Chapter Eleven

AMREP and the Pueblos

River's Edge and La Luz

by Anthony Anella

Architect Anthony Anella, AIA, compares two development patterns on Albuquerque, New Mexico's booming West Mesa. One embodies the short-term, high profit, "anyplace" standard subdivision model of development that is as oblivious to local culture as it is to the existing natural patterns of the land. The other is a rare example of a contemporary designer—architect Antoine Predock, FAIA—blending both Modernist and indigenous landscape strategies to create a cluster development that exhibits a classic sensitivity to place that Ancestral Puebloan builders would have appreciated. Anella grounds his narrative in a site-mapping strategy called "conservation land planning," in which a piece of rural land to be developed is examined minutely to determine the ecologically ideal location for construction. In his own practice, Anella observes that sites determined to be ideal for modern development tend to have already Mimbres or Ancestral Puebloan ruins associated with them.

Examine each question in terms of what is ethically and
esthetically right, as well as what is economically expedient.
A thing is right when it tends to preserve the integrity,
stability, and beauty of the biotic community.
It is wrong when it tends otherwise.
— *Aldo Leopold*

Two different models for contemporary land development in the Ancestral Puebloan landscape lie along the Rio Grande in the greater Albuquerque Metropolitan Area. One is the conventional single-family detached housing development of "River's Edge I," developed by AMREP Southwest Inc., a subsidiary of the New York–based AMREP Corporation, between 1987 and 1993. The other is the clustered housing development of "La Luz," developed by Ray Graham and designed by Antoine Predock between 1969 and 1974. The context for each is the same. Both developments share an identical relationship to the river and the adjacent cottonwood bosque that grows along it. Both are situated on the west side of the Rio Grande above the river's floodplain in a semiarid grassland characterized by alkali sacaton, sand dropseed, and Indian ricegrass with scattered fourwing saltbush. And both have spectacular views of the Sandia Mountains to the east. Each development is distinguished by a different business plan, reflecting fundamentally different attitudes regarding human relationships to the land and the creation of long-term versus short-term economic value.

River's Edge I is an expression of a conceptual framework that views land as a commodity and ownership as an individual privilege to be exploited (figure 11.1). This relationship is rooted in the historical circumstances that made the 1862 Homestead Act possible when land was abundant, non-Native settlers were scarce, and land ownership was the incentive for settling a continent. Even though these circumstances have changed, the criteria for land development that grew from this relationship still prevail. River's Edge I is an artifact of the contemporary culture that occupies the ancient Pueblo landscape; it is premised on a relationship of perceived abundance between people and the land that is strictly market oriented.

La Luz, on the other hand, expresses a different conceptual framework (figure 11.2). It follows in the Ancestral Puebloan tradition that clusters housing in order to preserve the remaining land for open space. It is a conservation-based development that maintains local character and conserves resources. It shifts the conventional paradigm of extracting immediate value from the land as an individual privilege to a new paradigm of creating long-term value by protecting the land for future generations through ecologically based design and planning.

A comparison of the property value appreciation at La Luz (built in 1969) with the property value appreciation at River's Edge I suggests that La Luz is a more financially rewarding long-term investment. The average price of a 1,740-square-foot La Luz townhouse appreciated by 17.71 percent per year from $77.90 per square foot in 1993 to $96.74 per square foot in 2000.[1] The average price of a 1,425-square-foot River's Edge I detached house appreciated by 16.88 percent per year from $55.89 per square foot in 1993 to $75.53 per square foot in 2001.[2] It is important to note that the average age of the River's Edge I house sold in 2001 was only twelve years

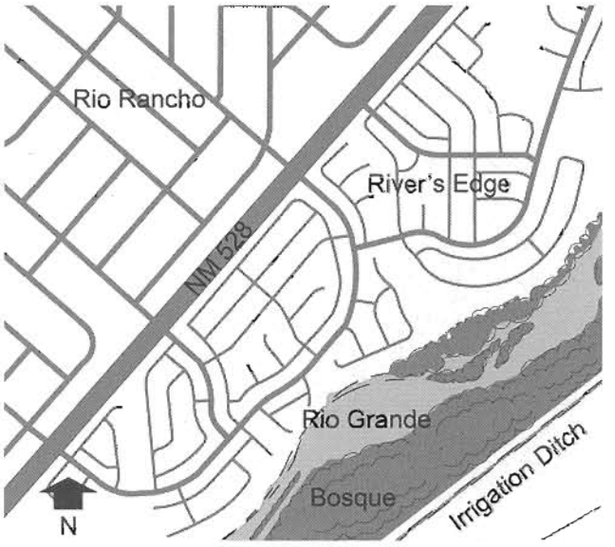

Fig. 11.1 River's Edge. Illustration courtesy Morrow Reardon Wilkinson Miller Landscape Architects.

whereas the average age of a La Luz townhouse sold in 2000 was twenty-four years.[3] The fact that, since they were first constructed in 1969, the average annual appreciation for La Luz townhouses has been 13.89 percent makes a powerful statement about the long-term value of La Luz as an investment.[4] It remains to be seen whether or not the River's Edge I development will continue to appreciate at the same rate as the houses grow older and the construction deteriorates. Nevertheless, the land development pattern represented by River's Edge I is by far the dominant one. This paper will explore why the River's Edge I model works, and why the land development pattern exemplified by La Luz has not been emulated in the marketplace. It will question the conventional wisdom regarding the inevitability of the River's Edge I pattern of development. And it will conclude with a discussion of an alternative pattern for land development based on a design process known as "sieve mapping," which identifies the conservation value of the land and demonstrates how to capitalize on this value.

