II predecessor.

The population growth of the past 50 years was accompanied by another type of growth: Home-building. Understandably, as San Diego's human population sky-rocketed, so did the number of houses and apartment complexes built throughout the region. Housing construction peaked in 1987, when 36,171 units were completed; all but 4,800 were erected within the urbanized, western part of the county, where they would be supplied with imported water.¹³ Since

¹¹SANDAG, Historical and Projected Population by Jurisdiction 1900-2010, July 1988; SANDAG, "January 1, 1994 Population and Housing Estimates," in INFO (September-October 1994), 12.

¹²San Diego CWA, FACT Sheet, 1994-1995, 1.

¹³SANDAG, "January 1, 1994 Population and Housing Estimates," 8.

1987, the building industry has experienced a tapering off, due in large part to slower rates of population growth in recent years. The annual population growth rate for 1987 to 1990 was 3.6% countywide, but it dropped to 2.0% during the period between 1990 and 1994.¹⁴ Similarly, the average annual change in total housing units for the years 1987 through 1990 was 3.2%; from 1990 to 1994, the average annual change hovered just above one percent.¹⁵ Analysts attribute this slowing down of housing construction to the region's economic slump. Because San Diego is heavily dependent upon military industries, recent downsizing and restructuring efforts within defense-related companies has had a dramatic impact upon the local economy and rates of employment.¹⁶

Despite this tapering off, housing construction rates are still in the black. Between 1987 and 1994, 133,039 housing units were added to the San Diego landscape, for a 1994 total of 986,846.¹⁷ The overwhelming majority (566,672) of these units falls under the category of single family; there are over 200,000 more single family homes than multi-family homes, which is the next-largest category of housing type. This is another development pattern that the San Diego region shares with the rest of California: Even in urbanized areas, developers prefer to build single family dwelling units. It is not difficult to see why such units might be more popular, and therefore lucrative, than multi-family units. A detached, free-standing structure offers people the experience of being true home-owners; indeed, property ownership is an integral part of the American Dream, wherein the legal definition of "property" comes to life: "the unrestricted and exclusive

¹⁴Ibid., 6.

¹⁵Ibid., 8.

¹⁶SANDAG, "A Look at San Diego's Future," 4-5.

¹⁷SANDAG, "January 1, 1994 Population and Housing Estimates," 8.

right to a thing; the right to dispose of a thing in every legal way, to possess it, to use it, and to exclude everyone else from interfering with it."¹⁸

However, there are problems associated with single family, subdivision-based development. Perhaps foremost among these is the sheer quantities of land involved. In 1990, San Diego County devoted 142,401 acres to single family homes, while only 24,107 acres were occupied by multi-family units. Granted, there are many more single family homes in the region than multi-family homes; the former constitutes 58% of the housing stock and the latter accounts for 37% (the remaining 5% are mobile homes).¹⁹ In terms of acreage, though, almost six times as much land is consumed by single family dwellings than by multi-family dwellings, a disproportionate difference when compared with actual numbers of units. Thus, construction of single family homes requires the conversion of far more land than does the construction of multi-family homes. Furthermore, because single family units take up significantly more space than their denser counterparts, single family developments contribute unequally to the perpetuation of urban/suburban sprawl. This means of achieving the American Dream may hasten the very end that many San Diegans fear: Becoming Los Angeles.

Another negative side-effect of a real estate market dominated by single family units is the increased water consumption that goes along with having a yard. Without overtly critiquing current landscaping trends, the San Diego County Water Authority makes a salient observation on this issue in its Water Resources Plan: "Single family residences generally contain larger landscaped areas, predominantly planted in turf, and require more water for outdoor

¹⁸Frederic O. Sargent *et al.*, Rural Environmental Planning for Sustainable Communities (Washington, DC: Island Press, 1991), 215.

¹⁹SANDAG, "January 1, 1994 Population and Housing Estimates," 14.

application in comparison to other types of housing."²⁰ Of the roughly 163,000 gallons of water consumed by an average single family household (the average household in San Diego County contains 2.8 people) per year, as much as 97,800 gallons goes to outdoor applications.²¹ When municipal water consumption is taken as a whole, estimates of the amount of water devoted to residential and commercial landscaping range from one-third of the municipal total²² to over one-half.²³ Common sense dictates that increasing residential densities and reducing the number of single family units might bring about a decrease in water consumption for non-essential landscaping uses. The CWA appears to concur with this assumption when it states the converse: "Generally, increased construction of single family versus multi-family homes or denser types of development will promote higher per capita demands."²⁴

The fact that CWA refers to lower-density development (vis-à-vis the *residents* of lower-density developments) as "promoting" higher water demands is significant. San Diego County's water supply dilemmas are more a result of poor planning than sheer numbers of people. True, a region like Southern California is undeniably ill-suited to house the millions that live there, but this unsuitability is intensified by a land use "ethic" that places the single family, split-level, three-and-a-half bath, lushly landscaped home above all else. Developers may argue that these are the homes that attract home-buyers; I would argue that these are the homes that generate the most money for the real estate development industry. That these dwellings allow the development industry to

²⁰San Diego CWA, Water Resources Plan, November 1993, 12.

²¹Ibid., 12.

²²Dave Fogerson, Associate Civil Engineer at San Diego CWA, pers. comm., February 2, 1995.

²³Eric Gibson, Professional Planner at County of San Diego Department of Planning and Land Use, pers. comm., November 21, 1994.

²⁴San Diego CWA, Water Resources Plan, 12.

earn windfall profits creates a powerful incentive to continue building the same kinds of dwellings.

Such profiteering must not influence the future of San Diego's growth as it has the past. Since the 1950s, the county government has, by way of institutional planning mechanisms such as the County General Plan, favored low-density, single-family development; it has done so regardless of the availability of water resources and without consideration of the impacts upon natural communities. While it may have made sense to a culture that didn't yet appreciate the relationships between humans and their environs, this approach to growth cannot be rationalized in 1995. Now we presumably know better than to expand our realm beyond what is supportable by available resources. But instead of limiting ourselves, we fabricate resource availability – we satisfy endless human needs by pretending that ceilings and capacities don't really exist. That San Diego County is party to this game of make-believe is evident in its General Plan, a document that fails to adequately address the role of natural resources in land use planning. The consequences of this failure are detailed in the section that follows, while the Plan itself is examined in Chapter Three.

The Impacts of Sprawl Upon Wildlife Habitat, Agriculture, and Water Sources

For the past few decades, metropolitan San Diego's growth and development have been characterized by urban sprawl. When a region is subjected to sprawl, it may experience excessive land conversion, poor coordination of urban services (sewer, fire, schools, roads, etc.), and high rates of resource consumption. The planners that penned San Diego's Regional Growth Management Plan in 1978 were acutely aware of these side effects of sprawl when they posed a somewhat apocalyptic vision of their region's future: "a senseless patchwork of endless residential suburbs stitched together by freeways and neon

commercial strips.”²⁵ This senseless patchwork is now in the process of being sewn, largely at the expense of wildlife habitat, agricultural resources, and water sources.

Wildlife Habitat

Because sprawl tends to be resource-intensive – from requiring more land upon which to construct buildings, to necessitating the increased consumption of fossil fuels as people travel farther distances to the workplace – it stresses natural and urban communities in many ways. Chronologically foremost among these stresses is land conversion; this is generally the first step in creating a new development or augmenting an already-existing one. Throughout all of California, construction of homes and places of business has wrought unbelievable change upon the land, such as the eradication of 95% of the state's wetlands and 90% of its riparian habitat; currently, new development eliminates 20,000 acres of Californian oak woodlands each year.²⁶

In San Diego County, changes of this degree are not uncommon. As of 1971, 77% of the county's land was undeveloped, or “vacant;” by 1990, the corresponding figure was 55 percent.²⁷ This rate of conversion from vacant to developed land is about 1% per year. Although this may not seem like a particularly rapid rate, in a region the size of San Diego, it amounts to approximately 27,000 acres of land converted annually. Not all of this land is prime wildlife habitat, but it is evident from local, state, and federal resource agency reports that the impact of land conversion is felt most keenly by native plants and animals.

²⁵County of San Diego, Regional Growth Management Plan, June 1978, 6.

²⁶Tim Palmer, “A Great Number of People,” in ed. Tim Palmer, California's Threatened Environment, 25.

²⁷SANDAG, “Land Use in the San Diego Region,” in INFO (January-February 1993), 4.

According to California's Natural Diversity Data Base and other monitoring programs, San Diego County contains some 300 sensitive species, 24 of whom are listed or proposed for listing as endangered under federal or state legislation.²⁸ Listed endangered species include the least Bell's vireo, the California least tern, California orcutt grass, and San Diego button celery. The California gnatcatcher was listed as threatened in 1993, an event that has caused a fair amount of controversy and debate throughout the conservation and real estate development communities, largely because the gnatcatcher nests in the most expensive real estate in the world – coastal sage scrub.²⁹

Even more species will be forced into the sensitive category if land conversion continues at current rates. In the western portion of San Diego County, most native habitats have already been severely compromised by the invasion of urbanization; this is especially true of wetlands, lagoons, saltwater marshes, and coastal sage scrub. In an effort to preserve what's left of these coastal communities, the city and county of San Diego have launched a series of regional habitat conservation programs. These programs are now getting underway, and it is still unclear whether they will effectively and proactively prevent the conversion of more habitat. Some environmentalists have expressed concern that programs like these are ephemeral because they depend too heavily upon the impermanent status of listed endangered species.³⁰ Others critique the county's conservation efforts because they are being enacted separately from the land use planning process; until the General Plan is

²⁸Mike Evans, Professional Planner with County of San Diego Department of Planning and Land Use, pers. comm., November 21, 1994; Janet Fairbanks and Lan Xu Toma, "Room to Roam," in Planner (January 1994), 25.

²⁹For a discussion of the gnatcatcher's political and ecological status, see Charles C. Mann and Mark L. Plummer, "California vs. Gnatcatcher," in Audubon 97 (January-February 1995).

³⁰Tricia Gerrodette, former Conservation Chair of the San Diego Chapter of the Sierra Club, pers. comm., November 23, 1994.

amended to include specific habitat conservation programs, these programs will be unable to achieve their lofty goals.³¹

The unincorporated area of the county has suffered considerably less habitat loss and degradation than has the incorporated area. Here, in the eastern two-thirds of the San Diego region, urban sprawl is not yet commonplace and relatively large tracts of wildlife habitat remain. Much of this land – over one million acres – is owned by the state of California or the federal government, and is therefore closed to residential and commercial development.³² However, privately owned land still accounts for roughly one-third of the unincorporated area; it is this land that is absorbing population growth rates which average one to two percentage points above county-wide growth rates.³³ Because East San Diego County has come under such heavy development pressure in recent years, residents have expressed concern about habitat fragmentation, especially within 282,000-acre Cleveland National Forest. This national forest, which has been described as “one of the largest expanses of undisturbed, natural open space in Southern California,” is punctuated by 55,000 acres of private inholdings – land that would be worth a fortune once subdivided.³⁴ In an effort to prevent further habitat fragmentation, San Diego voters passed a ballot initiative in 1993 that sets the minimum parcel size of these inholdings at forty acres. This comparatively large parcel size will help to stave off subdivision and low-density sprawl within Cleveland National Forest – at least until 2010, when the initiative must be reauthorized.

³¹Duncan McFetridge, Director of Save Our Forests and Ranchlands, pers. comm., November 22, 1994. For more on San Diego's Habitat Conservation Plans, see Chapter Five of this paper.

³²SANDAG, “Land Use in the San Diego Region,” 7.

³³SANDAG, “January 1, 1994 Population and Housing Estimates,” 10.

³⁴County of San Diego Registrar of Voters, Sample Ballot and Voter Information Pamphlet, 2, November 1993, 15.

The success of the Forest Conservation Initiative is an exciting and encouraging step towards responsible planning in San Diego County. It is interesting to note that this move forward was mandated by the voters, who apparently felt that the county's professional planners were not doing enough to protect the integrity of Cleveland National Forest. However, this initiative only refers to land lying within the boundaries of the national forest; the thousands of privately-owned acres outside the forest are still at risk of becoming subdivided into ranchettes and mini-estates. Almost all of the acreage in the unincorporated area that is not publicly owned or planted in agriculture falls under the planning category of low-density residential, and low-density residential zoning is often where sprawl begins. So, while the Forest Conservation Initiative will help maintain the continuity of the Cleveland for the next 15 years, there are still no mandates in place to protect private lands from further fragmentation.

Agriculture

Throughout all of California, farmland is being converted to residential uses at an unprecedented pace; annually, over 50,000 acres of productive agricultural lands are subdivided and developed statewide.³⁵ This high rate of conversion speaks to the relatively poor protection offered to farmland by municipalities. While eradication of farmland does not disrupt natural systems in the same way that wild lands conversion does, it can reduce open space resources and may threaten the integrity of rural communities.

In the arena of farmland conversion, San Diego County is once again a microcosm of the state at large. Although only 8% of the county's land is considered agricultural, compared with about 30% for all of California, that acreage supports a one-billion-dollar-a-year industry.³⁶ San Diego is one of the

³⁵Tim Palmer, California's Threatened Environment, 4.

³⁶SANDAG, "Land Use in the San Diego Region," 5; County of San Diego Department of Agriculture, Weights and Measures, 1994 Crop Statistics and Annual Report, 1994, 2.

top 30 agricultural counties in the nation, with farm-generated revenues that comprise the region's fourth largest industry.³⁷ Despite these attributes, San Diego's farmland is not adequately protected from development. Between 1977 and 1982, 60,000 acres of productive agricultural lands were urbanized.³⁸ More recently, the owner of the largest poinsettia farm in the country sold his property to a development company that is now planning a 1,500-home subdivision in its stead.

Conversion of agricultural lands poses a number of problems. Perhaps first and foremost, it invites urban or suburban development where previously there was none. Of course, farms are not pockets of pristine wilderness; the presence of agriculture can and often does wreak havoc upon natural communities. Nonetheless, the benefits of agriculture usually outweigh the benefits associated with residential development. When compared with residential subdivisions on non-urban lands, agriculture offers more monetary revenue over the long term; agriculture provides a community with de facto open space, and in some cases, wildlife habitat and linkage zones; and agriculture can help surrounding human communities become more economically sustainable by supplying locally-produced food sources. When farms are replaced with split-level ranch homes, all of these benefits are compromised.³⁹

Changes in agricultural acreage in San Diego County during the past 25 years illustrate some interesting trends. Between 1971 and 1980, the number of acres zoned as agriculture jumped by about 65 percent.⁴⁰ This increase is probably related to the passage of the California Land Conservation Act of 1965,

³⁷Jim Gogek, "County indifferent to preserving rural land," San Diego Union-Tribune, March 21, 1994, p. A-2.

³⁸American Farmland Trust, "Eroding Choices, Emerging Issues," Executive Summary, 1986, 5.

³⁹For a more detailed discussion of San Diego's agricultural resources, see Chapter Five of this paper.

⁴⁰SANDAG, "Land Use in the San Diego Region," 4.

also known as the Williamson Act. This significant piece of state legislation is a "preferential assessment program...that provides reduced property taxes to farm land in return for restricting its development."⁴¹ Property owners who enter into a contract under the Williamson Act agree not to develop their land in any manner that would be inconsistent with agriculture. The land is then taxed according to its actual worth as farmland, instead of its speculated worth as future subdivisions. During the 1970s, when the Williamson Act gained widespread support throughout the state, several thousand acres were placed under contract in the San Diego region; this may account for the somewhat sudden increase in agriculturally zoned land prior to 1980.⁴²

Since 1980, agricultural acreage has decreased considerably; again, this trend undoubtedly has to do with property taxes. In the early '80s, many land owners canceled their Williamson Act contracts in response to Proposition 13, a state proposition that offered tax savings on non-Williamson Act lands. In addition, California property values rose sharply at that time; many farmland owners may have found it difficult to resist the allure of real estate development dollars. By 1988, over 24% of San Diego's Williamson Act contract holders were opting not to renew their contracts with the state.⁴³ In actual acres, this change resulted in the removal of 32,400 acres (out of a total of 134,000 acres under contract county-wide) from the protective status offered by the Williamson Act. It would be impossible to say with certainty that each of these acres is now slated for residential or commercial development, but logic suggests that land-owners would only leave the fold of the Williamson Act if they had other, non-agricultural land uses in mind.

⁴¹Alvin D. Sokolow, "The Williamson Act: 25 Years of Land Conservation" (The Resources Agency of California, December 1990), 1.

⁴²*Ibid.*, 31.

⁴³*Ibid.*, 36.

In 1990, San Diego County was home to 218,071 acres of agricultural land – a figure which reflects both Williamson Act lands and non-Williamson Act lands. By 1994, that number had dropped to 173,123.⁴⁴ The difference, 44,948 acres, is an indication of how rapidly farmland can undergo conversion to non-farm uses. It remains to be seen whether the county is willing to enact measures that will help protect its farmland from becoming increasingly rare. At present, however, agricultural land owners are selling their acres by the thousands; should this trend continue, suburban sprawl is bound to follow the plow.

Water Sources

As noted above, modern San Diego would not exist in the absence of imported water. Along these lines, the amount of imported water consumed by the San Diego region has increased in conjunction with rising populations and poorly-planned residential development. During the 1989-90 fiscal year, the San Diego County Water Authority supplied its member agencies with a record-breaking 646,488 acre feet of water.⁴⁵ In the years since, regional demand has declined, largely because of California's recent drought conditions. In fiscal year 1991-92, San Diego consumed 503,210 acre feet. However, consumption appears to be on the rise again now that the drought is officially over, and mandatory water rationing is no longer in effect; during fiscal year 1994, San Diegans used 536,907 acre-feet of water, 413,000 of which were imported.⁴⁶

It is obvious from reading the County Water Authority's Water Resources Plan (1993) that CWA is nervous about the security of San Diego's imported water. The Plan is chock-full of suggestions, some of which border on the preposterous, to supplement the region's endangered water supply. One of the

⁴⁴County of San Diego Department of Agriculture, Weights and Measures, 1994 Crop Statistics and Annual Report, 2; SANDAG, "Land Use in the San Diego Region," 6.

⁴⁵San Diego CWA, Water Resources Plan, 10.

⁴⁶Lee Willer, Water Resources Planner with San Diego CWA, pers. comm., April 20, 1995.

saner recommendations is actually only an observation – that single family residences tend to use more water than multi-family residences. Nowhere in this document does CWA openly suggest that the County of San Diego ought to promote higher-density residential development in an effort to save water. But CWA does discuss the need to conserve water, while simultaneously making the keen observation regarding single family dwelling units. The connection between land use and water consumption is an obvious one; planners and county supervisors are undoubtedly aware of this relationship, but they have thus far failed to act upon their awareness. The kind of development that now dominates the San Diego landscape, single family residential, has only helped to increase the region's dependency upon imported water. Any sincere, rational effort to conserve substantial amounts of water over the long-term must address the preponderance of lawn-oriented single family homes and the sprawl with which they are associated.

Beyond the boundaries of CWA, specific information about water consumption is harder to come by. In these areas outside of CWA's jurisdiction, groundwater and surface run-off comprise the bulk of water resources. For planning purposes, CWA assumes that these local supplies have a dependable yield (a sort of worst-case scenario) of 25,000 acre-feet per year, and a normal yield of 60,000 acre-feet per year.⁴⁷ Because overall estimates of available groundwater can be inaccurate, county hydrologists are unable to precisely determine what's been consumed and what's still left. However, it is becoming increasingly apparent that suburban-style development is taking its toll in the more rural areas of the county. Groundwater assumptions from ten years ago were too optimistic, and projects that the County Department of Planning and Land Use

⁴⁷San Diego CWA, Water Resources Plan, 22.

approved a decade ago have already run out of water.⁴⁸ Further, alluvial aquifers, which are capable of supplying water to the larger towns outside of CWA's service area, are already fully developed for local yield. Many of these aquifers' associated alluvial basins have been "overdrafted in the past and are suffering from water quality problems due to seawater intrusion and urban and agricultural runoff contamination."⁴⁹

As it stands, both imported and local water supplies seem to be reaching some sort of critical juncture. Both have become stressed in recent years, and now the future of each is largely uncertain. Although several compelling reasons exist for pursuing improved patterns of development, the issue of water scarcity creates a particularly poignant argument. Because it is San Diego's scarcest essential resource, water should figure largely in determining the course of this region's future growth. If for no other reason, San Diego County may want to carefully consider the feasibility of growth moratoria and improved patterns of development based on the physical and practical constraints of water scarcity.