The River's Edge I development responds to the need for affordable housing in Albuquerque. This is why River's Edge I is so successful. For a young family just getting a start it provides the opportunity to build equity as an attractive alternative to paying rent. In part, AMREP achieves affordability through the economies of scale and mass production. A limited number of house models are offered for sale to the prospective buyer. Further, the land is bulldozed to create identical house pads for each of these models, thereby avoiding the added expense of customizing the house to fit a specific site. There is no question that this pattern of development has enabled thousands of New Mexicans to realize

Fig. 11.2 Aerial photo of La Luz. Courtesy Ovenwest Corporation.

the enduring dream of home ownership. However, what makes River's Edge I affordable is a false economy. Cheap land at the fringe of the metropolitan area and development and construction practices designed to last no longer than a thirty-year mortgage may be the real reasons River's Edge I is affordable.

American homebuilders have operated on the assumption that abundant supplies of inexpensive energy make it easier to pump vast amounts of cold air into houses in the summer and hot air into houses in the winter than to pay for site-sensitive buildings designed by architects in direct response to the climatic conditions found in a particular location. The advantage of site-specific and environmentally sensitive house design has been rarely considered in the modern history of homebuilding in this country. The exigencies of mass production result in "anywhere" design and construction. This is why the house designs of River's Edge I are similar to those in any other part of the country. They show no more awareness of the climatic, geographic, or cultural conditions particular to their site than do new houses in Phoenix or Amarillo. Albuquerque ends up looking like Los Angeles. To put it another way, the American marketplace favors the short-term advantage of a low down payment on a smaller mortgage over the long-term advantage of energy efficiency resulting from environmentally responsible design and construction. The prevailing attitude in the marketplace is to postpone until the future what you don't have to pay for today. As modern Americans we have grown fat from our indulgences at the expense of creating the legacy of a healthy environment for our children.

AMREP's purchase in the early 1960s of about ninety thousand acres of West Side land at or near rock-bottom prices is one of the reasons for the low prices. Another is that AMREP has not provided basic improvements such as sidewalks, residential street lighting, or underground storm drainage—not to mention amenities, such as parks, recreation facilities, or libraries, which contribute to making a community. Over the years the AMREP Corporation and its subsidiaries have been accused of negligence on everything from improper sewage disposal and inadequate house foundations to using inferior indoor plumbing pipe (Michael Hartranft, *Albuquerque Journal*, 22 February 1991). In 1978, AMREP settled a class-action lawsuit brought by area landowners that accused AMREP of deceptive land sale practices by donating 161 acres of land and $350,000 in cash to the City of Rio Rancho as part of the settlement (Staff Report, *Albuquerque Journal*, 22 April 1993). In 1991 a lawsuit brought by the New Mexico Attorney General's Office alleged that AMREP built many homes with lumber that was not pressure-treated for use belowground; this lawsuit was also settled against AMREP (Gayle Geis, *Albuquerque Journal*, 27 June 1992).

Deficient flood control is another one of the false economies that makes AMREP's development of Rio Rancho affordable. Rio Rancho relies almost entirely on using streets to carry storm water (Christopher Miller, *Albuquerque Journal*, 25 June 1989). This has a drastic effect on the dry landscape because the street-level drainage often causes erosion when a street ends abruptly and turns into a dusty mesa or an unlined arroyo (Miller, *Albuquerque Journal*, 25 June 1989). For example, it normally takes between one-half and one inch of rain to create runoff in the desert but after the development of streets, houses, and parking lots, runoff occurs with only one-tenth of an inch of rain. As a result of development, instances of runoff in arroyos jump from an average of once every three years to twenty-three or more times in a year (Miller, *Albuquerque Journal*, 25 June 1989).

Rio Rancho did not establish comprehensive drainage and flood control laws until 1988. Enforcing the laws has been difficult. Part of the problem is that from 1963, when Rio Rancho's first homes were built, until the incorporation of Rio Rancho as a city in 1981, Rio Rancho's destiny was controlled by AMREP. AMREP built the community's homes and roads, and owned and operated the water and sewer system, which, in effect, controlled how and where the city grew (Hartranft, *Albuquerque Journal*, 22 February 1991). In short, AMREP functioned autonomously as a quasi-government. Even after incorporation, the relationship between Rio Rancho and AMREP has been like that between David and Goliath. This is because Rio Rancho is dependent on the large amount of revenues it receives in sales taxes on new AMREP homes. In 1988–89, according to Hal Donovan, the city finance director at the time, just more than $1 million or 16.5 percent of the city's total $6.3 million in revenue came from new home sales with AMREP building 88 percent of the city's new single family homes during that

time (Miller, *Albuquerque Journal*, 25 June 1989). "That makes the City of Rio Rancho very vulnerable and tied to AMREP's operations," according to Chuck Easterling, a West Side engineer and mastermind of Albuquerque's drainage laws who has served as a private engineer under contract with Rio Rancho. "It's not a healthy situation" (Miller, *Albuquerque Journal*, 25 June 1989).