Looking Ahead: Growth Projections for the Next Two Decades

The past 40 years have brought enormous changes to San Diego County. Much of San Diego's growth and development to date has seen a concomitant decline in the quality and quantity of available land and water resources. Perhaps for the first time in San Diego's history, these resources do not appear boundless. The Metropolitan Water District will continue to supply San Diego with imported water into the foreseeable future, but supplies are not what they once were, and water costs are bound to reflect this tightening; similarly, local

⁴⁸Eric Gibson, Assistant Groundwater Engineer with County of San Diego Department of Planning and Land Use, pers. comm., November 21, 1994.

⁴⁹San Diego CWA, Water Resources Plan, 22.

groundwater supplies are less plentiful than previously assumed. San Diego, a county that's twice the size of some mid-Atlantic states, can only accommodate so many more houses if it hopes to maintain and support any non-human communities. Despite these distinct warning signs, San Diego's growth projections for the next 20 years show no indications of a slow-down.

Although San Diego's growth rate has been tapering off over the past few years, the county still expects to add another one million people during the next two decades. In 2015, the predicted population of the San Diego region is 3,816,000.⁵⁰ Normally, the San Diego Association of Governments (SANDAG) would be able to project the number of additional housing units that will be constructed to meet the needs of these new San Diegans. However, for the first time in SANDAG's history of conducting growth forecasts, local land use policies (based on community and general plans) could not accommodate the county-wide forecast beyond the year 2005.⁵¹ It would appear that, in ten years, San Diego will run out of "developable" land. This means that the County Board of Supervisors will need to make some sizable changes to the existing General Plan, if the county intends to house the one million people that will be moving into the region.⁵²

In the absence of existing policies that are capable of absorbing San Diego's predicted population growth, SANDAG's housing projections through 2015 are based upon simulated increases in residential densities. According to these simulations, known as the Interim Forecast, future demand for housing will result in an additional 487,900 units being built by 2015.⁵³ Current policies and zoning regulations can accommodate less than half of this projected demand. If

⁵⁰SANDAG, Series 8 Regional Growth Forecast (1990-2015), March 1994 (photocopy).

⁵¹SANDAG, Series 8 Regional Growth Forecast for Jurisdictions and Other Communities, Agenda Report No. 94-07-14, July 1994 (photocopy).

⁵²For a further discussion of this planning crossroads, see Chapter Three of this paper.

⁵³SANDAG, "A Look at San Diego's Future," 15.

SANDAG's simulations are accurate, the construction of 487,900 units will require the conversion of 275,000 acres of presently undeveloped land. Table 2.2 tracks the rise in developed acreage over the next 20 years.

<u>ACRES</u>	<u>1990</u>	<u>2005</u>	<u>2015</u>
Vac. Dev. Acres:	699,885	578,461	416,921
Developed Acres:	923,936	1,047,807	1,198,791
LD Single Family:	55,047	122,665	238,409
Single Family:	142,401	183,369	209,495
Multi-Family:	24,107	30,157	33,692

Table 2.2: Projected increases in developed acreage over a 20 year period in San Diego County.⁵⁴ Vac. Dev. = Vacant Developable; LD = Low Density.

SANDAG's estimates indicate that the most dramatic increase in developed acreage will take place in the category of low density single family units, where a 333% rise is expected. Meanwhile, acreage devoted to multi-family residences can look forward to a 28% increase. This enormous discrepancy is attributable to the fact that fully 88% of San Diego County's "vacant developable acres" is designated for low density single family housing.⁵⁵ Of this 88%, almost half, or 42%, is located in East San Diego County – which makes up the bulk of the unincorporated area and the bulk of its privately owned open space resources. However, even under existing land use policies, which apparently favor low density, single family development, it seems unlikely that the eastern region of the county will be developed to its full "potential." This potential translates into a projected 67,845 housing units by 2015, whereas in 1990 there were only 10,000 units scattered throughout East County.⁵⁶ An increase of 58,000 units, while not unheard of in Southern California, is probably unrealistic. Nonetheless, the County General Plan and the

⁵⁴Ibid. 14-15.

⁵⁵SANDAG, "Land Use in the San Diego Region," 9.

⁵⁶Ruth Potter, SANDAG Series 8 Forecasts in East County, February 1994 (photocopy).

appropriate community plans for this area, as they are currently worded, *allow* for the subdivision of this land into 58,000 additional lots. Whether houses are actually built and wells actually drilled remains to be seen.

The other 46% of "vacant developable lands" is shared by the East Suburban and North County East areas. These two areas, both of which contain incorporated and unincorporated communities, are considerably closer to employment centers than the East County area. Thus, they may attract more urban and suburban-style growth than areas further east. Also, because they border more heavily developed parts of the county, namely the cities of San Diego, Chula Vista, and Escondido, these areas stand a greater chance of becoming more heavily developed themselves. Since East Suburban and North County East contain almost half of the vacant developable acres in the county, it is reasonable to assume that a disproportionate amount of the county's future home-building will happen here.

Specific information regarding the impacts of predicted construction and associated land conversion is sparse. However, based on what we've witnessed during the past decades, it's possible to extrapolate about the future. The formula is simple: The more San Diego sprawls, the greater the losses will be in terms of habitat and agriculture. The extent of these losses will be determined by how much San Diego is allowed to sprawl. If the County Board of Supervisors decides to revise the County General Plan such that it favors higher-density multi-family development, then perhaps wildlife habitat and farmland will fare reasonably well. If the Board of Supervisors opts to maintain the status quo, then we can look forward to more land conversion, longer lists of sensitive species, and less locally-grown produce.

Data regarding consumption of imported water is more readily available. The County Water Authority has estimated that demand for MWD water will

reach 900,000 acre-feet by 2010. This projection reflects the use of current conservation practices; if CWA is able to implement Best Management Practices, as outlined by the California Department of Water Resources, total use may drop to 832,000 acre-feet in 2010.⁵⁷ Of this total, CWA expects municipal and industrial uses to consume about 86%, while agriculture will account for 14% (down from the 19% of imported water that agriculture currently uses). The predicted 5% decline in agricultural uses is based upon rates of urbanization and rising land and water costs (San Diego agricultural water costs more than 30 times what Central Valley and Imperial Valley farmers pay).⁵⁸

Within the residential sector, there's a possibility that per capita demand will increase between now and 2010. SANDAG has forecasted that the average household size will fall by about .02 percentage points; this decline could result in higher per capita demands by increasing the ratio of dwellings – and lawns – to residents.⁵⁹ Even if per capita demands remain stable at the current rate of .22 acre-feet per person, CWA must attempt to supplement the region's imported water supplies if it hopes to meet the demands of one million more people.

What Next?

Although it might be hyperbolic to suggest that San Diego is doomed to a thirsty, smoggy, and overcrowded future, it is only realistic that this county should rethink its planning strategies. The history of development in San Diego could be construed as a series of mistakes leading to a kind of growth that no one, save a few very wealthy developers, actually wants. Despite these mistakes, I contend that it is not too late to prevent San Diego County from sprawling much further. The General Plan will need to be amended within the next ten years in

⁵⁷San Diego CWA, Water Resources Plan, 16.

⁵⁸Ibid., 18.

⁵⁹Ibid., 12.

order to accommodate the inevitable population increases; this would be an ideal opportunity to change the Plan for the better. County planners and supervisors – those who will be largely responsible for creating these changes – might do well to read the following reminder that San Diego contains plenty that's worth holding on to.

San Diego County is perhaps unique in America for its amazing diversity of land. Beaches and cliffs give way to tide pools and lagoons, and then to coastal plains intersected by rivers, mesas carved by valleys and canyons, rocky foothills covered with chaparral, mountains graced by conifer forests and alpine meadows and then a steep descent into desert. While the county may be best known for its cities, rural land covers its vast reaches.⁶⁰

⁶⁰Jim Gogek, "County indifferent to preserving rural land."

CHAPTER THREE: A CRITIQUE OF THE TOOLS (I): LAND USE PLANNING

The purpose of all cities until now has been to develop the economy; the purpose of the ecological city is to develop the ecology. Our present cities, east and west, embody the culture which asks, How can we exploit the resources of our natural environment to develop and improve our economic relationships? This must be turned around to ask, How can we develop and improve our ecological relationships by exploiting the mechanisms and resources of our economic system?¹

San Diego County has grown considerably during the second half of this century. In large part, this growth has been characterized by urban and suburban sprawl, resource depletion, and extreme anthropocentrism. Some county residents and citizens' groups have advanced the theory that San Diego has grown in an irrational and haphazard fashion. But despite these criticisms and those offered in the previous chapter, San Diego's growth did not just "happen." This region, like most regions throughout the United States, developed according to carefully rendered plans and formal zoning ordinances. These plans and ordinances, also called land use planning tools, guide a community through its various stages of growth while providing the community with a vision of its future. However, a problem arises when these tools fail to consider the physical limitations that characterize a given community; a plan may be detailed and comprehensive, but if it doesn't acknowledge its on-the-ground, ecological context, then it may lead its community down a path of maldevelopment.

There is little doubt that San Diego's land use planning tools are detailed and comprehensive. If a land owner wishes to construct a dog kennel in her yard, she must first visit the County Department of Planning and Land Use's Zoning Desk to determine if she is allowed to have a kennel on her property. Likewise the home owner that wants to increase the height of his fence. A developer who intends to build a master-planned community must comply with countless

¹Paul Downton, Keynote Address, First International Ecocity Conference, 1990.

regulations and submit no shortage of maps and applications. Yet all of this complexity notwithstanding, San Diego's tools are flawed. They are flawed because they lack a rational understanding of physical limits; these tools, as they currently read, allow for the continued development of land regardless of resource-based considerations.

Of course, San Diego does not exist in a planning vacuum. The county's planning tools, be they imperfect or otherwise, are part of a 70-year-old legacy of standardized American land use planning. Before critiquing San Diego's specific tools, namely its general plan, it may be useful to briefly consider the broader topic of land use regulations in the United States.

An Overview of American Land Use Planning

Modern American planning relies primarily on two general constructs, the comprehensive plan and the zoning ordinance. The former provides the vision for a community's growth; it "help[s] ensure that a long-range perspective is guiding incremental land use decisions."² The latter is comprised of specific regulations that implement the land use policies found in the comprehensive plan.³ In order for the zoning ordinance to make sense, the comprehensive plan must come first. Indeed, all planning begins with the comprehensive plan.

Also called master plans and general plans, comprehensive plans have a number of standard characteristics: They deal with the physical development of a community; they attempt to project the development of the community to a future point in time; they include all of the physical elements that may determine the community's future development; land use, public facilities, and circulation

²Stuart Meck and Edith M. Netter, eds., A Planner's Guide to Land Use Law (Washington, DC: Planners Press, 1983), 9.

³Daniel R. Mandelker, Land Use Law (Charlottesville, VA: The Michie Co., 1982), 1.

(roads and streets) are common to all plans.⁴ All states have legislation that allows local governments to partake of the comprehensive planning process; some states, including California, have made the adoption of comprehensive plans mandatory. In California, not only are county governments required to adopt a comprehensive plan, but these plans must include seven basic sections, or elements: Land use, circulation, housing, conservation, open space, noise, and public safety.⁵ Other elements, such as agriculture, are optional and their adoption is left to the discretion of individual counties.

Ironically, the process by which planners prepare comprehensive plans is called "rational planning." The irony exists in the fact that rational planning does not include the preparation of a natural resource baseline. It calls for projections regarding population, economics, public facilities, and land use, but it fails to actively consider resource availability. However, resource availability should, rationally, lead the way in the planning process. Rather than asking, "How many people will live here in 20 years?" and "How wealthy do we want to become?" planners should inquire, "How many people is this region capable of supporting without compromising its natural systems?" and "To what extent is ecological sustainability compatible with current development patterns?"

Although rational planning seems to be asking the wrong questions, it is currently the dominant paradigm in the drafting of comprehensive plans. It consists of three steps: First, planners undertake a survey and analysis of basic data that will provide the foundation for the plan's policies; second, they make future projections about population, economics, public facilities, and private land use; third, planners develop a set of goals for the future growth of the community.⁶

⁴Ibid., 49.

⁵Daniel J. Curin, Jr., California Land Use and Planning Law (Berkeley, CA: Solano Press, 1988), 16.

⁶Mandelker, Land Use Law, 50.

Once the planning commission agrees on a set of goals and policies, they create the full-fledged comprehensive plan, complete with its various elements. The next step is the adoption of the zoning ordinance.

When people think about land use or urban planning, the term "zoning" is probably one of the first things that comes to mind. While the plan provides the vision, zoning actually executes the plan's goals. It does so through regulations that designate land use districts and which specify the land uses allowed in those districts. These regulations "separate incompatible land uses, comprehensively assigning compatible land uses to zoning districts throughout the community."⁷ In fact, compatibility is the crux of the zoning concept. Zoning ordinances stem from land use nuisance doctrines, which, prior to the passage of the Standard Zoning Act in the mid-1920s, kept commercial and industrial enterprises out of residential areas.⁸ Largely because of its ancestry, modern zoning continues in this vein of stratification: Commercial, industrial, and residential land uses are usually located in distinct and separate parts of a community, as they are considered incompatible. Critics of zoning cite these land use patterns as a major contributor to urban sprawl problems. When people live in exclusively residential neighborhoods, they must travel greater distances to their jobs and other non-residential destinations. Consequently, communities tend to be less compact and more dependent upon automobiles. However, increasingly, the idea of mixed land uses seem to be gaining in popularity.⁹ In addition to considering mixed land uses, an improved version of zoning might also examine the compatibility between a given land use and the land itself.

⁷Ibid., 3.

⁸Alexandra D. Dawson, Land Use Planning and the Law (New York: Garland STPM Press, 1982), 37.

⁹Sierra Club California, "Policy Before Planning," Green State of the State Report, 1991; California Senate Office of Research, "Prosperity, Equity, and Environmental Quality: Meeting the Challenge of California's Growth," 1991.

For the most part, however, zoning in its current form is the most widespread land use planning tool in the country. All 50 states have legislation authorizing municipal zoning, and all major cities except for Houston have zoning ordinances.¹⁰ Zoning ordinances have at their core land use, density, and site development controls. The standard zoning format contains the three basic residential, commercial, and industrial categories and subdivides each category into a zoning district. In addition to specifying the permitted land uses, each district also has density limitations. The ordinance usually specifies densities by requiring minimum lot sizes; it can also specify residential densities by indicating how many dwelling units are allowed on an acre of land.¹¹

California, like most states, requires that zoning ordinances be enacted in accordance with the corresponding comprehensive plan.¹² This mandate is intended to keep zoning compatible with the long-range development goals of the community. While this is a worthy intention, it is also a slippery one, as zoning ordinances can be surprisingly malleable. Critics charge that, the plan notwithstanding, zoning "has no rational basis and is applied on a case-by-case basis with little or no capacity to serve [an] area with facilities," such as sewers, roads, and schools; furthermore, zoning is mired in politics and as such is "often decided on the basis of cronyism and bribery."¹³ One critic gets straight to the point: "Perhaps the greatest flaw in the present system of zoning is the naïve assumption that the plan commission and governing body will enact zoning

¹⁰Mandelker, Land Use Law, 1.

¹¹*Ibid.*, 100.

¹²Elaine Moss, ed., Land Use Controls in the United States (New York: The Dial Press/James Wade, 1977), 323.

¹³Daniel R. Mandelker and Edith M. Netter, "Comprehensive Plans and the Law," in Meck and Netter, eds., A Planner's Guide to Land Use Law, 19.

regulations for the public good without giving rise to enormous windfalls for some owners and wipeouts for others."¹⁴

Just as it may be naïve to assume that zoning is always enacted with the best intentions, it would be false to suggest that all zoning is necessarily corrupt. Zoning ordinances have helped many communities grow responsibly and intelligently, without leading to the aforementioned windfalls and wipeouts. Petaluma, California, and Ramapo, New York, are two towns that, during periods of intense growth in the 1970s, used zoning to limit the number of houses being built so that the communities would not lose their essential character.¹⁵ Whether zoning is used for the good of the public or misused for the benefit of a few depends largely upon the community in question, since zoning is usually a highly localized undertaking. In California, for example, no state-level zoning guidelines exist; all land use planning powers are held by cities and counties.¹⁶ Some see this absence of real direction from the state as a problem in dire need of a solution:

The [California] state government has simply not seen fit to establish hard and fast rules for land use...A profound bias against regulation itself, and against community control as opposed to individual control over land use, is the *root cause* of the state's current land use and growth problems.¹⁷

In California, this lack of "hard and fast rules" translates into a lack of protection for open space and agricultural lands; with no specific state mandates in place, preservation of these resources is left up to individual municipalities. As noted above, some communities rise to the occasion and protect their resources responsibly, while others do not. Sonoma and Placer counties, where rural lots are zoned as high as one house per 640 acres, are examples of communities that have risen to the occasion; San Diego, where agricultural preserves are zoned at one

¹⁴Richard W. Cutler, "The Dilemma of Modern Zoning," in Meck and Netter, eds., A Planner's Guide to Land Use Law, 127.

¹⁵Mandelker, Land Use Law, 286-288.

¹⁶Sierra Club California, "Policy Before Planning," Green State of the State Report, 1991, 2.

¹⁷Gary A. Patton, "The Transformation of Paradise," in Tim Palmer, ed., California's Threatened Environment (Washington, DC: Island Press, 1993), 134 (Emphasis added).

house per eight acres, is an example of a county that has not.¹⁸ Proponents of state-level planning guidelines hope that “mandated performance standards” would improve the capricious ways of local zoning ordinances, and create a more accountable approach to regional planning.¹⁹

For now, comprehensive plans and zoning ordinances are enacted and applicable at the local level only. In this way, each community is empowered to at least partly determine its own future.²⁰ But, in the case of San Diego County, the future may be compromised, like the recent past and present, by the use of planning tools that neglect natural communities. A closer look at San Diego's General Plan will reveal the ways in which the county's tools are flawed and how these tools place natural resources at risk. I have limited my discussion to the three General Plan elements that deal most directly with natural, open space, and agricultural resources: The Regional Land Use, Conservation, and Open Space elements.

An Elemental Critique

Land Use

The Regional Land Use element of San Diego County's General Plan was adopted in January of 1979. As the Land Use element, this document and its associated maps provide the central framework for the entire plan; they identify the proposed distribution and intensity of land uses for housing, business, industry, open space, natural resources, and public facilities. The Land Use Element's overall goal is to

[a]ccommodate population growth and influence its distribution in order to

¹⁸Jim Gogek, “Prop. C should be an eye-opener for county,” San Diego Union-Tribune, November 1, 1993, A-2.

¹⁹Patton, “The Transformation of Paradise,” in ed. Tim Palmer, California's Threatened Environment, 138.

²⁰I say “partly” because there are many non-physical elements that planning cannot control.

protect and use scarce resources wisely; preserve the natural environment; provide adequate public facilities and services efficiently and equitable [sic]; assist the private sector in the provision of adequate, affordable housing; and promote the economic and social welfare of the region.²¹

Other, more specific goals include: "Encourage continuance and expansion of agricultural uses in appropriate portions of the unincorporated area;" "Promote the conservation of water and energy resources;" and "Retain the rural character of non-urban lands."²²

So the Plan gives as its land use goals maximizing human welfare, conserving natural resources, and protecting the environment. Where the Land Use Element falls short is in its understanding of the general welfare as something that can exist outside of a biological/ecological context. The document is filled with policies and action programs aimed at protecting and conserving natural resources, but never are these resources viewed as limiting factors. Instead, scarcity becomes an obstacle to be surmounted, another planning challenge in the quest to accommodate more San Diegans. But until humans learn how to fabricate water and prevent species extinction, resource scarcity will continue to be no mere stumbling block; right now, it is a very real constraint that most people, including planners, attempt to circumvent. Further, this trinity of goals assumes that ecological integrity and "economic and social welfare" are compatible objectives under the present planning paradigm, wherein 68% of the county's private land is zoned as low-density, single family, residential acreage.²³ Based on current information regarding San Diego's ecological integrity, these goals are *not* compatible. The policies and action plans designed to protect the region's environment are counteracted by land use designations and zoning regulations that encourage low-density development.

²¹County of San Diego, General Plan Part II: Regional Land Use Element, January 1979, 2.

²²Ibid., 2-3.

²³SANDAG, "Land Use in the San Diego Region," in INFO (January-February 1993), 9.

Considering that the Land Use Element states from the outset that the protection and intelligent use of scarce resources is a priority, it is surprising that water consumption does not receive more attention here. Groundwater is mentioned in a few places throughout the text, mainly in conjunction with the County Groundwater Policy's requirement that rural development areas provide "proof of long-term groundwater supply."²⁴ Meanwhile, the issue of imported water isn't raised once. Granted, this is a land use document, not a water use document, but the two resources are inextricably linked – there can be no anthropocentric land use without water consumption. If the county intends to accommodate population growth of the magnitude that is predicted in the next two decades, without violating resource-protection and environmental preservation goals, then it must begin to connect land use planning with water planning. Such a connection might begin with the Land Use Element, where water-saving techniques like xeriscaping could be initiated.

Just as the Land Use Element does not concern itself with imported water, it also lacks any direct references to land conversion and habitat loss. To the element's credit, it does contain a section on Environmentally Constrained Areas, a regional category which includes floodplains, lagoons, agricultural preserves, and areas containing rare and endangered plant and animal species.²⁵ The policy regarding such areas states: "Development in these areas, while guided by the County General Plan, should be preceded by thorough environmental review and implementation of appropriate measures to mitigate adverse impacts."²⁶ However, the County General Plan makes no provision for the development of these areas, other than to defer to community plans (which are based on the

²⁴County of San Diego, General Plan Part II: Regional Land Use Element, 9. For a discussion of the County Groundwater Policy and Ordinance, see Chapter Four of this paper.

²⁵Ibid., 11.

²⁶Ibid., 12.

County General Plan), the County Zoning Ordinance (which must be in compliance with the General Plan), and the County Groundwater Policy (which regulates intensity of development based on groundwater availability only, and does not consider other environmentally constraining factors). The reasoning here seems circular, and the protection afforded Environmentally Constrained Areas appears weak and arbitrary. Perhaps even more importantly, the Land Use Element refers only to the need to protect these constrained areas, where rare organisms and sensitive soils exist; the element makes no provision for the protection of more common areas. The history of sensitive natural communities tells us that protection of that which is rare may intensify stresses on currently common, healthy communities.²⁷

Another land use designation that receives short shrift in this text is the agricultural preserve. An agricultural preserve is a tract of land that has been classified as productive farmland, and is currently being used as rural land and not residential land; many preserves are also under contract through the Williamson Act, which offers increased protection from development via tax breaks. As noted above, one of the Land Use Element's foremost goals is to "Encourage continuance and expansion of agricultural uses in appropriate portions of the unincorporated area."²⁸ Interestingly enough, this goal contains no reference to farmland within the incorporated area of the county. The rationale behind such an omission is unknown, but perhaps the General Plan's drafters understood that attempts to

²⁷In 1978, the Regional Growth Management Plan recommended the adoption of "Land Use and Zoning Designations that Discourage Development." These designations would have applied to development in environmentally constrained areas, but the recommendation was deleted from the final version of the plan. The omission was based on the following reasoning: "It has been concluded that the best way to protect environmentally constrained lands is through timely implementation of the adopted Conservation Element...Imposition of interim zoning or implementation of other policies will merely detract from this important effort." County of San Diego, Regional Growth Management Plan, 1978, 27.

²⁸County of San Diego, General Plan Part II: Regional Land Use Element, 3.

continue and expand agricultural uses in the county's rapidly urbanizing areas would be ill-fated.

Taking this goal at face value then, it is safe to assume that San Diego supports the existence of agriculture, at least in the rural parts of the region. According to the policy governing agricultural preserves, though, this support may not actually exist: The policy sets the minimum parcel size of this land use designation at eight acres.²⁹ Some local land use watchdog groups (Save Our Forests and Ranchlands, the Environmental Law Center, and the San Diego Chapter of the Sierra Club) oppose this minimum parcel size because it is simply too small for a commercially-viable farm operation. Perhaps with unlimited water supplies and a more temperate, coastal climate at her disposal, a farm owner might turn a profit with eight acres of high-value crops. But in the unincorporated area of the county, such conditions are harder to come by, and many farmers must turn to more space-consuming enterprises like dry land grazing or tree crops. This is where the eight-acre minimum appears particularly antithetical to productive agriculture: If eight acres is too little for commercially viable farming, then what is the point of zoning agricultural preserves at eight acres? Critics suggest that the point has much to do with allowing for the subtle and incremental intrusion of residential land uses onto San Diego's farmlands, while landowners take advantage of Williamson Act tax breaks. An environmental consultant assesses the situation this way:

The primary purpose of the Agricultural Preserve designation is to facilitate policies for the implementation of the Williamson Act. Zoning must, therefore, be consistent with Williamson Act implementation. Eight-acre zoning which occurs in much of the land designated Agricultural Preserve does not comply with the intent and language contained in the county's Agricultural Preserve Policy nor the Williamson Act goals...This [eight-acre zoning] provide[s] an inducement to develop these lands as

²⁹Ibid., 23.

ranchettes and other non-agricultural uses.³⁰

Many other counties throughout California have opted to zone their agricultural lands at much higher parcel sizes than those used in San Diego. San Luis Obispo and Santa Barbara counties zoned their grazing land at 320 acres; Sacramento, San Mateo, and Ventura zoned theirs at 160; even San Bernardino out-zoned San Diego by a factor of five with its 40-acre minimum parcel size.³¹ It is not yet possible to determine the exact effects of San Diego's eight-acre minimum upon farmland, as it was only recently codified as part of the General Plan in 1994.³² But concerned citizens predict that such zoning will certainly not "encourage the continuance and expansion of agricultural uses...."

Perhaps the best way to achieve the Land Use Element's agricultural goal is to draft and adopt an agricultural element to the San Diego County General Plan. At present, the county has no specific long-term recommendations regarding agriculture. Such recommendations were intentionally left out of the Regional Growth Management Plan because "an agricultural element is currently being prepared by the Integrated Planning Office and we wished to avoid duplication of effort."³³ An agricultural element was indeed drafted, but it was never adopted due to intense opposition from both developers, who prefer the relatively easy access to farmland they presently enjoy, and certain farmers, who prefer to maintain their option of selling out to developers when the time comes. The integrity of San Diego's farmland would best be served by a General Plan that refused to pander to these interests. The current Land Use Element, with its

³⁰Richard Grassetti of Grassetti Environmental Consulting, letter to San Diego County Board of Supervisors, dated July 8, 1993.

³¹Jim Gogek, "Prop. C should be an eye-opener for county."

³²Jim Gogek, "County indifferent to preserving rural land," San Diego Union-Tribune, March 21, 1994, A-2.

³³David C. Nielsen, Director of Regional Growth Management, letter to San Diego County Board of Supervisors, dated June 14, 1978.

conflicting agricultural goals and policies, cannot truly address the issue of farmland conversion in San Diego County.

The General Plan's Land Use Element, while punctuated by worthwhile goals, does little to actively protect the county's habitat and agricultural resources. Furthermore, it fails to recognize the interdependencies between land use planning and water planning. Because the Land Use Element provides the county-wide plan with a central framework, this text would be an appropriate place to put forth even stronger protective policies for the region's land-based resources; and, although it doesn't seem to be the appropriate place to plan for the county's agricultural future, the Land Use Element could provide a distinct agricultural element with supportive and supplemental policies.

Conservation Element

The Conservation Element of the San Diego County General Plan was adopted in December of 1975 with this stated purpose: "...to identify and describe the natural resources of San Diego County and prepare policies and action programs to conserve these resources...."³⁴ Each chapter of the Conservation Element consists of findings, or evidence of resource-related issues and problems, followed by relevant policies and action programs. In these policies and action programs, the element's authors attempt to balance their stated purpose with the needs and desires of a growing human population. Yet the Conservation Element does not result in balance: Because of the ways in which San Deigo has grown, human populations have increased at the expense of natural communities. With almost four million residents by 2015, San Diego County will find it impossible to prevent certain levels of resource depletion and ecological degradation. Perhaps the Conservation Element should be primarily concerned with *slowing* the rate of

³⁴County of San Diego, General Plan Part X: Conservation Element, December 1975, 1.

environmental loss, as that may be the closest thing to “balance” that San Diego’s dry climate and large population will allow.

The Conservation Element begins, appropriately enough, with water. The first sentence of this section sets the tone for the next several pages: “The continued growth and development of San Diego County is dependent on the availability of an adequate supply of potable water.”³⁵ The text goes on to say that the region’s water supply is not as secure as it was once assumed to be; this insecurity applies to both imported and local water supplies. At the same time, the county’s population is on the rise, which presumably means that San Diego will need even more water than it currently has access to. Logic suggests that, in light of rising populations and shrinking water supplies, the Conservation Element should take a firm, conservative approach to water planning. Such an approach might involve incentives or even mandates for the reduction of landscaping and other non-essential water uses. But instead of calling for a decrease in water consumption, the Conservation Element promotes the search for new water sources that will help the county meet ever-increasing demands: “The County will support programs which assure an adequate supply and quality of water to meet the present and future population needs....”³⁶

Perhaps the Conservation Element’s attitude toward water use is best captured by Water Policy 1: “Regional estimates of the need for water should be based on land use and population projections derived from the General Plan.”³⁷ This policy constructs an irrational and unrealistic relationship between land use planning and water consumption. In a region like San Diego, where water is a scarce and fickle resource, plans to provide water should not be based on unrestricted growth projections, as populations will always expand to demand

³⁵Ibid., 17.

³⁶Ibid., 21.

³⁷Ibid., 21.

more water. In order for Water Policy 1 to make any sense, it should read:

"Regional estimates of land use and development should be based on water availability projections." Such a revision would require that the entire General Plan rearrange its approach to accommodating growth, whereby physical and natural limitations receive the recognition which they are due.

This kind of recognition is not completely absent from the Conservation Element's discussion of water. As far as groundwater is concerned, there seems to be an understanding that this is indeed a limited resource: "The availability of groundwater is an important consideration in determining the appropriate intensity of development in all areas of the County not served by imported water."³⁸ However, as soon as an area is annexed to a County Water Authority service district, such considerations seem to be forgotten; the availability of *imported* water is not seen as an important factor in determining appropriate intensities of development. Even within the unincorporated area, availability of groundwater sometimes has little effect upon the approval of subdivision projects. The County Groundwater Ordinance requires that only a representative number of lots be tested for adequate groundwater supplies; this method has resulted in some approved developments drying up, as the representative lot tests are capable of overestimating groundwater sources. Furthermore, as of March 1995, no subdivision application had ever been denied by the County Department of Planning and Land Use based on groundwater availability.³⁹

The exclusion of the bulk of the unincorporated region from the County Water Authority's service area may help to curb rates of development, because of practical considerations like groundwater availability. However, if the unincorporated region were to be annexed to the CWA via a new aqueduct, then

³⁸Ibid., 19.

³⁹John Peterson, Groundwater Engineer with San Diego County Department of Planning and Land Use, pers. comm., March 20, 1995.

groundwater availability would no longer be a serious concern, and development would receive the proverbial green light throughout the eastern reaches of the county. Although such a turn of events is thought to be unlikely, according to the Conservation Element, no governmental policies exist that would restrict the construction of an East County aqueduct.⁴⁰ In fact, the County of San Diego and its Board of Supervisors have limited control over the placement of major water facilities in the unincorporated area. Even though a new aqueduct probably won't be built in the near future, it would behoove the county to adopt a stronger position on this question now, before the presence of increasing development pressures complicates the issue further.

Although the Conservation Element says little about actually restricting growth due to water-related limitations, it does offer, perhaps unwittingly, a number of sensible reasons to change the course of San Diego's development. Foremost among these reasons are the various threats to imported and local water supplies, and the realization that San Diego's water sources are not infinite. The element also addresses the issue of wastewater and overburdened sewage systems. Currently, much of the county's sewage is disposed of in the Pacific Ocean, yet the long-term effects of this dumping "have not been adequately assessed."⁴¹ More development will lead to more water consumption which will lead to more wastewater, which could lead to the further contamination of what is arguably one of San Diego's greatest assets – the Pacific Ocean. More development will also lead to the conversion of more land, which, as the Conservation Element points out, will have an adverse impact on water quality and flood control.

All forms of man's [sic] activities and land use affect water quality. Agricultural use results in an increase of nutrients and pesticides in stream water and subsurface groundwater. A change for [sic] agricultural use to residential use tends to reduce these types of nutrients, but this is counteracted

⁴⁰County of San Diego, General Plan Part X: Conservation Element, 19.

⁴¹Ibid., 22.

by such pollutants as oil, gasoline, and pesticides. The land use change generally has an adverse effect on water quality.⁴²

...and...

Urban development increases the peak flood flow and decreases the lag time between a rainfall event and the ensuing flood. Water runs off faster from streams and roofs than from natural vegetation areas. Construction of artificial channels, especially storm drains, increase [sic] the run-off rate.⁴³

Despite these convincing water-oriented arguments in favor of restricting development, the Conservation Element offers no leadership in terms of setting growth limits. The text here speaks only of mitigation and accommodation. The County of San Diego is by no means ignorant of its physical limits and constraints, but it has shown an institutional reluctance to comply with them.

The Conservation Element's chapter on water is largely indicative of the bulk of the document: Good information and a solid understanding of the consequences of growth, followed by inadequate, unspecific, or unrealistic policies and action programs. For example, in the element's chapter on wildlife habitat, one finding reads, "Various types of pollution adversely impact vegetation and wildlife in San Diego County."⁴⁴ The corresponding policy states, "The County will attempt to identify, reduce and eliminate all forms of pollution which adversely impact vegetation and wildlife."⁴⁵ While this is certainly a noble goal, it is difficult to take seriously; if the county truly intended to eliminate all forms of pollution that adversely impact natural communities, then it would have long ago called for the evacuation of over two million people.

On the topic of agriculture, the Conservation Element is intentionally vague. Like the Regional Growth Management Plan of 1978, this document offers few details regarding the conservation of agricultural resources because it assumes

⁴²Ibid., 27.

⁴³Ibid., 29.

⁴⁴Ibid., 48.

⁴⁵Ibid., 50.

that an agricultural element will be adopted as part of the County General Plan. In fact, Soil Policy 2 of the Conservation Element states, "The County General Plan will be amended to include an Agricultural Element which will consider all aspects of the agriculture industry and will designate exclusive agricultural areas."⁴⁶ In the continued absence of this agricultural element, other policies and action programs lose their enforceability. For example, one action program instructs the county to "[e]ncourage the expansion of agriculture greenbelt areas whenever possible in San Diego County."⁴⁷ Again, this is a fine idea (provided agricultural expansion does not involve the conversion of wild lands), but difficult to implement without an agriculture element or other document that might offer greater specificity and direction.

The Conservation Element contains a wealth of useful information, but, like the Regional Land Use Element, it stops short of creating positive changes to the planning status quo. This document's policies and action programs only hint at what is truly required for the protection of San Diego's natural resources. If the Conservation Element hopes to fulfill its purpose – to conserve natural resources – then it must take a more definitive and coherent stance with respect to residential and commercial development throughout the county.

Open Space Element

The Open Space Element of the County General Plan was adopted in December, 1973 as the first element of the General Plan. Of the three elements discussed in this chapter, it offers the least specificity and the fewest practical policies. The document begins with a disclaimer that can only be construed as an effort, on the behalf of the county, to avoid private land takings accusations:

The Open Space Plan is not a land use plan...It is not the intent of this Open Space Element in any way to preclude the filing or approval of a private

⁴⁶Ibid., 71.

⁴⁷Ibid., 43.

development plan as set forth in County ordinances and policies. It is not the intent of this Plan to restrict or regulate privately owned land in any way except as is necessary to facilitate the public health, safety, and welfare....⁴⁸

With this language setting the tone, it is difficult to determine what the Open Space Element *is* intended for. Some of the element's stated goals include:

"Promote the health and safety of San Diego County residents and visitors by regulating development of lands;" and "Conserve scarce natural resources and lands needed for vital natural processes and the managed production of resources."⁴⁹ Unfortunately, there is little within the text to suggest that the element's goals will be actively pursued.

The term "open space" is defined by the Open Space Element as "any parcel or area of land or water which is essentially unimproved and devoted to an open space use...."⁵⁰ These parcels and areas include land for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety. This definition is quite broad, and consequently allows many types of land to fall under the category of open space. An excerpt from one section of the element, "General County Policy for Future Open Space Needs," further dilutes this definition:

It is the intent of the Plan to recognize that there are many minor open space areas in San Diego County which collectively serve to provide additional significant open space to the County, even though they are not individually large enough to be mapped or described, specifically Aircraft Approach Clear Zones, local parks and private golf courses provide acreage that is basically open and adds to the open character of San Diego County.⁵¹

Critics of the Open Space Element find fault with the inclusion of aircraft zones (which are characterized by intense noise pollution) and golf courses (which are characterized by heavy pesticide, fertilizer, and water use) as open space categories.

⁴⁸County of San Diego, General Plan Part I: Open Space Element, December 1973, 1.

⁴⁹Ibid., 7.

⁵⁰Ibid., 2.

⁵¹Ibid., 4.

One proponent of open space interprets the above policy as a thinly-veiled attempt by the county to cover its weak open space record.⁵² If each vacant lot, playground, and country club adds to the total acreage of county-wide open space, then San Diego's open space program will continue to look good on paper – even in the absence of stronger, more focused policies.

In terms of acreage, San Diego is actually home to large amounts of open space; of the county's 2.7 million acres, over 600,000, or about 22%, are categorized as parks and open space. However, these figures do not necessarily reflect the achievements of the Open Space Element. Almost 550,000 acres of the county's open space acreage fall within the boundaries of Anza-Borrego State Park, a park administered by the state and not the county.⁵³ Another 18,000 acres are on federal lands. But perhaps the most misleading aspect of these numbers is related to development rather than protection of open space. In San Diego, along with many other communities throughout the United States, subdivision applications are often approved only if the developer agrees to dedicate a certain percentage of her land to open space uses.⁵⁴ In this indirect manner, development can create open space.⁵⁵ But while open space dedications provide residential communities with pleasant surroundings, they offer little in the way of wildlife habitat or psychological relief from suburban landscapes. Subdivision dedications should not supplant protection of relatively unaltered open space, nor should they lull the general public into believing that open space is a natural by-product of development.

⁵²Duncan McFetridge, Director of Save Our Forests and Ranchlands, pers. comm., August 12, 1994.

⁵³SANDAG, "Land Use in the San Diego Region," in *INFO* (January-February 1993), 4.

⁵⁴Mandelker, *Land Use Law*, 275; Frederic O. Sargent, *et al.*, *Rural Environmental Planning for Sustainable Communities* (Washington, DC: Island Press, 1991), 96.

⁵⁵The longest and most detailed section of the Open Space Element concerns this process, dubbed "Open Space Design of Private Lands."

San Diego's recent attitudes toward open space protection might best be described as ambivalent, as is partly evidenced by the notable absence of a General Plan agricultural element and by the presence of eight-acre zoning on agricultural preserves, an important open space category.⁵⁶ This ambivalence is further indicated by the text of the Open Space Element, which is punctuated seven times by the statement, "It is not the intent of this category of the Open Space Element to restrict or regulate privately owned land in any way except as is necessary to facilitate the public health, safety, and welfare." County planners and leaders are no doubt aware of the many benefits of open space resources, and that these resources are crucial to the public welfare. Yet they appear unwilling to act upon their awareness. Perhaps this absence of action, of proactive protection for open space, is a response to the perception that San Diegans do not value this amenity. However, the success of the Forest Conservation Initiative in 1993, which passed with 65% of the vote, indicates otherwise.⁵⁷ Since the County of San Diego Planning Department and the County Board of Supervisors both exist to serve the public, rather than the development industry (the group that probably stands to gain the most from poor open space protection), these entities must take seriously their mandate to "facilitate the public welfare" through the protection of open space resources.

A Planning Crossroads

General plans have the unfortunate role of being all things to all people. They must provide for the future growth of the community while ensuring the protection of natural, human, and cultural resources; they must use the values and information of the present to project what will happen in the years to come.