Easterling said he refused AMREP's request to approve the first phase of the Vista Hills subdivision after finding that AMREP hadn't built a storm drain at a key intersection as directed. But, he said, then-mayor Richard Wiles approved the subdivision anyway. AMREP said it was simply a difference of opinion between Easterling and the AMREP engineer. Richard Wiles said he couldn't remember the incident (Miller, *Albuquerque Journal*, 25 June 1989). In 1988 the Vista Hills subdivision was scourged by a flood that filled the streets with thousands of tons of sediment and caused an estimated $500,000 in property damage (Greta Guest, *Albuquerque Journal*, 1 August 1988).

When Rio Rancho incorporated in 1981, some residents suspected that the power behind incorporation was AMREP (Hartranft, *Albuquerque Journal*, 22 February 1991). It seemed dubious for AMREP to willingly give up the power it had as an autonomous quasi-government. But in 1990 a second flood swept through the Vista Hills subdivision. Many residents blamed AMREP. Richard Williams, the public affairs director for AMREP at the time, maintained that AMREP was not to blame for any possible drainage problems in the Vista Hills subdivision since its drainage plans were approved by the proper officials. "A lot of this is the City's responsibility, too," Williams said, "because this is an incorporated town now" (Miller, *Albuquerque Journal*, 17 July 1990).

An inadequate water supply is another example of the false economies that make AMREP's development of Rio Rancho affordable. On July 13, 1989, the Rio Rancho City Council, by a five to one vote, approved a sixty-day moratorium on issuing new building permits (Miller, *Albuquerque Journal*, 13 July 1989). They did so because of periodic water outages and low water pressure in some areas of Rio Rancho. The Albuquerque Utilities Corporation was blamed for not pumping enough water to keep up with the residents' needs. The utility was owned by AMREP at the time. (It has since been sold by AMREP to the General Waterworks Corporation.) The next night, on July 14, 1989, the Rio Rancho City Council reversed itself and lifted the ban on building saying the measure penalized the city and its residents without helping to resolve Rio Rancho's water supply problems (Miller, *Albuquerque Journal*, 14 July 1989). According to Martin Block, a member of the State Public Service Commission at the time who attended the council meeting, the residents of Rio Rancho were paying $1.16 per one thousand gallons of water, compared with a state average of about $2.50 per one thousand gallons of water. He told the council that the Albuquerque Utilities Corporation could install more storage tanks, wells, and pumps to meet the demands for water, but that residents must be willing to pay for the extra equipment (Miller, *Albuquerque Journal*, 13 July 1989).

It seems obvious that AMREP ignores the long-term costs of building a community without adequate infrastructure. It also ignores the long-term costs due to commuting and energy consumption that can burden a family's annual budget. And it ignores the consequences to a family that finally pays off the thirty-year mortgage only to find that their equity in home ownership may have evaporated due to poor construction and the depreciation of their property's value in a declining—because poorly planned—neighborhood. AMREP responds to short-term social and economic needs at the expense of creating real long-term value that would benefit not only the family's equity in home ownership but also the community of Rio Rancho as a desirable place to live. This "false" economy has to do with living in an age of instant gratification where success is defined by the realization of short-term goals. Unfortunately, the short-term interests of a large publicly held corporation like AMREP with the responsibility of making quarterly financial reports to its shareholders may not coincide with the long-term interests of a community. In our culture the self-interest of the individual has often supplanted the interests of the community as a whole. And yet sustained and sustainable prosperity is in everyone's interest.

Before the era of abundant and inexpensive energy supplies, there were practices of architecture and planning—evolved out of necessity—that reflected an acute awareness of the climatic and topographic conditions particular to a site or region. Just such an awareness resulted in the building traditions of Ancestral Puebloans in the desert Southwest. The settlement of Mesa Verde, for example, is based on a remarkable human collaboration with topography and climate. The cliff dwellings are built in canyons that dissect a relatively flat tableland or mesa that tilts to the south. Over a fifteen-mile stretch the elevation varies from 8,500 feet at the northern escarpment to about 6,500 feet at the southern end. This gentle tilt of the land toward the sun results in greater solar radiation and accounts for a slightly longer frost-free season for growing corn than that of the surrounding Montezuma Valley (Erdman, Douglas, and Marr 1969:47–58). The longer growing season, in addition to the increased precipitation due to the higher elevation, may explain why Mesa Verde was occupied in the first place. It would take an acute awareness of the environment to recognize this advantage. But in the unforgiving environment of the desert, such an awareness would have been critical for survival. There is an equally elegant relationship between the human settlement of Mesa Verde and its geology. Cliff Palace, for example, is located in an alcove created at an interface between a stratum of sandstone and a stratum of shale that outcrops on the steep canyon slopes (15–16) (figure 11.3). As water seeps down through the sandstone it meets the impervious shale, which forces it to migrate laterally to the canyon walls. There, a process of freezing and thawing undercuts