⁵⁶County of San Diego, General Plan Part I: Open Space Element, 21.

⁵⁷Gogek, "Prop. C should be an eye-opener for county."

These are tall orders, and often conflict with one another. However, throughout California, communities have renovated their general plans to better protect their resources without compromising the potential for economic well-being. San Diego County has yet to initiate such a renovation, but an opportunity to do so is fast approaching.

As mentioned in the previous chapter, the San Diego Association of Governments (SANDAG) conducts periodic regional growth forecasts; these forecasts make predictions about population growth and land use in San Diego County. During the most recent forecast, known as the Series 8 forecast, SANDAG discovered that, for the first time in its history, local land use policies could not accommodate the regionwide forecast beyond the year 2005. That is, according to the current versions of the County General Plan and the County Zoning Ordinance, San Diego will run out of "developable" land in ten years.⁵⁸ The obvious solution to this predicament is to revise the General Plan and Zoning Ordinance sometime in the next few years such that they allow for the construction of more homes. One of the Land Use Element's goals actually addresses this situation by encouraging the development of homes in the rural parts of the county: "Assist the private sector in the provision of sufficient housing units in the unincorporated area to accommodate regional population projections...."⁵⁹

Although it is uncertain exactly what changes will be made to the county's planning tools to meet the needs of an expanding population, it is clear that changes must be made. San Diego has always had a tendency to grow outwards, away from the county's core urban areas, so there is cause for concern that any changes made to the General Plan will encourage continued low-density,

⁵⁸SANDAG, memo to interested parties, dated July 29, 1994.

⁵⁹County of San Diego, General Plan Part II: Regional Land Use Element, 4.

horizontal growth. This variety of growth, when compared with denser forms of development, usually consumes more water, a resource in increasingly short supply, and more wildlife habitat, a resource that is already severely compromised. Instead of allowing recent history to repeat itself, the county government is in a unique position to try a new approach to land use planning that is at once rational and ecologically grounded.

This new approach could incorporate an understanding that no community, not even an innovative human one, can live beyond its means indefinitely. With this understanding, the county could re-zone its residential areas to accommodate denser development, rather than directing new development onto currently "vacant" lands. A new approach to land use planning would mean drafting and adopting meaningful zoning designations that actively discourage development throughout the county, especially in areas that are presently subdivision-free. In short, a new approach would entail a shifting of priorities, wherein the requirements of non-human entities – land, water, wildlife – are placed on par with those of humans.

San Diego County has just arrived at a very interesting place in its history. With the pending planning changes that will soon need to be made, the region can opt for one of two forks in an almost literal road. One leads to a place that looks a lot like Los Angeles. The other leads to a less certain destination, as that road has not yet been traveled. This second fork may prove the more challenging of the two, as it is uncharted territory, but it could also bring San Diego to a more livable, rational future. It now remains to be seen what will actually happen.

CHAPTER FOUR: A CRITIQUE OF THE TOOLS (II): WATER PLANNING

"There it is. Take it."

– William Mulholland, head of the Los Angeles Water Company,
upon the opening of the Owens Valley Aqueduct in 1913.¹

With few exceptions, the western third of the United States is a very dry place. Consequently, many of the West's large urban and agricultural areas are made possible only by importing water from wetter regions. This is certainly the case throughout California: The state's three major metropolitan areas (San Francisco, Los Angeles, and San Diego) and its largest agricultural communities (the Sacramento, San Joaquin, Coachella, and Imperial valleys) all rely heavily upon imported water. This reliance has created an enormously complex and bureaucratic system of water management and planning – a system that weaves together federal, state, county, local, and private agencies into a fabric that blankets the state.

This fabric touches upon almost everything that happens in California. The ways in which water is "allocated" – that is, the means by which humans distribute a resource they mistakenly believe they have unlimited access to – affects the size of cities, the success of farms, the comfort of people, and the integrity of wildlife habitat. Indeed, water and its management are intimately related to land and its management, yet more often than not, these two disciplines are dealt with separately. In the previous chapter, a discussion of San Diego's County General Plan suggested that land use planners there have paid insufficient attention to the link between land use and water. Here, a look at San Diego's water planning efforts, particularly on the behalf of the County Water Authority (CWA), will reveal that this connection is only partly recognized by water planning agencies as well. The documents discussed below focus primarily on accommodation of people's water-

¹William Kahrl, *et al.*, The California Water Atlas (Sacramento, CA: The State of California, 1979), 40.

based needs, while they tend to gloss over the larger issues of consumption reduction and the significance of non-human uses of water. In this respect, San Diego's regional water planning, like its land use planning, lacks rationality; it refuses to advance the Donella Meadows' concept of "enough" (in this case, enough consumption of imported water), and does not adequately address the role of ecological factors in the planning process.

Water Planning in San Diego: The County Water Authority

Throughout California, the day-to-day management of water is overseen by more than 3,700 public and private agencies. These agencies all have authority over some aspect of water supply, delivery, use, and treatment.² In San Diego County, the agency in charge of delivering, storing, and treating water is the San Diego County Water Authority (CWA). The CWA, which was organized in 1944 as a public agency, has as its stated mission, "To provide a safe, reliable supply of water for the San Diego region."³ It pursues this mission through its relationship with the Metropolitan Water District of Los Angeles (MWD), from which the CWA receives about 90% of San Diego's water. The CWA takes delivery of water from MWD just south of the Riverside-San Diego County line, and transports it through five large-diameter pipelines to 23 retail water agencies in San Diego County.⁴

The CWA is not in the business of acquiring water so much as it is responsible for ensuring that the MWD delivers sufficient quantities of water to San Diego. In some respects, CWA is at the mercy of MWD; San Diego's water supply is only as reliable as MWD's supply. In times of shortage, agencies that depend upon MWD, like CWA, tend to suffer a greater loss of supply.⁵ But generally, MWD aims

²Kahrl, *et al.*, California Water Atlas, 63.

³Lester Snow, "Agency's role expands to meet region's needs," WaterTalk 7 (Summer 1994): 2.

⁴San Diego CWA, FACT Sheet, 1994-1995.

⁵San Diego CWA, Water Resources Plan, November 1993.

to provide its service area (which includes 16 million people in six counties) with "adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way."⁶ At present, this goal is achieved through two major avenues, neither of which are particularly environmentally responsible: the State Water Project, which pumps water from the Sacramento-San Joaquin River Delta to Southern California via the California Aqueduct; and MWD's Colorado River Aqueduct, which pumps Colorado River water from Lake Havasu in Nevada to Lake Skinner, 242 miles away in Riverside County.⁷ Between these two sources, MWD is able to supply San Diego County with about 400,000 acre-feet per year. In 1990, CWA set a San Diego water record by importing 647,000 acre-feet in one year alone.⁸ The drought of the early '90s forced all of Southern California to curtail its water consumption; in 1994, San Diegans used 413,000 acre-feet of water imported from MWD.⁹

Even though water shortages have inspired CWA and its water districts to employ conservation measures, San Diego consumes an enormous amount of imported water. However, this MWD-supplied water, while not presently in danger of being drastically reduced, is also not as plentiful or reliable as once assumed. Most of San Diego's physical growth over the past 50 years has been fueled by the presence of imported water; assumptions about the future of the region's growth are similarly based upon sufficient quantities of clean, potable water – supplied, of course, by MWD. Meanwhile, MWD's traditional water supplies seem to be shrinking. Currently, MWD annual entitlement to Colorado River water is about 1.39 million acre-feet. A 1964 Supreme Court decision (*Arizona v. California*) limited California's annual diversions from the Colorado to 4.4 million acre-feet,

⁶*Ibid.*, 23.

⁷San Diego CWA, FACT Sheet, 1994-1995.

⁸*Ibid.*, 23.

⁹Lee Willer, Water Resources Planner with San Diego County Water Authority, pers. comm., April 20, 1995.

leaving MWD with approximately 550,000 acre-feet per year – less than half of what urban Southern California is accustomed to. This reduction will go into effect as soon as Arizona decides to divert what the courts have deemed to be its full share of Colorado River water.¹⁰ MWD may also receive less water from the State Water Project, where water pumping is being restricted to provide more intact wildlife habitat in the Sacramento-San Joaquin River Delta.¹¹ Similarly, due to a recent law suit brought against Los Angeles by environmental groups regarding the soaring salinity of Mono Lake, MWD's entitlement to Mono Basin water has dropped from 415,000 acre-feet annually to 295,000 acre-feet.¹²

These reductions, coupled with severe drought conditions, are making CWA rather nervous about the future of its water supplies. As mentioned in Chapter Two, San Diego's population predictions show no sign of tapering off between now and 2015; as the region adds upwards of one million more residents, CWA will need to bolster its current municipal and industrial water supplies. Yet, judging from the status of MWD water, CWA may not be able to rely upon Los Angeles as it has in the past. Indeed, according to CWA's Water Resources Plan (1993), a report detailing various water resource options for the San Diego region, one of CWA's primary goals in the next decade is to increase the reliability and quantity of local supplies. But, as the report states, "even after undertaking an ambitious effort to develop local supplies, the Authority will continue to be dependent upon MWD for a substantial portion of its total water needs."¹³ Thus, CWA has a dual mission for the 21st century: To decrease its reliance on imported water, and to increase the reliability of its imported water.

¹⁰San Diego CWA, Water Resources Plan, 25; Kahrl, *et al.*, California Water Atlas, 45.

¹¹San Diego CWA, "Fact Sheet 2," photocopy.

¹²San Diego CWA, Water Resources Plan, 30.

¹³*Ibid.*, 3.

For the most part, these goals are compatible. Both require implementation of conservation measures and exploration of heretofore “untapped” resources. However, there are levels on which they appear to clash. Throughout the Water Resources Plan, development of local resources and conservation are regarded as the best means to reduce reliance upon MWD water. But, as the Plan explains, such efforts can negatively impact the security of future MWD supplies:

One disincentive to the development of local supplies is the effect the new supply has on the allocation of water from MWD during shortages. Development of local supplies by a member agency which are utilized annually have the effect of lowering the agency's baseline demand for water from MWD...The more dependent an agency is upon MWD, the less incentive there is to develop local supplies due to both the cost and the effect upon water supplies to that agency during a shortage.¹⁴

As MWD policy currently reads, an agency like CWA, which is 90% reliant upon MWD for water, potentially stands to lose water should it opt to become more self-sufficient; this is especially true in times of drought, when CWA would most likely require a greater proportion of imported water to offset local, drought-induced shortages. This brand of reasoning – “use it or lose it” – is reminiscent of many bureaucratic budgeting systems: The more efficient and thrifty an agency is, the fewer resources it will receive in the next budget cycle. Such a dynamic creates incentive to waste; in the case of San Diego's water, there is little room for waste.

Despite this supply-and-demand Catch-22, CWA is clearly interested in strengthening and diversifying its local water sources. Perhaps the agency is aware that, threats of reduced imports notwithstanding, San Diego must begin to look elsewhere for its water besides distant, beleaguered, and muddy rivers. However, many of CWA's plans for fulfilling its mission of reduced MWD reliance are as irrational and potentially thorny as the disincentives discussed above. With the exception of conservation and reclamation measures, many of the plans to increase

¹⁴Ibid., 78.

locally-generated water supplies show little regard for natural, biological, and physical limits on human expansion.

CWA's Approach to Water Development

CWA sees three primary methods of augmenting local supplies: waste-water reclamation, groundwater development, and desalination. Between them, the agency hopes to increase its current supplies by 85,000 acre-feet annually by 2010.¹⁵ Although this quantity of water would certainly reduce the amount needed from MWD – and lower San Diego's reliance upon MWD from 90% to 82% – the means of obtaining it are problematic.

Of the three, reclamation is potentially the least ecologically disruptive method of enhancing local water supplies; however, reclaimed water faces many challenges from the public sector. Essentially, reclaimed water is waste-water that has been extensively treated and then reused for non-potable purposes. As such, it must obtain approval from regulatory and health agencies and from consumers who may be biased about using what they perceive to be “dirty” water. Because much of San Diego's imported water originates in the Colorado River, and is characterized by high levels of dissolved salts, one of the major concerns regarding reclaimed water is its salt content. Due to the presence of salts and other substances, water quality regulations under the federal Clean Water Act could severely restrict the use of reclamation as a means of augmenting groundwater basins or other local water sources.¹⁶ Perhaps even more daunting to CWA's water reclamation efforts than regulatory and public disapproval is a general lack of funding. As a result of these various restrictions, CWA has halved its “established goal of 100,000 acre-feet per year of beneficial reuse by the year 2010,” and is now aiming for 50,000 acre-feet of reclaimed water annually in 2010.¹⁷

¹⁵Ibid., 4.

¹⁶Ibid., 42.

¹⁷Ibid., 43.

Even considering the obstacles involved, reclaimed water may be among the most realistic and promising approaches to securing more water for San Diego. Groundwater development is limited not by funding constraints or human perceptions (variables which are presumably somewhat flexible), but by a real dearth of usable water. The natural geology of the region – massive fractured crystalline rock structures – is not conducive to groundwater accumulation, except in certain fractures. Furthermore, most of the higher quality basins in San Diego County have already been fully developed, while others have been overdrafted and now suffer from water quality problems.¹⁸ Nonetheless, CWA appears poised to make use of all possible groundwater resources: “Although the potential is limited, groundwater resources can be developed to provide an additional increment of supply for the region.”¹⁹ Nowhere in its Water Resources Plan does CWA acknowledge the ecological significance of intact groundwater reserves. Similarly, the problems associated with groundwater overdraft that the Plan identifies concern water quality and the “usability” of groundwater, and not the impacts of lowered water tables upon vegetation and soil communities.

Ecological considerations do crop up in CWA's discussion of desalination, the third preferred method of decreasing San Diego's reliance on MWD water; in fact, these concerns may prevent desalination from becoming the wave of the future. Desalination – the separation of water from dissolved impurities – is often identified as the “ultimate solution to...Southern California's water problems.”²⁰ However, the process by which seawater is transformed into drinking water is a space- and resource-intensive one. First, desalination plants require large parcels of land in order to yield a suitable quantity of water for a region the size of San Diego. Such parcels, especially along the coast, where a desalination plant would most

¹⁸Ibid., 22.

¹⁹Ibid., 45.

²⁰Ibid., 52.

likely be sited, are rare, expensive, and well-protected.²¹ Second, desalination processes use large amounts of heat, and therefore need to be conducted near a power source. But given California's strict air quality regulations and restrictions imposed by the federal Clean Air Act, "it is virtually certain that no new large-scale power plants will be located in San Diego's air basin."²² Third, questions regarding the disposal of desalination by-products, namely large amounts of brine, have yet to be resolved. CWA studies have looked into the feasibility of dumping brine offshore, but it is unclear what the effects of this disposal method would be. Overall, CWA admits that while desalination *appears* to be a viable means of meeting San Diego's future water needs, in reality it may be practically difficult and environmentally destructive to implement. By 2010, CWA envisions about 20,000 acre-feet of desalinated seawater in use to augment other supplies²³ – a small amount relative to the region's projected annual demand of 832,000 acre-feet.²⁴

The Trouble with UseTransfers

Another, potentially more feasible approach to improving supply reliability is the use of water transfers. CWA defines water transfers as "a variety of transactions reallocating water supplies, which...have already been developed and are being used. These transactions generally involve a shift of use of [excess] water from relatively low-value use, usually an agricultural use, to a higher value use, usually municipal

²¹Elaine Moss, ed., Land Use Controls in the United States (New York: The Dial Press/James Wade, 1977), 263.

²²San Diego CWA, Water Resources Plan, 52.

²³*Ibid.*, 53.

²⁴According to CWA, one way of overcoming obstacles to desalination posed by U.S. environmental regulations is to build a plant in Mexico. According to the Water Resources Plan, "In 1991, the Authority...participated in a study which examined the feasibility of building a large power plant and desalination plant in Northern Baja, Mexico. Mexico was chosen as the possible location because less time would have been required for permitting than if the plant were to be constructed in southern California" (52). Indeed, the permitting process would take less time because Mexico imposes far fewer and less stringent regulations than the U.S. on projects of this kind. Currently, plans to construct a Mexican desalination plant are on hold due to economic considerations. However, should the funds become available, there seems to be little that might halt such a project.

and industrial.”²⁵ Supporters of water transfers regard them as an economically sound and ecologically sustainable way of augmenting urban water supplies, as transfers do not require that new water diversion projects, namely dams, be constructed. In *Overtapped Oasis* (1990), the authors extol the environmental benefits of water transfers:

The promise of more wild rivers preserved is just one of the environmental benefits of water marketing. Fallow agricultural lands can revert to native grasslands or wetlands, letting natural flora and fauna repropagate....Since cities consumptively use less water, per acre-foot withdrawn, than irrigated agriculture, major transfers of water to urban users could create more reliable flows for fish, wildlife, and recreation....²⁶

According to proponents of this method, water transfers can do no wrong. But opponents would argue differently. As far as the above boons are concerned, there is a flipside to each: The most viable dam sites in California already have a dam in place, a situation which reduces the chances of more dam construction; similarly, the billions of dollars necessary for dam projects are harder to come by than in previous decades.²⁷ Thus, even without water transfers, California does not appear to be in danger of sacrificing more of its wild rivers. Fallow agricultural lands do indeed stand a chance of reverting to their pre-settlement state, but they also stand a chance of turning into suburbs – a scenario that would truly defeat water transfers' environmental rationale. Finally, the assumption that urban water uses leave more instream flow for fish and wildlife than does agriculture ignores what is perhaps the most compelling approach to utilizing “excess” water – leaving it in rivers. Indeed, the best way to provide more water for salmon, waterfowl, and other non-human beasts is to divert less of it to begin with.

From an economic perspective, water transfers benefit some while hurting others. Urban areas probably stand to gain the most, as they would receive new

²⁵San Diego CWA, Water Resources Plan, 54.

²⁶Reisner and Bates, *Overtapped Oasis*, 58-59.

²⁷Reisner, *Cadillac Desert*.

water supplies without the expenditure associated with new water projects; all of the necessary infrastructure – aqueducts, canals, pipelines – is already in place.²⁸

Farmers who opt to sell their water rights may also gain financially: "Since growers' water costs seldom exceed \$100 acre/foot, shifting from supplying cities with food to supplying them with water can be *very* profitable."²⁹ However, critics of water transfers have expressed concern that transfers could have negative effects on the overall economies of farm communities that choose to engage in large-scale water trades. A study on water transfers conducted by the National Academy of Sciences concluded that "where production in irrigated agriculture is reduced because of water transfers, the farmers that remain may be insufficient to support some or all of the local packing-houses and seed, fertilizer, and machinery distributors...[so] the community becomes less prosperous."³⁰ This conclusion constitutes one argument for pushing water conservation over land fallowing. Generally, the former technique has urban areas paying for on-farm conservation measures, and then utilizing the conserved water; the latter involves an urban area paying farmers not to grow crops, and then utilizing the would-be agricultural water.³¹

While water transfers are indeed a controversial topic in California, they are slowly gaining wider acceptance throughout the state, particularly within the federally-administered Central Valley Project (there is still no state legislation sanctioning water transfers; Assembly Bill 97, the last legislative effort to legalize water transfers at the state level, died in the California Senate in 1993³²). As

²⁸Ibid., 58; Ralph Abascal of California Rural Legal Assistance, letter to Assemblyman Dominic Cortese, dated July 8, 1993.

²⁹Ralph Abascal, "Central Valley politicians sleep while the Senate swiftly moves to transplant the Valley's heart, its water, to urban California," press release dated July 8, 1993.

³⁰National Academy of Sciences, Water Transfers in the West: Equity, Efficiency, and the Environment, 1992: 47, quoted in a letter from Ralph Abascal and William Hoerger to Assemblyman Dominic Cortese, dated July 8, 1993.

³¹Diringer, Elliot, "Water Sales' Flip Side – Local Economic Fallout," San Francisco Chronicle, June 7, 1993.

³²William Hoerger of California Rural Assistance League, pers. comm., March 6, 1995.

transfers find their way into various urban water management plans, like CWA's Water Resources Plan, a crucial question goes unanswered: Is it reasonable that Californian cities should continue to expand exponentially, courtesy of agricultural water? Of course, this question yields its share of controversy as well. Nonetheless, it appears that water transfers carry with them an implicit assumption that it is acceptable, or at least inevitable, for cities to keep on growing. However, this approach to urban water shortage problems, while certainly more innovative and thought-provoking than the traditional dam-and-divert approach, can really only serve as a temporary mitigation measure. As water transfers enable cities to grow larger, municipal water demand will intensify even further, creating ever more dependence upon agricultural water. Such a cycle could conceivably result in urban mega-complexes that consume land almost as quickly as water, and a depressed agriculture industry that finds it can turn a better profit from selling water than selling food.

Perhaps the most ironic aspect of water transfers is that they are predicated on the notion of excess water. In truth, though, there is no such thing as "excess water." All water, before it is "reclaimed" by dams or diverted by canals, serves perfectly viable, indispensable purposes: It feeds vegetation, it provides habitat for fish and wildlife, it regulates local climates, it creates and maintains hydrogeologic balances, and it sustains all life – among other things. That humans place their own consumptive needs above non-anthropocentric uses of water is, of course, arrogant. It is also to be expected. A less predictable course of action would involve returning excess water (in this case, agricultural water that is not needed for crop production in a given growing season) to its highest use – rivers, lakes, wetlands, and watersheds.

As mentioned above, the practice of water transfers is not yet in full swing in California. Only a few trades have transpired, with MWD playing a key role in at least two large-scale transactions. In fact, MWD is currently collaborating with

California legislators on drafting a new water transfer bill to pick up where AB 97 left off two years ago.³³ CWA's role in water transfers is understandably more passive than MWD's; CWA summarizes its stance this way: "As long as MWD aggressively and successfully pursues supplying member agency demands, there are no sound economic reasons for unilateral action to secure independent long-term imported water supplies."³⁴ Despite this statement, San Diego's mayor, Susan Golding, recently asked the city's ten delegates to the CWA board of directors to urge CWA towards conducting water transfers with Central Valley Farmers, independently of MWD. CWA's chairperson, Mike Leach, "praised Golding's initiative as one that fits in with the authority's long-range planning."³⁵ The results of this initiative have yet to unfold, but it seems clear that San Diego County is interested in watering its lawns with Central Valley irrigation water.

Is Conservation the Key?

The methods of augmenting San Diego's water discussed above all share a common trait – they allow San Diegans to ignore the fact that water is actually extremely scarce in Southern California. Reclamation, desalination, groundwater development, and water transfers all focus on acquiring more of a strapped resource; they don't speak to the possibility of using less. Conservation, on the other hand, is the only means of improving supply reliability that involves a reduction in consumption from the outset. This reduction is closely related to how land is used. For example, as noted in Chapter Two, multi-family housing units tend to consume less water than single family homes; similarly, certain kinds of agriculture require less water than others. CWA is, of course, aware of this relationship between land and water; however, as it is not a land use planning agency, CWA is not at liberty to

³³Ibid.

³⁴San Diego CWA, Water Resources Plan, 58.

³⁵Steve LaRue, "Golding urges area to deal for its own emergency water supply," San Diego Union-Tribune, November 24, 1994, B-6.

make policy recommendations to San Diego County concerning land use decisions. Similarly, the County of San Diego has limited control over major water facilities.³⁶ The fact that these two public endeavors, land use planning and water planning, are usually conducted separately from one another – particularly in the areas served by imported water – presents an obstacle to intelligent, ecologically-based planning.

To its credit, CWA is financially and practically committed to incorporating conservation measures into its overall water resources plan. A range of water use efficiency programs, such as conservation rebates and leak detection, help CWA cut down on wasted water; CWA has implemented all sixteen Best Management Practices outlined by the State Water Resources Control Board.³⁷ By 2010, the Authority hopes to conserve about 70,000 acre-feet per year. While this is not an insignificant amount of water, it will not offset the additional 200,000 acre-feet per year that CWA predicts its service area will consume in 2010.³⁸ Since, as CWA's Water Resources Plan indicates, this increase in demand may be difficult to meet with current resources being what they are, it is worthwhile to consider the viability of more innovative conservation measures. This is where land use planning comes into play.

According to CWA's projections for the next 15 years, single family dwellings will consume the majority of San Diego's imported water; of the 832,000 acre-feet demand that CWA predicts for 2010, almost half, or 397,000 acre-feet, is ear-marked for single family homes.³⁹ This sum is more than twice the demand of the next largest category, multi-family residences. The dominance of single family consumption in CWA's demand projections has much to do with the general preponderance – present and future – of single family dwellings in the San Diego

³⁶County of San Diego, General Plan Part X: Conservation Element, December 1975, 19.

³⁷San Diego County Water Authority, Water Resources Plan, 36.

³⁸Ibid., 16.

³⁹Ibid., 16.

region. It also has to do with landscaping: "Single family residences generally contain larger landscaped areas...and require more water for outdoor application in comparison to other types of housing."⁴⁰ In short, the best way to conserve truly significant amounts of imported water, and thus reduce San Diego's reliance upon MWD imports, is to alter the composition of the region's housing stock. But CWA's mission is merely to ensure the availability of an adequate water supply, not to influence land use decisions. Once water consumption is accurately viewed as a factor of land usage, the bureaucratic separation of these planning efforts appears irrational and contrived.

In order for San Diego to avoid a true water crisis, the county should perform a marriage of water and land planning. Such a union would involve some restructuring of both CWA and the San Diego County Department of Planning and Land Use. Although this may seem a daunting task, a planning precedent exists that could possibly offer some guidance. Chapter 7 of the San Diego County Code is known as the San Diego County Groundwater Ordinance, and it is the only county planning policy that attempts to limit human activity based upon the shortage of a vital resource.

The County Groundwater Ordinance: A Good Example?

In October 1991, the San Diego County Board of Supervisors approved and adopted a groundwater ordinance for the eastern two-thirds of the county. This portion of San Diego, which lies outside the service area of the County Water Authority, relies almost exclusively on groundwater resources. The Groundwater Ordinance was drafted upon the realization that "groundwater reserves and annual replenishment are significantly less than previously considered,"⁴¹ and that recent

⁴⁰Ibid., 12.

⁴¹County of San Diego, Regional Growth Management Plan, June 1978, Appendix V, 1.

development pressures in unincorporated San Diego County would likely degrade groundwater basins in the absence of appropriate restrictions.⁴² Thus, the ordinance has the purpose of establishing “regulations for the protection, preservation, and maintenance of this resource”⁴³ – a purpose that bears directly on land use. In fact, the county's Groundwater Policy, which in 1978 laid the groundwork for the ensuing ordinance, reads, “The Board of Supervisors recognizes the need to formulate *land use policies based on long-term groundwater conditions* which could serve as the guide for establishing maximum densities of the rural foothills, mountains, and desert regions of San Diego County....”⁴⁴

The heart of the Groundwater Ordinance is the groundwater investigation. The county, which in this case is represented by the director of the Department of Planning and Land Use, will only approve subdivision and other development applications if a groundwater investigation finds that “groundwater resources are adequate to meet the groundwater demands of the project.”⁴⁵ If the application in question is for a large scale, water intensive project, such as a golf resort, the investigation must determine whether the groundwater basin is capable of supporting both the project and the entire basin “if developed to the maximum density and intensity permitted by the general plan.”⁴⁶ Presumably, if the investigation yields negative results, the project will be denied – even if the general plan indicates that the project is feasible based purely on zoning considerations.

Other water-based restrictions imposed by the Groundwater Ordinance are residential density controls and well tests. Density controls restrict minimum lot sizes based upon the average annual precipitation in a given area. For example, if a

⁴²Board of Supervisors of the County of San Diego, Ordinance No. 7994 (Groundwater Ordinance), 1.

⁴³*Ibid.*, 1.

⁴⁴County of San Diego, Regional Growth Management Plan, Appendix V, 1 (emphasis added).

⁴⁵Board of Supervisors of the County of San Diego, Groundwater Ordinance, 6.

⁴⁶*Ibid.*, 2.

tract of land receives less than nine inches of rain per year, and does not fall within a water service agency's boundaries, the minimum lot size (that is, the smallest portions the tract can be subdivided into, with a single family home occupying each portion) would be 20 acres. The lot size decreases as annual precipitation increases; an area receiving more than 21 inches of rain can be subdivided into 4-acre lots. These lot sizes refer to the number of acres needed for replenishing half an acre-foot of groundwater per year.⁴⁷ Well tests can be administered in conjunction with density controls, and consist of testing a representative number of lots, usually 10% of the total number of proposed lots, for the presence of a reliable well site. The Groundwater Ordinance calls for testing on lots "which appear to have the least access to a viable groundwater supply," in order to avoid or predict a worst-case groundwater scenario.⁴⁸

These two efforts, along with the larger-scale groundwater investigations, are designed to prevent irreversible groundwater overdraft and degradation. And because groundwater resources are somewhat scarce in rural San Diego County, these efforts may also serve as a means of restricting development. Thus far, however, the ordinance has done little to actually prevent development. Thanks to inaccurate groundwater data, some large subdivisions were approved and built, but are now running low on water.⁴⁹ This is especially true of the area around Borrego Springs, in the northeastern part of the county. Borrego Springs and the surrounding valley have been subject to heavy development pressures for the past decade or so; some have referred to this area as the next Palm Springs. Consequently, the worst overdraft situation in the county exists in Borrego Valley,

⁴⁷Ibid., 5.

⁴⁸Ibid., 6.

⁴⁹Eric Gibson, Assistant Groundwater Engineer with San Diego County Department of Planning and Land Use, pers. comm., November 21, 1994.

and the county now handles development applications there with extreme caution.⁵⁰

In addition to suffering from bouts of inaccurate data, the Groundwater Ordinance also contains some exemptions. Proposed subdivisions with less than four lots are generally not required to comply with the Groundwater Ordinance. While four lots does not a suburb make, this exemption can have detrimental effects if several such subdivisions are strung together in a piecemeal fashion. Also, most agricultural land uses are exempt from the ordinance, as are projects that can prove, without a groundwater investigation or well test, that regional groundwater resources are plentiful and reliable.⁵¹

Although the Groundwater Ordinance provides the development and agricultural communities with some loopholes, the concept behind the ordinance is extremely forward-thinking: In the absence of adequate resources, human development must be restricted. In the unincorporated area of San Diego County, where the scarcity of groundwater is an accepted fact, such a concept is merely common sense.⁵² Yet in the western third of the county, the scarcity of *imported* water is not an accepted fact – so the concept of limiting development based on such scarcity may not strike most people as sensible.

MWD's aqueducts and pipelines have helped to create the illusion that water is not a rare thing in San Diego. This illusion may stand in the way of drafting county-wide land use policies that consider and incorporate ecological factors. But since this is just an illusion, it can be dispelled. The task of dispelling will fall to those who perpetuate the myth of endless water – the Metropolitan Water District, the County Water Authority, and the County of San Diego. To borrow from the

⁵⁰Ibid.

⁵¹Board of Supervisors of the County of San Diego, Groundwater Ordinance, 7.

⁵²Common sense notwithstanding, there are, of course, political entities – farmers among them – who would like to see the Groundwater Ordinance repealed or changed (Eric Gibson, pers. comm., November 21, 1994).

language of Twelve-Step recovery programs, the first step towards recovery is admitting that a problem exists. Once San Diego comes to terms with the fact that it is addicted to imported water, then it can move forward on the path to rational planning. The County Groundwater Ordinance offers a glimpse of what this admission might look like for the rest of the county. Even with its flaws and loopholes, the Groundwater Ordinance comes closer to bio-rational planning than any other policy, ordinance, or plan endorsed by the county of San Diego.

CHAPTER FIVE: BIO-RATIONAL PLANNING

Simple ain't easy.
– Thelonius Monk

The previous chapters have described San Diego's planning bind. The question posed by this bind concerns how millions of people might live without causing the extirpation of other species, further conversion of farmland, or increased exploitation of distant water sources. The answer appears straightforward enough – San Diegans must decrease their demand for water and land. This decrease will be linked to slowing – and in some cases stopping – growth, and improving resource efficiency. A critical means of pursuing this solution is through land use planning reform.

The challenges of planning reform deserve careful attention. How can county-wide planning efforts constructively alter the relationship between human and non-human residents of San Diego? One option is the implementation of bio-rational planning – formal, institutionalized planning that is shaped by consideration of ecological factors. Such planning would incorporate an understanding of physical, natural limitations into the all-too human constructs of general plans and zoning ordinances. At its core, bio-rational planning questions basic assumptions, such as “there will always be enough water,” “humans do not need biodiversity,” and “golf courses provide an adequate source of open space.” Bio-rational planning, and the planners that implement it, must move beyond these illusions to an acceptance of Donella Meadows' concept of “enough.”¹

Bio-Rational Planning: Intelligent Approaches to Ecologically-Based Planning

What I have chosen to call bio-rational planning is not entirely new. In 1991, Sargent *et al.* authored a book entitled *Rural Environmental Planning for*

¹Donella Meadows, *The Neighborhood Works*, reprinted in *Utne Reader*.

Sustainable Communities; the goal of rural environmental planning is "to establish sustainable rural communities by balancing economic development and environmental protection in accord with the carrying capacity of the land."² Also in 1991, the Ecological Life Systems Institute of San Diego published a case study in *Ecologically Integrated Planning (EIP)*, wherein EIP is defined as "a pro-active planning method based on the premise that human built infrastructures are ultimately dependent on the ecological foundation upon which they literally rest."³ More specifically, many municipalities, including the county of San Diego, recognize in their planning documents the presence of ecologically constrained areas and areas of critical environmental concern; lands subject to these designations are generally protected from normal development pressures. In Vermont, Act 250 implemented statewide, comprehensive planning policies, the first of their kind in the mainland United States. These policies, while not entirely resource-based, include growth-restriction measures designed to maintain the rural character of the state.⁴

Although many of the ideas behind bio-rational planning have been discussed and debated for several years in San Diego, no attempts have been made, by the county planning commission or any other planning entity, to draft or implement a comprehensive, ecologically-based planning tool. This is not to say that San Diego is devoid of environmental planning; however, the tools that are currently used to carry out this planning – floodplain overlay zones, park dedication ordinances, open space easements, and the like – result in inconsistent and

²Sargent, Frederic O., et al., Rural Environmental Planning for Sustainable Communities (Washington, D.C.: Island Press, 1991), 3.

³Bell, Jim, et al., Ecologically Integrated Planning: A Case Study (San Diego: Ecological Life Systems Institute, 1991), iv.

⁴Moss, Elaine, ed., Land Use Controls in the United States (New York: The Dial Press/James Wade, 1977), 264.

fragmented protection of natural resources.⁵ As this region enters the 21st century, as it grows increasingly concerned about its future water supplies, and as it faces a shortage of "developable" land, San Diego is likely to find itself in *need* of a new, cohesive approach to land use planning, such as bio-rational planning. Bio-rational planning has the following objectives:⁶

- restriction of new construction in currently undeveloped areas; along these lines, undeveloped lands should be designated "natural services lands," a title that recognizes the importance of these lands when they are allowed to remain in a relatively natural state;
- adoption of a strong, preservation-minded approach to wildlife habitat protection, including policies that unequivocally protect the rights of all species to flourish, not just the rights of humans to live in a consumptive or wasteful manner;
- restriction of landscape-intensive construction throughout the county, in the interest of preventing unnecessary land conversion and water consumption;
- protection of agriculture, via zoning ordinances and local preferential tax assessments, such that conversion of farmland to residential land is actively discouraged or restricted;
- implementation and enforcement of a county-wide water-consumption ordinance, fashioned after the County Groundwater Ordinance, that prohibits water-intensive development or development that fails to meet the most stringent water conservation measures.

These may appear to be lofty goals, but they are not unattainable. All of the planning mechanisms required to implement the above objectives already exist; the challenge of implementation will stem not from the need to create new infrastructure, but from the process of incorporating new values and priorities, such as those reflected in these goals, into old plans, policies, and ordinances. This incorporation must take place in a context of humility and compassion. Bio-rational planning is, in essence, intelligent planning simply because it recognizes

⁵Environmental Development Agency, "Preliminary Open Space Element of the San Diego County General Plan (Unincorporated Area Only)," Open Space Task Force, April 1973: 45-46.

⁶For specific recommendations regarding bio-rational planning's goals, see Chapter Six, "Conclusions and Recommendations."

the very basic and widely accepted notion that humans are part of and reliant upon their physical environment. To deny this connection between humans and the natural world, as many planning tools have, is self- and other-destructive. Los Angeles, where humans have gone to great lengths to transform their natural surroundings (thereby denying their link to these surroundings), remains the foremost example of the effects of pro-development planning.

An important part of making this connection between humans and non-humans is related to the language we use to describe the world around us. In San Diego County, land that has not been built upon and that is not being farmed is usually labeled "vacant," "undeveloped," or "developable." Each of these terms reflects a relationship between humans and land; by referring to these tracts of land merely as potential receptacles of future human development, San Diegans, specifically county planners, neglect the very vital services provided by such land in the absence of master-planned subdivisions. When land is undeveloped, it does not just sit there, awaiting the first back hoe that rolls by; on the contrary, it often supports complex plant and animal communities, participates in watershed systems, and provides people with aesthetic relief from a predominantly urban landscape. If "vacant" and "developable" lands were thought of as "natural service lands," a term that more accurately describes the defining characteristics of unpeopled landscapes, the chances are greater that they will be valued in their present, unsubdivided state rather than perceived as useless-until-developed.

Ideally, a biologically-based planning tool would challenge county residents to question, and perhaps modify, their assumptions about human/non-human interdependencies. It might also ask these residents to re-think their definition of "home." In 1995, most people characterize their communities in terms of municipalities, such as cities, counties, school districts, etc. These are usually political entities, and are often delineated by artificial or arbitrary boundaries. While

natural features, like rivers or mountain ranges, may divide one municipality from the next, such divisions are generally not informed by ecological functions – for example, ecosystem dynamics, watersheds, or climate. When a community begins to define its boundaries in terms of these functions, it subscribes to a school of thought called bio-regionalism. Proponents of bio-regionalism suggest that this is a more viable and sustainable way for humans to organize themselves, when compared with traditional, municipal delineations, as it emphasizes regional carrying capacities and asks communities to make intelligent use of locally-available resources.⁷

Bio-rational planning meshes well with this approach to community definition since it, too, stresses the importance of a region's carrying capacities and physical limits. The problem remains that, even if bio-rational planning were to gain acceptance in San Diego, the county in question is still a political entity arbitrarily carved into the southwest corner of an even larger political entity. This situation seems to render attempts at true bio-regionalism null and void. Indeed, thanks to the means by which Americans have opted to "divvy" up much of the North American continent, widespread bio-regional delineations have a "pie in the sky" quality about them. Political boundaries notwithstanding, people may still learn to regard their communities as dependent upon specific and indispensable ecological functions. And one means of fostering this kind of perspective is through the implementation of ecologically-based, resource-oriented planning tools. Bio-rational planning can play a significant role in creating a more grounded, less arbitrary relationship between humans and that which they call home.

⁷One manifestation of bio-regionalism is an individual's or community's choice to eat food that is locally-grown. For example, a practitioner of bio-regionalism living in western Montana would not purchase strawberries during January, as this region's climate is incapable of yielding strawberry crops in the winter.

Obstacles to Bio-Rational Planning

In a vacuum, it is relatively easy to toss around terms like bio-regionalism, bio-rational planning, and carrying capacity. But planning does not take place in a vacuum; on the contrary, it is executed in a context of human needs and desires, political power, and economic interests. San Diego's traditional planning tools, such as the General Plan and the County Zoning Ordinance, tend to cater to this context: Human needs and desires receive top priority, while natural factors are treated like second-class citizens. Similarly, these tools were designed with the understanding that land is a very valuable commodity in Southern California, but not because of the natural services discussed above; land in San Diego is economically valuable because of its ability to be used by humans, whether for housing, industry, recreation, or agriculture. Thus, land use planning tools generally do not have the aim of *preventing* land from being used; if land is not "usable," its value decreases, which is considered to negatively impact a region's economy. Any land use planning tool that threatens the conventional value of land and consequently the surrounding area's tax base, will probably not be very popular. So, in order for something along the lines of bio-rational planning to gain support, it will be necessary to highlight the monetary and non-monetary value of preserving natural services lands.