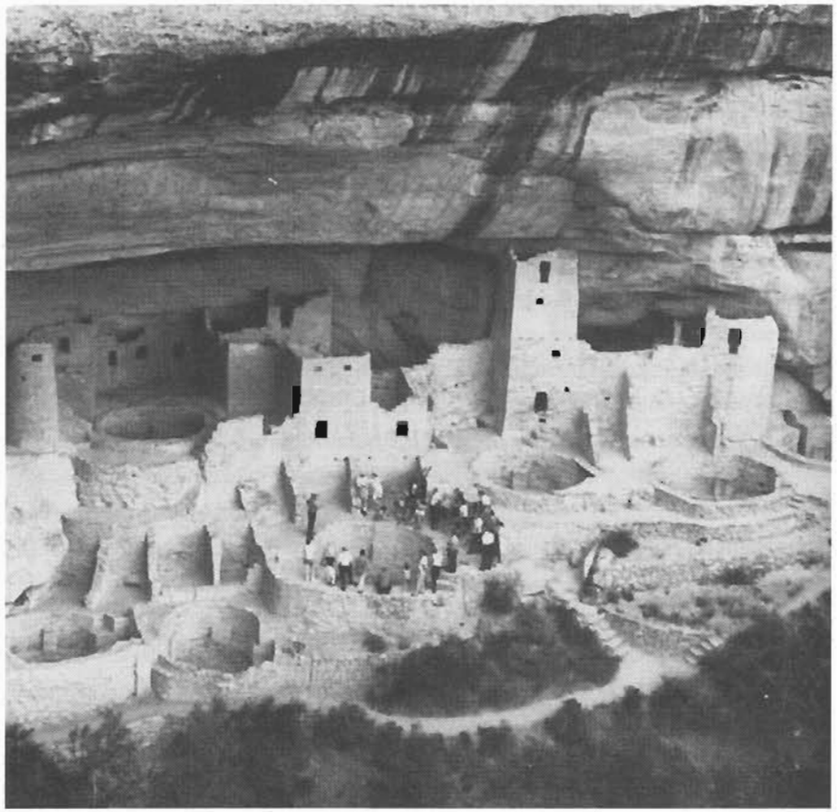

Fig. 11.3 Cliff Palace at Mesa Verde. Photo by Anthony Anella.

the sandstone cliff where it is in contact with the impervious shale. This weathering process produces not only the alcove that shelters Cliff Palace but also the very stones Ancestral Puebloans used to build it! At Mesa Verde, the architecture is given meaning by an order established by geology and by a synergy that occurs when human design interacts intelligently with nature.

At Chaco Canyon the architecture is given meaning by an order established by astronomy and by a sophisticated awareness of the solar and lunar cycles. The major buildings at Chaco Canyon are part of a complex and intricate building project based on this awareness of astronomy (Sofaer 1997:88). Pueblo Bonito, for example, commemorates the solar cycle in the cardinal orientation of its walls (figure 11.4). According to Anna Sofaer in her essay "The Primary Architecture of the Chacoan Culture," "Each day at meridian passage of the sun, the mid-wall [of Pueblo Bonito] which approximately divides the massive structure casts no shadow. Similarly the middle of the sun's yearly passage is marked at Pueblo Bonito as the equinox sun is seen rising and setting closely in line with the western half

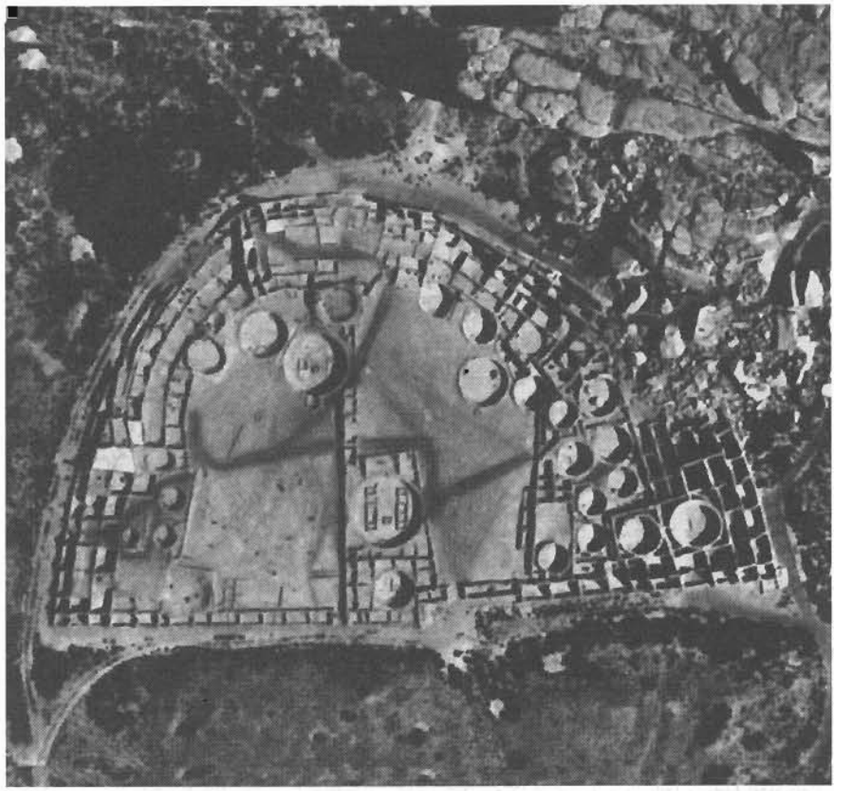

Fig. 11.4 Pueblo Bonito at Chaco Canyon. Photo courtesy National Park Service.

of its south wall. Thus the middle of the sun's daily and yearly journeys are visibly in alignment with the major features of this building which is at the middle of the Chacoan world" (116). Sofaer and others make a compelling case for how the synchronization and integration of the solar and lunar cycles determine the design of the major buildings at Chaco Canyon in terms of their orientation, their internal geometries, and their alignment with each other. It would take an acute awareness of the movement of the sun and moon to recognize these cycles and a profound sensibility to integrate these cycles into the design of Chacoan architecture. Such an awareness and sensitivity was no doubt critical in an environment where survival was a delicate human dance with the elements of sun, wind, and water.

What the Mesa Verde and Chaco Canyon examples teach us is enlightened self-interest predicated on a simple assumption: that man is a part of nature, not separate from it. Out of the necessity of surviving in an arid and unforgiving land, they offer an example of tough-minded pragmatism and grace: the kind of

pragmatism that recognizes the ethical and practical expedience of preserving the integrity and stability of the land for future generations; the kind of grace that occurs when human design collaborates with the wonder and the beauty of nature. Places such as Mesa Verde and Chaco Canyon serve as pedagogical models. We may never return to those now forgotten traditional ways of building, but neither can we afford the luxury that has allowed us to be as wasteful of our resources or as oblivious to our environment as we have been in the recent past.

La Luz, designed by architect Antoine Predock with the creative and visionary sponsorship of developer Ray Graham, offers an example of a contemporary housing development looking back at older traditions and reinterpreting them in innovative ways. La Luz asserts not just modern but far-sighted principles of open space and community planning in direct response to the climate and the site. La Luz clusters its housing in order to preserve open space while achieving the housing densities necessary to make it economically feasible. And it did so back in the days when land was still relatively inexpensive in the Albuquerque Metropolitan Area and before "sprawl" had become a buzzword of the "New Urbanists." La Luz was built with a pre-central-air-conditioning sensibility regarding the climate. As an artifact of our culture it is an anomaly: it embodies values that are related to the Ancestral Puebloan building tradition in its reverence for the landscape and nature.

Perhaps one reason La Luz has never been emulated in the marketplace is precisely because it is a cultural anomaly. In spite of the fact that it has been fully occupied since its construction and in spite of the fact that it has appreciated in value over a long period of time at an average annual rate of nearly 14 percent, realtors report that prospective buyers still hesitate at buying a townhouse that shares common walls with its neighbors. Never mind that it is almost impossible to find a single unit that has its privacy or its views compromised by any of the neighboring houses. And never mind that by gracefully stepping the houses up the natural topography so that each house has an unobstructed view of the Sandia Mountains to the east, La Luz conveys a sense of open space lacking in most suburban developments, and at River's Edge I in particular. We Americans like our ranchettes. According to Gary L. Wells, the qualifying broker at the Rio Rancho office of Coldwell Banker Legacy, "Price sensitivity has kept really well-built developments like La Luz from happening. Also, in general, more people prefer detached housing to attached housing."[5]

Another reason La Luz has not been emulated may have to do with the conventions of development. Developers understandably favor quick returns on their investments in order to shorten their exposure to interest payments required by debt financing of the construction loan. La Luz was developed by someone with deep pockets who had the staying power to be patient long enough for the market to first recognize and then accept the innovation. Further, developers are not

rewarded by the appreciation of long-term value. They are only rewarded by the profit margin at the time of the initial sale. The appreciation of long-term value rewards the buyer: the homeowner who will invest the lion's share of his or her net worth in paying off the mortgage. It also rewards the community.

In 1891 the landscape architect Frederick Law Olmsted Jr. observed that "a local park adds more to the value of the remaining land in the residential area which it serves than the value of the land withdrawn to create it" (as cited in Fausold and Lilieholm 1996:8). This enhancement value of open space influenced the thinking of developer Ray Graham and architect Antoine Predock who preserved two hundred acres of land to the east of La Luz as perpetual open space. Mr. Olmsted's observation is substantiated by several empirical studies measuring the enhancement value of open space that are cited in a Lincoln Institute of Land Policy Research Paper by Charles J. Fausold and Robert J. Lilieholm. For example, a 1967 study of a ten-acre neighborhood park in Lubbock, Texas, found that "within a two-and-one-half block area around the park, land values declined with distance from the park" (8). This relationship was true for the sales price of land only—not houses and land—a fact with revealing implications for land developers. In Boulder, Colorado, a 1978 study found that "the existence of greenbelts had a significant impact on adjacent residential property values." The relationship proved to be linear: a $4.20 decrease in the price of residential property for each foot away from the greenbelt. The aggregate property value in one of the neighborhoods studied was approximately $5.4 million greater than it would have been without the greenbelt. This resulted in an additional annual neighborhood property tax revenue of $500,000 (9).