Even if individuals become convinced of the importance of allowing land to remain in a natural state, they may object to the prospect of being prohibited from dealing with their property as they see fit. It is likely that an ecologically-based planning tool would require considerably more regulation than currently exists, and as it stands, property-owners contend that ordinances and plans already ask them to relinquish too much power. I recently attended a public scoping meeting held by the U.S. Fish and Wildlife Service in San Diego; there, I had the opportunity to meet a local land owner whose property will be affected if a proposed habitat conservation

plan is approved.⁸ About 50% of her land falls within the boundaries of the proposed plan, and as such could be restricted from future development. Although this land owner was also a biologist, an environmentalist, and an avid supporter of habitat conservation, she objected to the restrictions that would be placed on half of her property; her objections related to the future monetary value of her family's land, as it would presumably be worth less if its development was prohibited due to the proposed habitat conservation plan. Despite her support for the plan in general, she felt that her family was already being "regulated to death," and that even more plan-imposed regulations would be intolerable.

The property owner voiced her concern about restrictions, regulations, and prohibitions as part of another thorny issue: takings. A taking occurs when a governmental body restricts the use of private property such that the property owner realizes a loss of profit or income.⁹ The habitat conservation plan, if determined by a court to sufficiently reduce a property's value, could constitute a taking, and the property owner would then be entitled to just compensation from the regulating governmental body. An ecologically-based planning tool might attract the same criticisms as the proposed habitat conservation plan, but to an even greater degree, since it would restrict development throughout the entire county.¹⁰ The chances are good that the County of San Diego lacks the resources to

⁸The U.S. Fish and Wildlife Service, in conjunction with the City and County of San Diego and ten other municipalities in San Diego County, has prepared a draft Multi-Species Conservation Program (MSCP) for southwestern San Diego County. The MSCP draft Environmental Impact Statement/Environmental Impact Report will be completed in May 1995.

⁹David B. Firestone and Frank C. Reed, Environmental Law for Non-Lawyers, 2nd ed. (South Royalton, VT: SoRo Press, 1993), 121.

¹⁰Interestingly, one of the stated purposes of the MSCP is to *facilitate* development in southwestern San Diego County. The MSCP provides for mitigation measures that allow developers to incidentally "take" sensitive species and/or their habitat without entering into protracted and expensive legal battles. A "benefit" of the program, if approved, will be an end to the "development disruptions" from which San Diego is apparently suffering. See Executive Summary of MSCP, "No Plan Alternative."

compensate countless land owners who would be able to prove that bio-rational planning amounts to a taking of private property.

Addressing land owners' concerns about over-regulation and takings, especially with respect to a biologically-based planning tool, is difficult. The difficulty of this task stems largely from the fact that preservation of natural communities and the rational consumption of resources – particularly scarce ones like water – have little to do with turning a profit. Meanwhile, contemporary land use planning tools and traditional ideas about land ownership are often closely related to making money. However, this dissonance is not irreconcilable: Although bio-rational planning is primarily concerned with injecting natural resource considerations into the planning equation, it has economically viable side effects. In short, this brand of planning is not just biologically rational, it is also financially sensible, for reasons that are detailed below. But in order for bio-rational planning's economic benefits to be realized, people – land owners, county commissioners, planners, and all other decision-makers – may need to revamp their notions of “value.” As mentioned above, convention has it that land is valuable because of what people can do to it. Bio-rational planning has it that land is more valuable when people leave it alone. If this value is made apparent to land owners, perhaps concerns over regulations and takings would fade to some extent.

The Boons of Bio-Rational Planning

Perhaps the foremost goal of a biologically-based planning tool is to change the patterns of resource-intensive sprawl that have come to characterize many urban and suburban landscapes. This goal is not a radical one; urban sprawl is widely thought of as undesirable, expensive, and the result of short-sighted planning. In January 1995, Bank of America, the largest bank in California, co-produced a report that denounces sprawl as a “luxury” that California can no longer

afford.¹¹ Bio-rational planning can provide the means for reducing the costs exacted by this luxury, through curtailing development and redirecting growth away from presently undeveloped lands. The benefits of this planning tool, considered below, touch upon the areas of water resources, species diversity, ecological functions, agriculture, San Diego County's quality of life, and social justice.

Water Resources

In Chapter Two, San Diego's growth patterns were discussed as a function of imported water. The chapter concluded that without water purchased from the Metropolitan Water District, San Diego would have been unable to grow and expand as it has. Now this region is 90% reliant upon imported water, a resource that is none too reliable itself. The pattern of growth that emerged and subsequently dominated San Diego after World War II – urban sprawl – further perpetuates this reliance, as low-density, single family development tends to consume more water than other forms of residential development.¹² Bio-rational planning would limit the construction of low-density, landscape-intensive housing; concurrently, it would favor multi-family residential development and protect agricultural lands and wildlife habitat from conversion to residential subdivisions. Although such a shift in emphasis (toward higher density development and preservation of farmland and wildlands) has numerous benefits, one of the more readily apparent advantages is a reduced reliance upon imported water. In the region outside of the County Water Authority's service area, this shift could strengthen the efforts of the County Groundwater Ordinance while helping to prevent a widespread groundwater overdraft situation.¹³

¹¹Bank of America, *et al.*, "Beyond Sprawl: New Patterns of Growth to Fit the New California," January 1995, 1.

¹²San Diego CWA, Water Resources Plan, November 1993, 12.

¹³My assumption that reduced reliance upon imported water and avoidance of groundwater overdrafts would both be perceived by San Diegans as benefits is premised on CWA's Water Resources Plan, the San Diego County Groundwater Ordinance, and the San Diego County General Plan.

The relationship between anthropocentric land use and water consumption is fundamental: Types of land use dictate rates of water consumption. However, San Diego County's current planning mechanisms seem unwilling to recognize this connection. Until county planners make an effort to regulate land usage in the context of water consumption, San Diego will continue in the planning tradition of the past several decades – a tradition which has not adequately considered water scarcity. Indeed, thanks to imported water, the San Diego region has had little cause for concern regarding water scarcity. Bio-rational planning would break from this tradition in a few ways. On a conceptual level, it would reject the complacency that is engendered by imported water; it would officially acknowledge the fact that imported water creates an unfortunate illusion of plenty, and that San Diego's contribution to the degradation or elimination of many Western watersheds and river systems (due to the infrastructure and processes associated with imported water) can no longer be ignored. However, because San Diego County is home to 2.6 million people, with another million slated for arrival during the next 20 years, imported water is a fact of life. Barring a devastating and contagious disease or other form of obliteration, San Diego's population will always be heavily dependent upon imported water. The objective at this point in history must be to keep that dependence to a minimum.

On a practical level, bio-rational planning would break from tradition by mandating land use practices that are as water-conservative as possible. These practices, which are detailed in the following chapter, would reflect the understanding that water and land are not separate and that their anthropocentric uses cannot be planned independently of one another. With this understanding, these land use practices would include limiting all forms of commercial and

residential development, especially low-density single family dwellings; requiring the use of water conservation techniques and technology in both the private and public sectors; and, in the agricultural arena, promoting the cultivation of the least water-intensive crops possible.¹⁴ Essentially, bio-rational planning's pragmatic objective, with respect to water resources, is to reduce the county's water consumption rates through forward-thinking land use planning. In the case of groundwater, this lowered demand would allow more water to remain in aquifers and underground basins. It would also aid in the maintenance of soil moisture. Soil's water content is one of the factors affecting populations of soil micro-organisms; these micro-organisms provide the key to healthy, fertile soils. Thus, if groundwater basins are carefully managed to ensure that anthropocentric uses do not reduce soil moisture content, San Diego will likely reap the benefits of healthier soils – a pre-requisite to both robust plant communities and sustainable agriculture.

In the case of imported water, it is difficult to predict whether a reduction in San Diego's demand would have any positive impacts upon the condition of the watersheds that currently supply Southern California. With 1,200 dams in place throughout California,¹⁵ one could argue that the damage has been done and that San Diego's efforts to cut back its water consumption will merely free up more water for other urban or agricultural uses. Nonetheless, if San Diego were to aggressively pursue a policy of responsible, rational water use, coupled with land use planning that acknowledges physical limits, the county would, at the very least, set a precedent for a part of the world that is notorious for its very irrationality. And at

¹⁴As it stands, San Diego County's agricultural industry is considered to be 85% efficient, an efficiency level thought to be the highest in the world. This is largely due to the use of innovative conservation measures, namely drip irrigation systems (CIC Research, "An Agricultural Water-Use Profile of San Diego County," August 1993, 14). Presumably, the cultivation of non-water-intensive plants would raise San Diego's efficiency level even higher.

¹⁵Reisner, Marc, Cadillac Desert (New York: Viking Penguin, Inc., 1986), 333.

best, San Diego County could work towards passing state-wide legislation which ensures the use of conserved water to maintain instream flows.

Species Diversity

The primary cause of species extinction, extirpation, and decline in Southern California is habitat loss, and the primary cause of habitat loss is development.¹⁶ In San Diego County, many "native vegetation communities have experienced significant losses from development. As a result, San Diego County has a greater number of threatened and endangered species than anywhere in the continental U.S."¹⁷ The causal relationship here is similar to the one between water consumption and development: Just as more development will result in increased water use, more development will also lead to increased habitat loss and perhaps even more threatened and endangered species. If San Diego County's human population intends to prevent the further loss and endangerment of the region's plants and animals, then the most direct means of pursuing this goal is through stemming the tide of development. Bio-rational planning, because it is principally concerned with protection of natural resources through restriction of real estate development and land conversion, would play a large and significant role in the county's efforts to reverse species loss.

That San Diego is concerned about its rank among mainland U.S. counties with the greatest number of threatened or endangered species is evidenced by the Multiple Species Conservation Program (MSCP), an ambitious habitat conservation planning program for the southwest portion of San Diego County. MSCP is being designed in conjunction with a Multiple Habitat Conservation Program for the northwest part of the county and a Multiple Habitat Conservation/Open Space Program for the eastern, unincorporated area. All three habitat conservation

¹⁶The City of San Diego, "Public Review Draft, Multiple Species Conservation Program Plan Executive Summary," March 1995, 2.

¹⁷Ibid., 2.

planning programs will supposedly mesh with similar efforts in Orange and Riverside counties, while the county-level programs fit into the larger framework of California's Natural Community Conservation Planning program.¹⁸ MSCP, which will cover 581,649 acres if it is approved, is considered by planners and biologists to be the most challenging of the three San Diego habitat conservation programs because it overlaps with the county's most urbanized areas.¹⁹ If MSCP is approved, which appears likely despite urban-oriented challenges, it will go into effect during the next few years.

On the surface, MSCP looks like a good idea: Its intent is to "plan for habitat preservation to protect [the] region's biodiversity, create an interconnected open space system of native habitats and allow for economic development."²⁰ While these are worthy goals, they are goals that a well-written and responsibly-executed general plan would pursue from the outset. However, because San Diego's General Plan has, since the real estate boom of the 1970s and '80s, consistently failed to protect biodiversity and other such necessities, a crisis situation has emerged that apparently requires the intervention of a complex, expensive habitat conservation program. MSCP, which would be carried out by the U.S. Fish and Wildlife Service, California Department of Fish and Game, the County of San Diego, the City of San Diego, and ten other local jurisdictions, would cost somewhere between \$433 million and \$751 million over 30 years.²¹ In the larger scheme of things, these are not enormous sums. However, they are unnecessary; if the General Plan adequately addressed biological concerns, there would be no need for this stop-gap measure. Implementation of a bio-rational General Plan would also require significant

¹⁸Silver, Dan, "Conservation Planning in Southern California: A Realistic View," photocopy.

¹⁹The City of San Diego, "Public Review Draft, MSCP Plan Executive Summary," 2.

²⁰*Ibid.*, 1.

²¹*Ibid.*, 10.

financial input, but because such planning would utilize San Diego's existing planning infrastructure, long-term costs would likely be less than MSCP's.

In addition to its cost and the fact that it would operate outside of San Diego's planning paradigm (thereby having no impact on the County Zoning Ordinance), MSCP would serve to encourage real estate development. One of the program's three stated objectives is to "[e]nable and facilitate economic development of the region, including development of public and private projects, on lands not designated for habitat preservation."²² In its economic analysis of MSCP, the Executive Summary of the MSCP Plan states that under a No Preserve alternative (that is, should MSCP not be implemented), "the region will continue to be threatened by and experience large and persistent development disruptions...."²³ Apparently, the designers of MSCP value development and regard limitations on development, such as those brought about by endangered species protection, as problematic. This pro-development stance could cause MSCP to be growth-inducing in the areas outside of the plan's boundaries; surely a plan that sets aside parcels of land as wildlife preserves in an effort to facilitate the development of everything else cannot be good for biodiversity. When perceived in a certain light, the MSCP plan can be construed as little more than a loophole that allows developers to avoid costly endangered species litigation. The Executive Summary of the MSCP Plan phrases it this way:

The region's opportunity for economic growth hinges on new public and private investment in capital and technology. In the absence of a regional habitat conservation plan, businesses and investors probably would view San Diego as a risky destination for investment dollars, *given unresolved environmental conflicts and the prospect of regulations restricting development each time another species is listed.*²⁴

²²Ibid., 1.

²³Ibid., 18.

²⁴Ibid., 19. (Emphasis added)

As long as San Diego's political process is skewed toward promotion of real estate development, the region's natural resources will remain at risk. Similarly, as long as this same process equates ecologically-based planning efforts with crisis scenarios, such as endangered species and disappearing habitat, little pro-active, forward-thinking resource protection can take place. Protection of biological resources must be an ingrained and permanent part of the planning process, not merely a panic-stricken afterthought. Bio-rational planning could provide San Diego with an established, long-term means of preserving species, their habitats, and the ecological functions which characterize those habitats. By directly affecting land use planning through the General Plan and local zoning ordinances, and by refusing to capitulate to the development and construction industries, bio-rational planning would likely prove a more effective tool than MSCP for the protection of biodiversity.

General Ecological Functions

Although San Diego's urban sprawl is often criticized for its effects on water consumption and wildlife habitat, there are several other negative impacts associated with sprawl that may be less obvious. Among these are diminished watershed health, increased flooding, and increased air pollution.²⁵ Because all of these problems arise in the face of poorly-planned growth, such as urban and suburban sprawl, a planning tool that restricts space-intensive development – particularly development of natural services lands – would assist in the protection of San Diego's ecological functions.

Recharge areas for San Diego County's watersheds are found almost exclusively in the foothills and mountains of the Peninsular Range, which cuts

²⁵Bank of America, *et al.*, "Beyond Sprawl: New Patterns of Growth to Fit the New California;" Sierra Club California, "Policy Before Planning;" California Seante Office of Research, "Managing Growth in California: A Blueprint for Economic and Environmental Recovery," December 1993.

across the county in a northwest to southeast fashion. These same foothills and mountains, known as the East County and North County East Major Statistical Areas for planning purposes, have been experiencing relatively high rates of growth – both in terms of population and housing – since 1990.²⁶ As these areas become more populated, and as more subdivisions spring up where trees, shrubs, and other vegetation once stood, the county's most productive watershed will become compromised. In order for a watershed to function properly, streams, creeks, and lakes must remain intact; development may damage watersheds by draining, polluting, or otherwise stressing these water bodies. Because San Diego's watersheds aid in groundwater recharge and play a key role in the cleansing and replenishing of surface water, their condition comes to bear directly on the quality and quantity of local water sources. This water is extremely valuable to both the human and non-human communities of San Diego; watersheds should, then, receive protection in accordance with their value.

One of the effects of degraded watersheds is an increase in the frequency and/or severity of flooding. Flooding is also likely to intensify in areas that have been heavily developed. Where permeable soil and vegetation once absorbed rainfall and facilitated the infiltration of water into the ground, developed areas replace these functions with paved roads, concrete sidewalks, tiled and sloped roofs, and storm drains – all of which tend to exacerbate flooding.²⁷ The presence of native vegetation also helps to regulate local climates; the uprooting of plants to make way for housing complexes may have subtle but cumulative impacts on temperature and humidity. Although little can be done now about the periodic flooding brought on by an over-abundance of pavement, save the unlikely reclamation of that pavement by natural communities, there are means of

²⁶SANDAG, "January 1, 1994 Population and Housing Estimates," in INFO, September-October 1994, 6.

²⁷San Diego County General Plan, Part X: Conservation Element, December 1975, 29.

preventing the situation from worsening – namely, slowing the rate of development throughout the county.

As is evidenced by the greater Los Angeles area, a particularly detrimental effect of unbridled growth is air pollution. San Diego's air quality is considerably better than in the airsheds to the north, but smog is still an issue here; the region exceeded state standards for ozone on 52 days in 1991, due to local sources.²⁸ One of the primary contributors to air pollution throughout Southern California, including San Diego, is automobile emissions. During the past decade, car travel in the San Diego metropolitan region has been increasing at a rate higher than population growth.²⁹ Should this trend continue, and it is expected to, San Diego's airshed may begin to look more and more like Los Angeles'.³⁰ This trend is linked directly to the trend of urban sprawl: The further away from employment and commercial centers people live, the further they will need to travel, and the more auto emissions will be released into the atmosphere. Compact, higher-density development can help reverse both of these trends. Air quality, while heavily impacted by fossil fuel combustion, is also a function of vegetative ground cover. As trees, shrubs, and other plants are removed due to development, less vegetation remains to perform the crucial task of carbon dioxide uptake. Thus, as a region becomes more heavily developed, air quality will likely suffer thanks to both increased car travel and decreased ground cover.

Slowing the rate of development in San Diego County, while simultaneously directing new construction away from natural services lands, cannot repair the ecological functions that have already been compromised. However, these efforts can help prevent future degradation of San Diego's life-sustaining systems. That

²⁸SANDAG, "Regional Growth Management Strategy," January 1993, 13.

²⁹Ibid., 19.

³⁰SANDAG has projected that metropolitan San Diego's auto traffic will double by 2005; Tim Palmer, "A Great Number of People," in Tim Palmer, ed., California's Threatened Environment.

watersheds, vegetation, and air quality are among the first casualties of maldevelopment should be reason enough to change the way San Diego grows and develops. An ecologically-based planning tool will need to recognize this and enact protective measures that ensure the long-term viability of ecological functions. Because functions associated with watersheds and vegetative ground cover often transpire in areas that may not be considered constrained, sensitive, or threatened, these measures must protect natural services lands regardless of their abundance. The benefits of intact, functional natural systems to all organisms are too great to blindly sacrifice in the name of growth, no matter how commonplace those systems may be. However, considering San Diego's population projections for the next two decades, the county will be hard pressed to implement a staunch no-growth policy. Perhaps instead, the county should recognize its two-fold mandate – to house people and to maintain ecological functions – and plan for development that will inflict the least possible harm on natural services lands.

Agriculture

Agriculture can be an excellent investment for any community, particularly when it is pursued intelligently and sustainably. In San Diego County, agriculture constitutes a \$1 billion dollar-per-year industry; once indirect economic activity is factored into the equation, San Diego's agriculture contributes \$2.3 billion to the county's economy, or about 2.6% of total county sales.³¹ In addition to its monetary contribution, agriculture often provides the region with open space resources, wildlife habitat, and a buffer between urban and rural communities. Yet for all its benefits, agriculture currently receives little in the way of codified protection from the County of San Diego. As discussed in Chapter Three, the County General Plan does not include an agriculture element; furthermore, agricultural preserves

³¹CIC Research, "An Agricultural Water-Use Profile of San Diego County," prepared for San Diego County Water Authority, August 1993, iv; County of San Diego Department of Agriculture, Weights and Measures, "Annual Crop Report," 1993, 2.

(parcels of land that are deemed high-quality farmland) are zoned at a minimum parcel size of eight acres,³² an acreage that has been criticized for being too small to support many forms of commercially-viable agriculture.³³ Bio-rational planning would offer protection to San Diego's agricultural resources by implementing an agriculture element as part of the General Plan, by increasing the minimum parcel size of agricultural preserves, by establishing firm urban growth boundaries that would prevent urban encroachment onto productive farmland, and by creating a county-level preferential tax assessment program to supplement the efforts of the state-level Williamson Act.