These empirical studies quantify the fiscal and economic implications of open space preservation. They demonstrate that, as Mr. Olmsted observed, open space does affect the surrounding land market in positive ways—both for the individual property owners as well as for the local governments that depend on property tax for operating revenue. Unfortunately, the reverse is also true. Poor planning can cancel the enhancement value of open space. Witness River's Edge where the design of open space was an afterthought. Not until the fall of 1992 did the city of Rio Rancho enlist Dekker/Perich and Associates P.A. and their subconsultants Campbell Okuma Perkins Associates Inc. to prepare a development plan for the River's Edge Open Space. At that time River's Edge I and III contained no parkland, and River's Edge II had a small neighborhood park under construction. The result of this poor planning is that the River's Edge Open Space was forced to occupy the leftover space between the river and the preexisting residential development—a missed opportunity. In contrast, when thoughtfully designed to be integrated into a neighborhood, open space preservation contributes not only to the intangible value of making more enjoyable places to live, but also to the economic bottom line. The economic implications of open space preservation

and other quality of life issues prompt a reassessment of the conventional wisdom about the consequences of development and conservation.

Two facts lead us to a critical question. First, developers are not rewarded by the appreciation of long-term value; they are only rewarded by the profit margin at the time of the initial sale. Second, the enhancement value of open space contributes positively both to the individual property owner's equity and to the local government, which depends on property tax for operating revenue. The critical question is this: how can the short-term profit that motivates the individual developer be harnessed to the long-term creation of real property value?

Conservation land planning suggests an answer. As an alternative to the conventional pattern of land development typified by River's Edge, conservation land planning is premised on preserving the long-term integrity of the natural landscape as a value-adding principle of development. It is similar to the settlement pattern of Ancestral Puebloans and La Luz in this regard. It is based on a design process known as "sieve mapping," which identifies the conservation value of the land and demonstrates how to capitalize on this value by allowing for carefully designed development to be located in appropriate places on the land. Sieve mapping was refined in the 1960s by Ian McHarg in his widely acclaimed book *Design with Nature*, and more recently by Randall G. Arendt in *Conservation Design for Subdivisions*. It is a process that promotes a *qualitative* analysis of the land to determine where and where not to build rather than the *quantitative* analysis of conventional development. The qualitative analysis of conservation development focuses on what intrinsic qualities of the land enhance the long-term value of the development and on protecting those qualities. In contrast, the quantitative analysis of conventional development focuses on the number of lots and on the other factors of development that influence the short-term conversion of land value into cash.

Conservation land planning is based on the following six-step design process.[6]

Step One: Identify the Conservation Areas

In the design of a conservation development the first and most important step is to identify the land that is to be preserved. A logical criterion for this analysis is to protect the land that most enhances the long-term value of the remaining land to be developed. However, this depends on subjective judgment. What intrinsic qualities of the land are most valuable? To a developer? To a homeowner? To an ecologist? These different value systems may result in conflict and compromise. But what is most important and what cannot be stressed enough is that the conservation design process begins by looking at the land and letting the existing features of the land determine where and where not to build.

This first step helps ensure that the design process is rooted in the landscape and that the final product is not arbitrary. It is best accomplished by

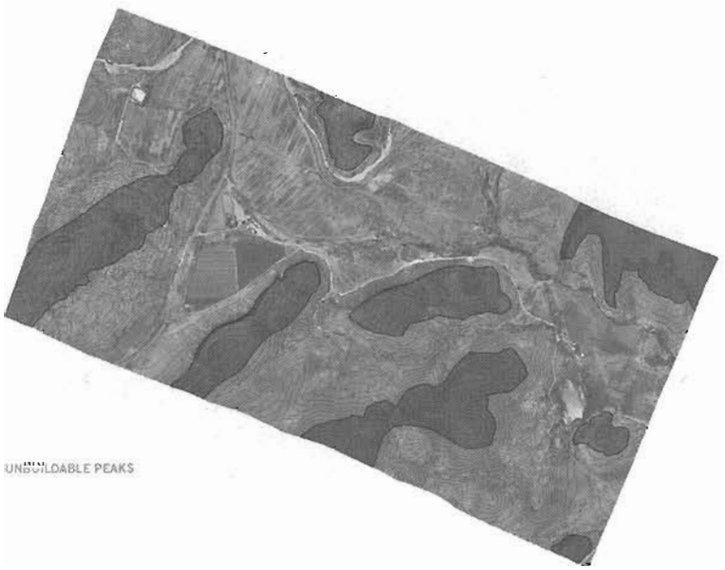

Fig. 11.5 Non-buildable Peaks: To protect the natural horizon from man-made structures, this overlay maps the hills and ridges down to forty contour feet below the top of the hill or ridge as being off-limits to development. Illustration by Anthony Anella.

walking the land in order to gain a thorough personal familiarity with it, and discovering its meaning in the process. This firsthand experience can be supplemented by listening to the insights of the people who have lived on the land during all four seasons. Where does that arroyo go? Where do the seasonal winds come from? What are the most significant features in the landscape in terms of topography, climate, drainage patterns, wildlife habitat, agricultural lands, cultural sites, views into the site from existing public roads, and views from the site toward external landscape features such as distant mountain ranges? All important features are mapped in the field. In this way the maps and the contours stop being mere abstractions.

Step Two: Map the Information

The second step is to create overlay maps. Each overlay corresponds to a separate feature of the landscape to be preserved. Each overlay represents a priority for conservation based on a firsthand understanding of what is special about the landscape. For example, in order to keep the natural horizon free from man-made structures the hills and ridges down to forty feet below the tops are mapped as being off limits to development (figure 11.5). In order to protect historic and archaeological sites these areas are mapped as being off-limits to development (figure 11.6). Prime agricultural land is mapped for protection (figure 11.7) as are

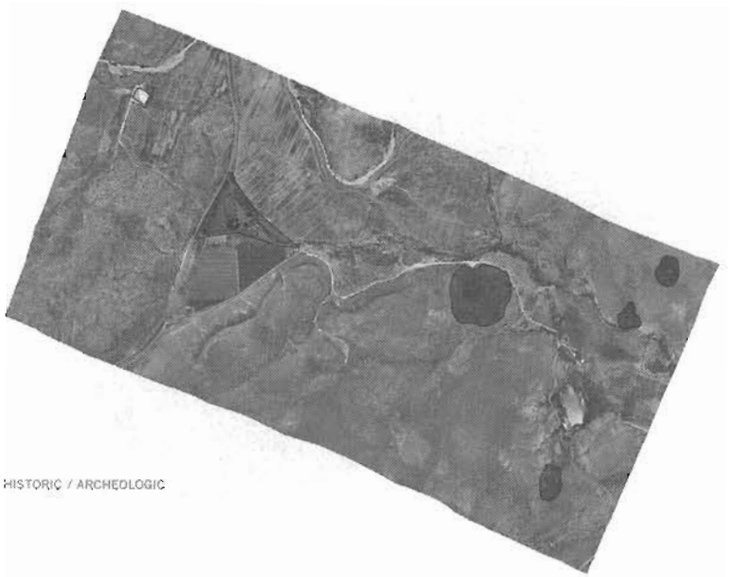

Fig. 11.6 Historic and Archaeological Sites: This overlay corresponds to historic and archaeological sites. This land is being protected from development in order to preserve the cultural heritage left by previous inhabitants. Illustration by Anthony Anella.

Fig. 11.7 Prime Agricultural Land: This overlay corresponds to prime agricultural land that is being protected from development in order to preserve agricultural productivity. Illustration by Anthony Anella.

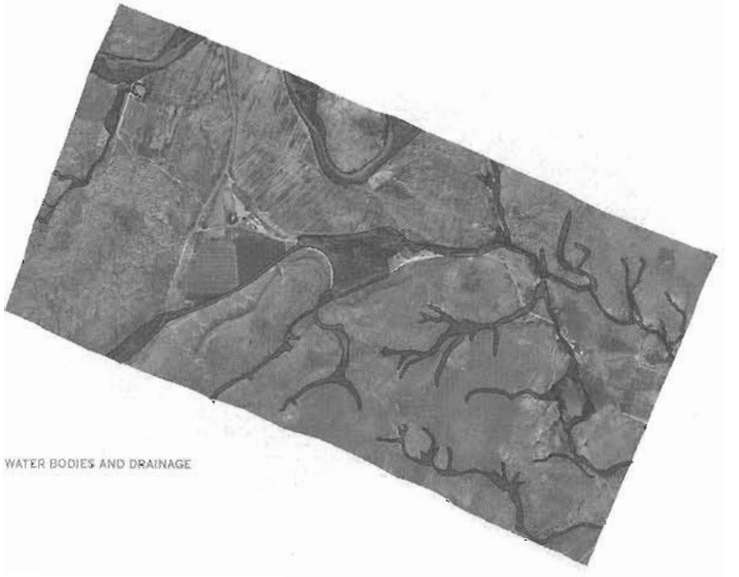

Fig. 11.8 Water Bodies and Drainage: This overlay corresponds to land located within 150 feet on either side of a water body or natural drainage system. This land is being protected from development in order to preserve the natural drainage pattern of the land. Illustration by Anthony Anella.

water bodies and drainage (figure 11.8), wildlife habitat (figure 11.9), and steep slopes (figure 11.10). The public "viewshed" (figure 11.11) is identified as that part of the land that is visible from the highway. By protecting this viewshed, the experience of driving through the rural landscape leading up to the homesites is preserved for both the homeowners and the public.

Step Three: Synthesize the Information

The third step is to create a composite of all the overlays. What is revealed is an overall pattern of conservation priorities. It is an organic pattern based on what is perceived to be important for protection. The land that falls through the "sieve" of conservation priorities is the land that is appropriate for development. *It is also the land whose value is most enhanced by the protection of what is not developed.* The gray area on the composite map of the conservation areas (figure 11.12) becomes the red area on the map of house sites relative to buildable land (figure 11.13).

Step Four: Designate the House Sites

Designating the house sites within the areas identified as being appropriate for development is best accomplished by walking the land and field-verifying the optimal sites based on views to the surrounding landscape, views to the other house