While an ecologically-based planning tool would protect and promote existing agriculture, it should not encourage the conversion of undeveloped or natural services lands to agricultural uses. Even considering the boons of regional agriculture, natural communities must take precedence over farmland in any planning tool that concerns itself primarily with the protection of natural resources. Along those lines, bio-rational planning should offer incentives to organic farmers and other agriculturists engaged in sustainable farming practices. As it stands, San Diego is home to 400 registered organic farmers who operate nearly 25% of the organic farms in California.³⁴ In terms of water consumption, San Diego County is considered to have the highest agricultural water conservation level in the world, with an 85% efficiency rating.³⁵ This efficiency level is probably due to the price of imported agricultural water in San Diego, where farmers pay up to 30 times what Central Valley farmers pay. While these higher prices prevent San Diego farmers

³²County of San Diego, "San Diego County General Plan, Part II: Regional Land Use Element," January 1979, 23.

³³McFetridge, Duncan, personal communication, 8 August 1994; Kilpatrick, Terry, personal communication, 10 August 1994; Grassetti, Richard, letter to San Diego County Board of Supervisors, 1993.

³⁴County of San Diego Department of Agriculture, Weights and Measures, "Annual Crop Report," 1993, 11.

³⁵CIC Research, "An Agricultural Water-Use Profile for San Diego County," 14.

from being able to compete with Central Valley farmers in a national market, they reflect more accurately the true cost of imported water. Bio-rational planning would actively support and expand upon these two already-existing aspects of San Diego agriculture – the popularity of organic farming and the practicality of conserving water.

Under San Diego's existing planning paradigm, agriculture and its associated benefits are essentially unprotected. Stricter protection of this resource could help prevent, or at least slow, the conversion of farmland to residential uses. In addition to curbing the rate of San Diego's development, pro-agriculture planning efforts would assist in the preservation of open space, viewsheds, family farms, rural lifestyles, and a viable and important segment of the region's economy.

Economic Viability, Quality of Life, and Social Justice

Throughout the past few decades, real estate developers, banks, construction companies, and other commercial interests succeeded in perpetuating the idea that urban sprawl is a social good – or at least an avoidable consequence of progress. This idea is lent credence by the fact that sprawl appears to have “helped fuel California's unparalleled economic boom, and...has enabled millions to realize the enduring dream of home ownership.”³⁶ While many people and companies have grown wealthy by investing in this type of development, the truth of the matter is that urban sprawl is among the costliest kinds of land use. Environmentalists, open space advocates, and many urban planners have denounced sprawl for years, but only recently has a major financial institution, Bank of America, joined the ranks of sprawl's critics. In early 1995, the state's largest bank released a report stating that California must seek out new and improved patterns of growth that break the sprawl-induced cycles of urban decay and land conversion. Bio-rational planning,

³⁶Bank of America, *et al.*, “Beyond Sprawl: New Patterns of Growth to Fit the New California,” January 1995, 1.

which would call for an end to urban sprawl in San Diego County, could be a viable way to create different patterns of growth that are at once ecologically sound and economically sustainable.

Some of the costs and consequences of sprawl detailed in Bank of America's report include: The cost of new suburban infrastructure (new roads, schools, police, sewer lines, etc.); the cost of mitigating environmental problems brought on by development of natural services lands; the environmental and monetary costs of increased use of cars; abandoned investments in older communities; economic segregation and loss of social stability; loss of agricultural land and a subsequent decline in farm communities;³⁷ and the massive toll that has been taken on land, air, and water.³⁸ In short, sprawl does not pay for itself.

The fact that sprawl has persisted as the dominant brand of development in Southern California and San Diego for as long as it has is partly the result of planning policies that reward "leap-frog" development patterns. Cheaper, less restricted land tends to exist on the edges of cities, so these are the areas that absorb the brunt of new construction; as development intensifies in these areas, the edges of urban areas expand outward without much forethought.³⁹ Bio-rational planning would create zoning strategies which make efficient use of land that is already developed; this would entail the revitalization of older communities and the introduction of more compact development patterns in areas that are presently close to urban centers but slated for low density development. By focusing growth in an

³⁷"Beyond Sprawl" encapsulates nicely the cycle of long-term uncertainty that characterizes farm communities on the fringes of sprawling urban areas: "Sprawl destabilizes agriculture by creating the temptation to 'sell out.' The prospect of eventual sale to a developer reduces incentives for farmers to make long-term capital investments. In many cases, farmers stay afloat financially by borrowing against the speculative value of their farm for development – creating a self-fulfilling prophecy of sprawl" (7).

³⁸Bank of America, *et al.*, "Beyond Sprawl," 6-8.

³⁹*Ibid.*, 9.

efficient, compact, and forward-thinking manner, these planning efforts should prove far more economically viable than the sprawl of the late 20th century.

As bio-rational planning's growth strategies would likely improve the economic viability of the San Diego region, they also stand to improve (or at least maintain) the county's overall quality of life. Quality of life is an abstract measurement of how enjoyable or "livable" a place is. The most recent edition of the *Places Rated Almanac* indicates that the San Diego region is 16th in overall quality of life, out of 343 North American metropolitan areas.⁴⁰ This is a very high rating and is related largely to the area's climate, cultural opportunities, and job market. The rating is also related to the quantity and quality of open space and parks. Should open space acreage decline, or similarly, should the quality of open space decline (residents may find landscaped, manicured parks connected to master-planned communities less fulfilling than natural open space), people's ability to enjoy their surroundings may suffer a concurrent decline. In Los Angeles and Orange counties, where natural open space has been all but entirely paved over, only 25% of residents describe their county in favorable terms.⁴¹ In San Diego County, open space remains, as does a reasonably high quality of life. An ecologically-based planning tool would be committed to protecting open space resources; consequently, it could help maintain the quality of life to which San Diegans have become accustomed, and prevent the "Los Angelization" of yet another Southern California county.

Although bio-rational planning is largely concerned with preserving a region's ecological integrity, it will also provide a means of realizing many social justice goals as well. In fact, ecological protection and social justice are so intertwined that one is impossible without the other. If San Diego eventually

⁴⁰Prentice Hall Research, *The Places Rated Almanac* (New York: Simon and Schuster, 1994).

⁴¹Sierra Club California, "Policy Before Planning," Green State of the State Report, 1991, 1.

succeeds in protecting its remaining wildlands, but fails to address the needs of lower-income and disenfranchised citizens, then it will have failed to implement genuine ecological planning.⁴² As it stands, because of its preference for sprawl-inducing zoning, San Diego has failed on both the ecological *and* social justice fronts. One of traditional zoning's most serious flaws is that it stratifies land uses, such that mixed neighborhoods (neighborhoods that simultaneously support residential, commercial, and other uses) are nearly obsolete outside of urban areas. The result of this stratification is residential areas that are separated from commercial centers and cultural opportunities, sometimes by several miles of highway. Consequently, another type of stratification occurs that is economic in nature: Wealthier people who can afford to drive everywhere take up residence in outlying suburbs, while lower-income people remain in more densely-populated communities that may lack open space and other amenities. This twentieth-century pattern of human settlement, inner cities surrounded by concentric rings of resource-inefficient suburbs, affords few long-term benefits. Inner cities are often ecologically bankrupt and economically abandoned, while outer suburbs are usually hyper-consumptive and socially homogenous.

Bio-rational planning would attempt to re-work this hierarchical development pattern. Its focus on increasing residential densities and encouraging mixed-use communities would yield more compact neighborhoods and towns, while promoting and protecting open space and greenbelt resources. Higher residential densities, in addition to freeing up more land and water resources, are also considered a pre-requisite for affordable housing.⁴³ However, they need not be a forerunner to urban decay. Resources and technologies exist to create affordable, efficient, desirable housing; developers and builders have only to take advantage of

⁴²In the words of Jim McGrath, an environmental and social justice advocate, "'Sustainability' for the rich is not true sustainability. It has another name."

⁴³County of San Diego, Regional Growth Management Plan, June 1978, 23.

them.⁴⁴ Further, the ways in which communities are designed can foster greater opportunities for social and economic diversity while improving all residents' quality of life. A proponent of ecologically sustainable cities suggests the following blueprint for the building of "healthy neighborhoods:"

...the neighborhood needs to define itself and establish a hub. This hub ought to be within walking distance of the entire neighborhood and should include the diversity of services needed. Importantly, neighborhoods should build a strong street life.⁴⁵

Examples of communities that have successfully pursued new patterns of urban/suburban development are: Davis, California's Village Homes, a twenty-year-old pedestrian-oriented, solar-powered housing development; Los Angeles' Eco-Village, an inner-city redevelopment project that boasts mixed land uses and a socially diverse population; and Richmond, Indiana, where efforts have been made to retrofit houses for energy efficiency and to promote local sustainability.⁴⁶

After four decades of suburban sprawl, San Diego County has already committed hundreds of thousands of acres to single-family subdivisions; it has also witnessed the demise of many of its more densely populated communities, such as Mission Valley and Downtown San Diego. But this pattern can change; indeed, it must. In order to ensure that a high quality of life is available to all San Diegans, developers and builders must adopt more creative approaches to developing and building. While not much can be done to greatly improve the county's myriad subdivisions and shopping malls already in existence, improvements can be made to older urban areas and newer communities that are now in the process of growing and expanding. Similarly, the County of San Diego can support the efforts of the construction industry by zoning for mixed uses and higher densities, protecting

⁴⁴Laura Armstrong, Administrative Director of the Center for Resourceful Building Technology (Missoula, MT), pers. comm., April 27, 1995.

⁴⁵Jim McGrath, masters thesis, Environmental Studies Program, University of Montana (Missoula, MT), 1995, 31-32.

⁴⁶Ibid., 32-33.

open space resources, providing bike paths, investing in public transportation, and rewarding forward-thinking community plans that encourage social and economic diversity.

“Simple Ain't Easy”

The concept behind bio-rational planning is essentially a simple one: When planning a community's physical future, evaluate human needs and desires in the context of biological and ecological integrity. Because this leveling of the playing field entails the restriction of several human activities, most notably our urges to build structures and amass wealth, it may be a tremendous challenge for San Diego to accept. Yet the significance of overcoming this challenge is huge; at the risk of sounding apocalyptic, acceptance of a biologically-based planning tool may well be a necessity, as far as the perseverance of non-human communities is concerned. And because humans are, cellular phones and air conditioning aside, still inextricably bound to their natural environs, the benefits of bio-rationality will come to bear directly upon people as well as watersheds and gnatcatchers.

The rationales offered above may do little to convince a financially-motivated body of planners to radically alter its approach to planning. Even if each of San Diego's professional planners was somehow convinced that an ecological approach would work, politics and public outcry would no doubt stand in the way of acceptance for quite some time. The key to obtaining acceptance of this kind of planning lies with the residents of San Diego County. Until there is a “mandate from the people,” one that unmistakably calls for a brand new and improved way of conducting the business of land use planning, the status quo will likely prevail. That mandate may be a long way off at this juncture, but like all mandates, it needs to start somewhere. In this case, the latent mandate's origins lie in a dialogue about possible ways to change the course of San Diego's physical growth. The next and

final chapter advances this dialogue with more specific recommendations about the practical aspects of bio-rational planning.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

Effective protests are grounded in a refusal to accept what is normal...Effective protests are grounded in a coherent vision of an alternative....¹

When Jack Turner penned the above quote, he was referring to the modern environmental movement and its shortcomings. In "The Abstract Wild," Turner suggests that we have come to accept ecological degradation, species extinction, and suffering as *normal*. Our acceptance of these injustices makes their elimination that much harder. Until we recognize that environmental destruction is entirely abnormal, we will remain unable to effectively reverse the trends that characterize our modern, industrial, and largely arrogant existence.

Throughout the United States, people have come to accept certain types of development and land use as normal. In Southern California, urban sprawl is the norm, and although valid criticisms have been levied against this kind of land use, people accept sprawl. Yet *acceptance* seems to be a highly inappropriate reaction to any endeavor that destroys wildlife habitat, drains wetlands, paves over watersheds, contributes to loss of biodiversity, degrades local groundwater, and relies largely on water imported from dammed rivers and drowned canyons. Of course, degrees of appropriateness are a function of values: A person who values subdivisions comprised of single-family homes on one-acre lots may find that acceptance of sprawl is perfectly appropriate; a person who values open spaces, wildlife, and free-flowing rivers may be troubled by this acceptance. Possibly, most Southern Californians give little consideration to their implicit or explicit acceptance of sprawl, let alone the appropriateness of this acceptance; the fact that sprawl has defined their landscapes for decades may overshadow the possibility of redefining these same landscapes in the decades to come. However, from an ecological

¹Jack Turner, "The Abstract Wild," in Witness, Winter 1989, 84-85.

perspective (and that is the perspective which motivates this paper), such a redefinition is critical. This redefinition must begin with "a refusal to accept what is normal." From there, "a coherent vision of an alternative" may emerge.

The previous chapters have argued why the residents of San Diego County should refuse to accept low-density sprawl as the county's dominant mode of land development, and why a biologically-based planning tool may be a viable alternative to the traditional tools that have allowed and even encouraged sprawl. Both parts of this equation, the refusal and the alternative, rely heavily upon an assumption – that natural communities are entitled to exist despite human activity. Essentially, this is the converse of the assumption that fuels modern land use patterns – that human communities are entitled to prosper regardless of threats to the natural world.² However, even if bio-rational planning is rooted in the former assumption, an unavoidable bottom line deserves mention: Any urbanized, heavily populated area will take its toll on natural communities; when considering how three million people ought to live, the issue becomes one of reducing impacts rather than eliminating impacts. Responsible, ecologically-motivated planning cannot *prevent* the consumption of imported water, the construction of homes, or the use of fossil fuels; it cannot control the sheer numbers of people that have chosen and will choose to settle in San Diego County. What bio-rational planning offers is a means to slow the rate at which resources are used, species are lost, and land is degraded. It can give San Diego the time it will need to turn an inevitable corner in its planning efforts; this region's physical growth must slow down so that San Diego

²There are those who would disagree that modern patterns of land use lead to thriving human communities. See, for example: Anthony Downs, New Visions for Metropolitan America (Washington, DC: The Brookings Institute, 1994); Bank of America, *et al.*, "Beyond Sprawl: New Patterns of Growth to Fit the New California," January 1995; Kristina Ford, *et al.*, "Committed Lands: Capturing the Benefits of Growth," Public Policy Research Institute, Missoula, Montana.

County can assess the needs of its human and non-human residents and plan appropriately for the future of both.

San Diego County is currently in a unique position to experiment with this type of land use planning. As discussed in previous chapters, the county: (1) has a general plan that will need to be reworked during the next five or so years in order to accommodate future population and housing projections; (2) is home to more sensitive or threatened species than any other county in the continental United States; (3) is the site of the most ambitious habitat conservation plan in the history of endangered species protection and legislation in the United States; (4) has a human population that is expected to increase by 24% during this decade alone;³ (5) is contemplating conducting water transfers with Central Valley farmers to augment its imported water supply; and (6), even considering the acres of habitat that have been compromised or destroyed by development, it contains within its borders a wealth of different natural communities and a relatively large amount of open space. In short, San Diego is presently at a transitional juncture with respect to planning. The time could be construed as ripe for some kind of change, some sort of refusal to accept that which has become normal.

The question remains, however, whether such a change – from development-based planning to ecologically-based planning – is desired by San Diegans. If a county government, which subsumes a land use planning department, exists to serve a populace, then a change of this sort can only come on the heels of a public mandate. At present, San Diego residents are not clamoring for bio-rational planning. Yet evidence exists which suggests that San Diegans may be in favor of some form of planning that is ecologically sustainable and socially just. Perhaps most significantly, in 1993 San Diego voters approved the Forest Conservation Initiative, an ordinance that sets a minimum parcel size of 40 acres on private in-

³Tim Palmer, "A Great Number of People," in California's Threatened Environment, 24.

holdings within Cleveland National Forest.⁴ In 1988, county residents approved eleven of 21 slow-growth ballot measures introduced throughout the region.⁵ The fact that several of these measures were approved by voters at the height of San Diego's most recent construction boom might indicate that San Diegans are in favor of keeping sprawl and development to a minimum. (Unfortunately, slow-growth measures are not the most effective means of controlling growth, as they run the risk of forcing the "premature" development of outlying communities and rural areas.⁶)

San Diego's efforts to manage growth, however effective or ineffective, seem to be spurred on in part by the aforementioned fear of becoming too much like Los Angeles. The county's Regional Growth Management Plan speculates about a potentially bleak future for the San Diego area, characterized by "a senseless patchwork of endless residential suburbs stitched together by freeways and neon commercial strips typical of Los Angeles."⁷ One author, in an article about urban sprawl in North America, writes, "Los Angeles' metro area now stretches out over a vast area of 7,000 square miles and five counties. Nervous neighbors in San Diego wonder if they will soon be changing their city's name to 'Los Diego.'"⁸ A San Diego historian is even more explicit: "Certainly San Diegans think of themselves and their region as different and, by implication, a bit better than the areas to the north. Perhaps the most common comparative phrase locally is 'we don't want to become like Los Angeles.'...The Marine Corps' Camp Pendleton [which buffers San Diego

⁴County of San Diego, Sample Ballot and Voter Information Pamphlet, Registrar of Voters, 2 November 1993, 15. See Chapter Two of this paper for more on the Forest Conservation Initiative.

⁵Carl F. Neuss, "An Economy at Risk," in Urban Land (December 1991), reprinted in ed. Daniel D. Chiras, West Module to Accompany Environmental Science, 4th ed. (Redwood City, CA: The Benjamin/Cummings Publishing Co., Inc., 1994), 79.

⁶*Ibid.*, 80.

⁷County of San Diego, Regional Growth Management Plan, Volume 1, June 1978, 6.

⁸Kevin Kasowski, "Sprawl: Can It Be Stopped?" in Developments 2 (Summer 1991), reprinted in ed. Daniel D. Chiras, West Module to Accompany Environmental Science, 4th ed. (Redwood City, CA: The Benjamin/Cummings Publishing Co., Inc., 1994), 82.

County from Orange County] is perceived by many San Diegans as kind of an open space Maginot Line, holding off the unwashed hordes to the north."⁹ Apparently, the specter of Los Angeles and its planning fiascoes is a powerful one.

Apparently, San Diego County residents are not entirely averse to implementing a no-sprawl planning strategy. Overall, however, they will likely balk at a planning approach that asks them to relinquish some personal freedoms and recognize the rights of plants and animals to exist in viable, self-perpetuating communities. Furthermore, the region's powerful construction industry would likely oppose a bio-rational planning tool at every turn. (As it stands, the Southern California Building Industry Association is currently spending millions of dollars to delist the gnatcatcher and prevent future listings of endangered species.¹⁰) It appears, then, that acceptance of any ecologically-grounded alternative to current planning paradigms must be preceded by a still greater shift in public sentiment than has taken place in recent years. Information of the kind contained in this paper may assist in a public awareness campaign that could lead to an intensification of San Diegans' commitment to protection of their county's natural communities. As people come to recognize that natural lands provide many significant ecological services at little cost to taxpayers – and as people come to see low-density residential development as an inefficient and costly form of land use – they may grow more supportive of ecologically-based planning.

This paper has attempted to broaden the dialogue concerning the contemporary planning paradigm. Even though anything akin to bio-rational planning in San Diego may be years away from implementation, or simply out of reach because of public or institutional resistance, a discussion regarding the need

⁹Philip R. Pryde, *San Diego: An Introduction to the Region*, 2nd ed. (Dubuque, IA: Kendall/Hunt Publishing Co., 1984), 5.

¹⁰Patrick Mitchell of the Peninsular Ranges Biodiversity Project, letter to the editor of *Audubon* (March-April 1995), 12.

for and implications of this approach to land use planning is nonetheless valuable. The recommendations compiled below offer an outline of what an ecologically-motivated planning tool might look like, so that San Diegans and their professional planners and political leaders might begin to construct an alternative vision for their county's future.

Visions of an Alternative: Recommendations for an Ecologically-Grounded Planning Tool

General

- *Creation of an alliance of grassroots citizens' organizations.* Environmental, open space, natural resource protection, social justice, low income, and other citizen action groups in the San Diego area should form an alliance to promote the ideas and actions behind responsible, forward-thinking, and environmentally sound land use planning. Such an alliance could raise awareness and increase public support for bio-rational planning efforts. A sample roster of this alliance might include: Save Our Forests and Ranchlands, San Diego Chapter of the Sierra Club, Scripps Institute of Oceanography, San Diego Taxpayers Association, San Diego Natural History Museum, Environmental Action Council, and the Local Agency Formation Commission.
- *Implement bio-rational planning consistently throughout the San Diego region.* Ideally, bio-rational planning should take place at the county level. Implementation at the local level only may create a situation whereby jurisdictions with stringent growth restrictions could induce heavier development in jurisdictions without similar restrictions.¹¹ This dynamic, which is one of the engines of low-density sprawl, would defeat the purpose of an ecologically-based planning tool. If each of San Diego's 18 incorporated cities and each of its unincorporated regions adopted similar goals and regulations, developers seeking to build low-density, resource-intensive housing would encounter the same challenges and would therefore be unable to exploit a region where these restrictions did not apply.
- *Utilize the existing planning framework.* In an effort to facilitate county-wide planning, bio-rational planning should operate within the framework of the County General Plan. However, the General Plan would need to be partially re-written to reflect new, ecologically-minded values and goals. In this respect, bio-rational planning does not constitute a different *kind* of planning tool; it borrows from the structure of the traditional tools (plans, maps, and ordinances) and

¹¹Anthony Downs, "Like It or Not, Suburbs Are Tied to the City," in New York Newsday, 29 September 1994; Carl F. Neuss, "An Economy at Risk."

injects a perspective based on cessation of sprawl and reduction of sprawl's associated environmental, economic, and social costs. A new General Plan would, in turn, create changes to the County Zoning Ordinance, as the ordinance is a reflection of the goals and policies laid out in the Plan.

- *Institutionally commit to the protection of natural communities.* All county planning documents should reflect a commitment to protect natural communities and reduce resource consumption. This commitment must be substantial. Current planning documents refer repeatedly to the need to protect, conserve, and use resources wisely. Yet rates of habitat loss, farmland conversion, water consumption, and construction of single-family homes indicate that the environmental goals of the County General Plan are not being met. The commitment required for true protection and reduction will stem from a rearranging of priorities: Simply, the County of San Diego must prohibit horizontal, low-density development, regardless of the construction and real estate industries' influences.
- *Acknowledge the link between ecological integrity and social justice.* Often, efforts to protect natural communities are criticized for being "anti-people." In truth, resource preservation is merely "anti-greed." Not surprisingly, the foremost engine of environmental degradation in Southern California is also one of the prime perpetuators of social and economic injustice – urban sprawl. Planning reform that recognizes this connection between ecology and equality will also help to debunk the myth that environmentally-sound planning seeks to extirpate humans. While bio-rational planning does seek an end to the resource consumption patterns that characterize 20th century Americans, it unequivocally supports the right of each of these Americans – not just the wealthy ones – to decent, healthful lives. The San Diego County General Plan should reflect this support by vigorously pursuing high-quality affordable housing, and by identifying and eliminating sprawl-inducing zoning regulations that have helped create a situation of haves and have-nots in San Diego County.

Land Use

- *Institute a county-wide interim growth moratorium.* Crucial to the objectives of bio-rational planning – protecting natural communities and minimizing land and water consumption – is the growth moratorium. While the General Plan is being re-worked, no further horizontal growth should be permitted. As of January 1994, San Diego County contained 61,401 vacant housing units;¹² these units could conceivably absorb new San Diegans until policies regarding further housing construction have been firmly established. A growth moratorium should allow some infilling on lands that are currently developed at lower densities.

¹²SANDAG, "January 1, 1994 Population and Housing Estimates," in INFO (September-October 1994), 14.

- *Re-map the county, assigning natural services lands and open space the highest priority.* Currently, the General Plan is based largely on maps, which depict different land uses and assist planners with forecasting the direction of future growth. As of 1993, these maps indicate that 68% of San Diego's gross acreage is suitable for low-density single family zoning, and that of the county's "vacant developable" acreage, fully 88% is slated for low-density single family zoning.¹³ That these maps "tell" planners to designate the bulk of the county's land mass as low-density single family residential (i.e., the first wave of sprawl) is not a function of the land itself, but rather a function of what planners perceive to be the highest use of "vacant" land. Bio-rational planning would involve re-mapping the county, using a mapping method developed by Sargent *et al.* First, lands that support wildlife, water conservation and renewal, agriculture, and recreation are identified, classified, and mapped. Lands left over are then carefully designated for intensive uses, such as residential and commercial.¹⁴
- *Designate firm urban growth boundaries.* The re-mapping of San Diego County would coincide with and inform the re-writing of the General Plan. An important aspect of this new General Plan would be the implementation of urban growth boundaries (UGBs). "The UGB essentially draws a line between urban and rural – on the urban side, development is generally encouraged; on the rural side it is generally discouraged."¹⁵ UGBs have worked particularly well in Oregon, largely because they are firm, state-mandated boundaries; they help counties and municipalities comply with state-wide planning goals.¹⁶ In San Diego County, UGBs could play an indispensable role in the protection of currently undeveloped, or natural services lands, by focusing further growth in areas that have already been developed at low or medium densities. UGBs could replace the County General Plan designations of Current Urban Development Areas and Future Urban Development Areas – both of which encourage development, but at differing densities.
- *Create zoning designations that actively discourage or prohibit development.* The new General Plan should incorporate land use and zoning designations that discourage development, a recommendation put forth in 1978's Regional Growth Management Plan (RGMP). The recommendation was deleted from the final draft of the RGMP, as the county Board of Supervisors determined that "the best way to protect environmentally constrained areas is through timely implementation of the adopted Conservation Element."¹⁷ Thus far, timely implementation of the Conservation Element has done little to reduce resource

¹³SANDAG, "Land Use in the San Diego Region," in *INFO* (January-February 1993), 7.

¹⁴Frederic O. Sargent, *et al.*, Rural Environmental Planning for Sustainable Communities (Washington, DC: Island Press, 1991), 6.

¹⁵Kevin Kasowski, "Sprawl: Can It Be Stopped?"

¹⁶Press release, "Growing Suburbs and Declining Cities: Why the U.S. Needs a New Vision for Metropolitan Growth," The Brookings Institution, June 1994.

¹⁷County of San Diego, Regional Growth Management Plan, Volume 1, June 1978, 27.

consumption or land conversion. These new designations would complement the objectives of the UGBs by concentrating any new construction in areas that have already been developed while restricting construction on natural services lands. The County of San Diego should pursue this goal by providing taxpayer-funded infrastructure and amenities only where development is desired; elsewhere, infrastructure should not be provided.

- *Shift the county's housing stock toward higher densities.* The new General Plan should focus on altering the housing stock of the county, particularly in the incorporated area, where urban densities would be more appropriate than in the more sparsely-populated East county. Presently, the housing stock is heavily weighted toward single family homes, which have been determined to consume greater quantities of land and larger amounts of water than denser forms of housing. New construction should be required to comply with resource efficiency standards that would best be met by higher density housing. Further, the County Zoning Ordinance, under the direction of the General Plan, should re-designate acreage that is currently deemed single family or low-density single family. These re-designations should raise densities on lands that have already experienced heavy development, and increase minimum parcel sizes (thereby lowering housing densities) on lands outside of an urban growth boundary. The county might increase the desirability of higher density communities by siting magnet schools in these areas, and by providing low-interest loans or grants for resource-efficient, high-quality housing that is accessible to middle- and low-income residents.
- *Diversify land uses within neighborhoods and residential areas.* An important contributor to low-density sprawl is stratified land uses. Throughout San Diego County's urbanized, incorporated region, residential areas exist separately from commercial or industrial areas, such that people must often drive to most destinations. A commonly suggested antidote to sprawl is "mixed neighborhoods," where residential, commercial, and sometimes industrial land uses occupy the same general area.¹⁸ The new General Plan should incorporate this suggestion by re-zoning incorporated areas that are presently strictly residential. In so doing, the Plan could foster true neighborhoods, rather than the subdivision-and-mall pattern which characterizes so much of San Diego's urbanized areas. Mixed neighborhoods should be mass-transit-friendly and equipped with convenient bike paths. In the county's rural areas, mixed neighborhoods should only be a goal within towns and villages.
- *Create more compact development by filling in underused space.* The new General Plan, in its effort to use land and other resources more efficiently, should promote infilling of land that has already been "committed." Committed lands are those that have an infrastructure in place – water and sewer lines,

¹⁸Marcia D. Lowe, "Alternatives to Sprawl," in *The Futurist* 26 (July-August 1992), reprinted in ed. Daniel D. Chiras, *West Module to Accompany Environmental Science*, 4th ed., 76.

access to schools, roads, etc. – and are capable of absorbing higher residential densities.¹⁹ Infilling is one means of creating more compact, resource-efficient, and affordable communities without spilling over into open space and rural areas.²⁰ As mentioned above, higher-density communities can be made more desirable by the provision of quality schools, parks, and well-designed commercial areas.

- *Extend the protection afforded sensitive natural communities to all communities.* Presently, the Land Use Element of the County General Plan contains a land use designation entitled “Environmentally Constrained Areas.” This designation includes floodplains, lagoons, agricultural preserves, and “areas containing rare and endangered species,”²¹ and creates restrictions on development in these areas. While this is an important designation in terms of protecting sensitive or rare natural communities, it runs the risk of pushing development onto more commonplace communities – much the way localized slow-growth measures may cause outlying regions to suffer. The new General Plan should intensify the protection of these constrained areas, while extending it to all natural communities that have not yet experienced declines. Such an extension of protection would fly in the face of environmental planning as it is traditionally practiced: Rather than wait for a natural community or species to decline, the new General Plan would attempt to proactively protect all natural communities before they become rare, sensitive, threatened, or endangered.

Water Resources

- *Connect the planning efforts of the County Water Authority and the County of San Diego.* The San Diego County Water Authority should be permitted and encouraged to make land use planning recommendations to the San Diego County Department of Planning and Land Use and the Board of Supervisors. Similarly, the County of San Diego should become more involved in water planning, perhaps through the implementation of water conservation ordinances. Currently, the two entities operate independently of one another, wherein the most significant overlap is in the area of growth projections: The county informs CWA of population predictions, and CWA attempts to secure the water to satisfy the predictions. The result of this “separation of powers” is that imported water availability and scarcity does not effectively inform land use decisions; meanwhile, San Diego's pronounced lack of local water *should* be among the primary influences in land use planning. The gap that separates water planning from land use planning might be partially bridged if CWA became a member agency of the San Diego Association of Governments. Similarly, the county should have more than one delegate to CWA's Board of

¹⁹Kristina Ford, *et al.*, “Committed Lands: Capturing the Benefits of Growth,” Public Policy Research Institute, University of Montana, Missoula, MT.

²⁰Marcia D. Lowe, “Alternatives to Sprawl,” 77.

²¹County of San Diego, San Diego County General Plan, Part II: Regional Land Use Element, January 1979, II-11.

Directors; presently, only one of CWA's 34 board members represents the county.²²

- *Implement county -wide water conservation ordinances.* The regions beyond CWA's service boundaries must comply with a County Groundwater Ordinance, which restricts development based on the availability of groundwater. Although the Groundwater Ordinance is not perfect, it could provide the western third of the county with a model for an *imported* water ordinance. Such an ordinance would restrict the amount and type of development permitted in CWA's service area. For example, all landscape-intensive construction would face heavy restrictions, including a requirement that native vegetation and soils replace Kentucky bluegrass and turf. Both the groundwater and imported water ordinances should include water conservation measures to be implemented by individual households. These measures, which include low-flush toilets, low-flow shower heads, and water-efficient appliances, are already recommended by CWA. Elevation of these conservation measures to the level of a county ordinance would provide them with more clout, particularly if they were compulsory.
- *Finance and conduct a county-wide groundwater survey.* The county has conducted a partial survey of San Diego's groundwater resources, but a complete survey has been repeatedly delayed due to lack of funding.²³ Consequently, information regarding groundwater supplies, basin integrity, and pollution/intrusion problems is inadequate. Finances are undoubtedly tight at the County Department of Planning and Land Use, and will remain so in the future;²⁴ however, a survey of this significance should be prioritized, as the direction and intensity of any future growth in the eastern two-thirds of the county are dependent upon a secure source of groundwater. Most importantly, solid and updated data should indicate which basins are nearing overdraft situations.
- *Strengthen the County Groundwater Ordinance.* Although the Groundwater Ordinance is one of the more proactive planning tools authored by San Diego County, it still contains weak language and regulations that may help to defeat its purpose. Exemptions for "subdivisions with less than four lots" and "most agricultural uses" should be eliminated, as should the exemption for projects that can prove the reliability of local groundwater without an official investigation.²⁵ Additionally, the county should conduct well-tests on a larger

²²Lee Willer, Water Resources Planner with San Diego CWA, pers. comm., April 20, 1995.

²³John Peterson, Groundwater Engineer with San Diego County Department of Planning and Land Use, pers. comm., March 20, 1995.

²⁴In the past three years, 60% of DPLU's staff has been laid off; another 20% will probably be laid off during the next two to three years. (Ibid.)

²⁵Board of Supervisors of the County of San Diego, Groundwater Ordinance, 7.

percentage of lots when performing groundwater investigations. Currently, only 10% of the total number of proposed lots are tested for adequate supplies.²⁶

- *Discourage water use transfers between San Diego County and other areas.* Although water transfers are an alternative to traditional water "reclamation" projects, they should be discouraged in the interest of decreasing anthropocentric water use and increasing instream flows throughout California and the West. If there is truly a "surplus" of water in California, that water should not be re-routed to cities where it will encourage more growth; instead, any water considered surplus should either be returned to the rivers and watersheds where it originated, or left there to begin with. The issue of water transfers can be addressed most effectively at the state level; however, because the San Diego County Water Authority is presently discussing the viability of conducting water transfers with the Central Valley Project, independently of other agencies, this is a question that will need to be addressed at the regional level as well.

Species Diversity

- *Conduct a county-wide biological baseline inventory.* One of the more challenging tasks involved with protection of natural communities is determining what needs to be protected. A biological survey might assist with future preservation efforts by identifying all of the county's ecological and biological components. In addition to compiling information about individual plant and animal species, this project should also assess the overall health of San Diego's remaining ecosystems. Assessment at this depth and detail would indicate which areas of the county are in the greatest need of restoration, and which are closest to "pre-settlement" conditions. With this data, the County of San Diego, in conjunction with U.S. Fish and Wildlife Service and the California Department of Fish and Game, might identify habitat where presently extirpated species could be reintroduced. Reintroduction of missing species may improve the county's long-term ecological health and integrity by filling in vacant niches and restoring certain predator/prey relationships.
- *Adopt a firm preservationist approach to protecting all of San Diego's plant and animal species.* Each element of the new General Plan should pursue the objective of protecting biodiversity throughout the county. For the most part, this objective would be met by implementation of the land use recommendations above, such as restriction of low-density growth and promotion of compact development. More specifically, the county should create a preserve system based on data compiled for the Multiple Species Habitat Program. The county's protection efforts should not be focused on individual species, as they have been in the past. Instead, the county and its municipalities must be concerned with protecting viably large tracts of habitat that sustain a

²⁶Ibid.

range of native plants and animals. In this way, San Diego may begin to improve its sensitive species record.

- *Do not implement the Multiple Species Conservation Program.* The Multiple Species Conservation Program (MSCP) will likely preserve several thousand acres of invaluable wildlife habitat. However, it exists separately from the planning process and will therefore have no impact upon General Plan land use designations or the County Zoning Ordinance; meanwhile, the General Plan and the Zoning Ordinance are the planning tools responsible for directing and controlling development throughout the county (and land conversion via development is the greatest cause of species decline in San Diego County). As discussed in the previous chapter, if the General Plan adequately restricted development in the rural parts of the county, there would be no need for MSCP. Rather than attempt to implement a new, bureaucratic, expensive, and ostensibly pro-development program, the county should focus its efforts, staff-power, and funds on re-designing its General Plan such that the Plan accomplishes the biodiversity protection goals of MSCP.

Agriculture

- *Adopt an agriculture element of the County General Plan.* The Regional Growth Management Plan and the Conservation Element of the County General Plan both intentionally gloss over the topic of farmland preservation, as the authors of both documents assumed that an agriculture element was forthcoming. The Department of Planning and Land Use (DPLU) drafted an agriculture element in 1979, but the County Board of Supervisors never adopted it due to strong opposition from both developers and farmers.²⁷ This draft, which has received praise from environmental and open space groups for its strong preservationist approach, should be re-worked and updated by the DPLU and approved by the County Board of Supervisors. States with strong agricultural zoning programs that might provide San Diego County with model regulations are Hawaii and Oregon (both of which have statewide zoning programs mandated by state legislation) and Wisconsin (where local agricultural zoning must be consistent with a county agricultural preservation plan).²⁸
- *Ensure that an adopted agriculture element promotes viable minimum parcel sizes.* Presently, in the absence of a agriculture element, the Regional Land Use Element sets the minimum parcel size of agricultural preserves at eight acres. The most recent version of the draft would raise this parcel size to as much as 80 acres.²⁹ The county should pursue this type of agricultural zoning in the interest

²⁷County of San Diego Department of Planning and Land Use, Agriculture Element, GPA 79-02, Sub-Item 1, October 1979.

²⁸Daniel R. Mandelker, Land Use Law (Charlottesville, VA: The Michie Co., 1982), 331-332.

²⁹County of San Diego Department of Planning and Land Use, Agriculture Element, Notice of Proposed General Plan Amendment (GPA 79-02) Public Hearings, 4.

of maintaining economically viable agricultural preserves that cannot be readily subdivided into eight-acre ranchettes.

- *Ensure that an adopted agricultural element promotes water conservation and sustainable agriculture.* As it stands, the high price of imported water and the scarcity of local groundwater have nurtured a conservation ethic of sorts within the San Diego agricultural community. Although the region's water conservation efforts may be financially motivated, the end result is an agricultural industry that boasts an 85% water efficiency level.³⁰ The county should reinforce this trend by requiring the use of all appropriate conservation methods. Organic farming, along with water conservation, appears to be popular in the San Diego area; one-quarter of California's organic farms operate in San Diego County.³¹ An agriculture element should create incentives, monetary or otherwise, for farmers who engage in organic farming techniques, in order to promote the continuance of this strong trend and to persuade conventional farmers to convert to organic methods.
- *Ensure that an adopted agricultural element does not encourage conversion of natural services lands to agricultural uses.* Parts of the General Plan and the Regional Growth Management Plan support the promotion and expansion of agriculture, particularly in the rural parts of the county. While a bio-rational planning tool should support the protection of agricultural resources, it must not promote the expansion of farmland where it might compromise natural communities. If San Diego's agricultural acreage is to expand in the future, the county should require that the expansion take place in already-developed areas. (For example, subdivision projects that go bankrupt before completion sometimes get as far as road-building and sidewalk construction;³² these partially built projects may render an area ecologically degraded, but the land may still be suitable for planting crops.) Although farmland is currently disappearing rapidly throughout California, a bio-rational planning tool should possess in its institutional memory the fact that the bulk of the state's native habitat has disappeared due to the expansion of agriculture.
- *Consider the adoption of a county-wide preferential tax assessment program to supplement the efforts of the Williamson Act.* Presently, many holders of Williamson Act contracts throughout San Diego County are opting not to renew their ten-year contracts with the state. More acres are being "non-renewed" in San Diego County than in any other major metropolitan county in California.³³ In some cases, such as the Ecke Ranch in Encinitas (north-coastal San Diego County), agricultural preserves that come out of contract are developed as

³⁰CIC Research, "An Agricultural Water-Use Profile of San Diego County," August 1993, 14.

³¹County of San Diego Department of Agriculture, Weights and Measures, Annual Crop Report 1993, 11.

³²Ruth Potter, retired planner with SANDAG, pers. comm., November 21, 1994.

³³Alvin Sokolow, "The Williamson Act: 25 Years of Land Conservation," (Sacramento, CA: Resources Agency of California, 1990), 37.

residential or commercial land; in essence, the Williamson Act provides these landowners with a tax break until they are prepared to sell out to developers. San Diego County could bolster the preservation efforts of the Williamson Act by requiring that back taxes, or some percentage thereof, be paid to the county upon non-renewal of a contract. The absence of disincentives to come out of contract may hasten the conversion of farmland to non-farm uses; with strong disincentives in place, the rate of non-renewals may decrease. The Williamson Act is a voluntary program, so there will be limits on the extent to which disincentives might be used.

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