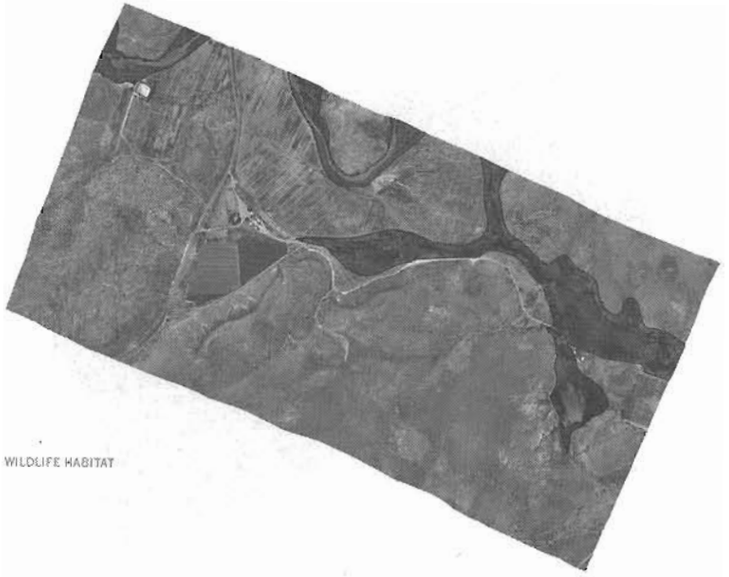

Fig. 11.9 Wildlife Habitat: This overlay corresponds to wildlife habitat (roughly corresponding to water bodies and drainage). This land is being protected from development in order to preserve the natural habitats of wildlife. Illustration by Anthony Anella.

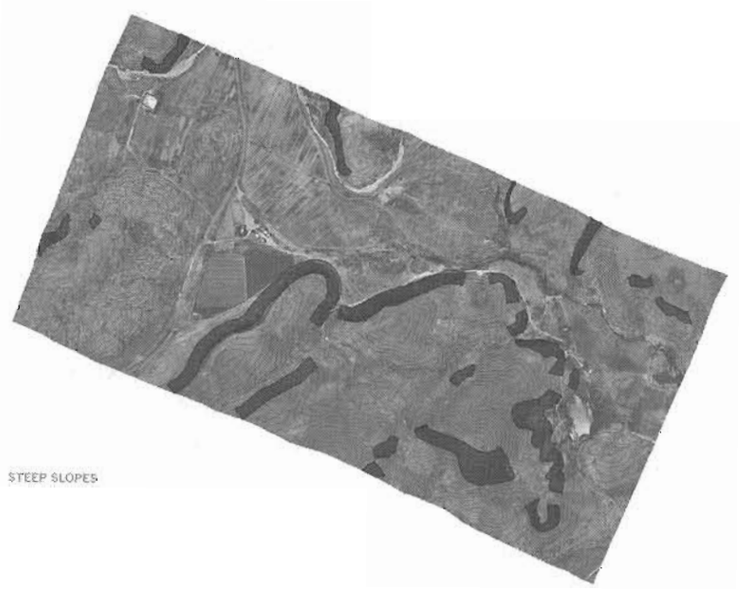

Fig. 11.10 Steep Slopes: This overlay corresponds to the land where the slope exceeds 25 percent. This land is being protected from development because of the damage due to erosion caused by building on steep slopes. Illustration by Anthony Anella.

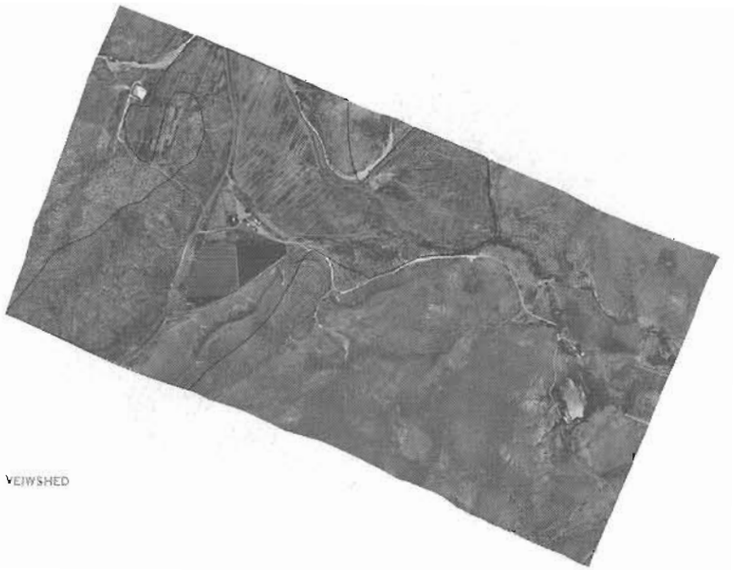

Fig. 11.11 Public Viewshed: The public viewshed is identified as that part of the study area that is visible from the public roadway. To protect this area it is mapped as being off-limits to development. By protecting the viewshed, the experience of driving through the rural landscape leading up to the house sites is preserved for both the homeowners and the public. Illustration by Anthony Anella.

sites, and the relationship of each site to the landscape (topography, vegetation, water) and the cycle of the seasons (wind, sun, precipitation) (figure 11.14). Of the house sites shown in the Conservation Development (figure 11.15), all but three are concealed from view of the other house sites by taking advantage of the topography. To prove the credibility of each house site, photographs are taken to document the relationship of the site to the landscape. Further, an analytical diagram of each site relative to the features in the landscape is created. These diagrams have the potential to serve as a tool for better understanding the land, marketing it for site-sensitive development, and helping to ensure that the individual houses complement the site-sensitive quality of the overall development.

Step Five: Lay Out the Roads

Laying out the roads is based on the following principles:

1. Avoid crossing areas prioritized for conservation.
2. Make the roads as inconspicuous from the house sites as possible by following the contours and by avoiding long straight stretches.
3. Minimize the length and cost of new roads.
4. Use existing roads where possible.

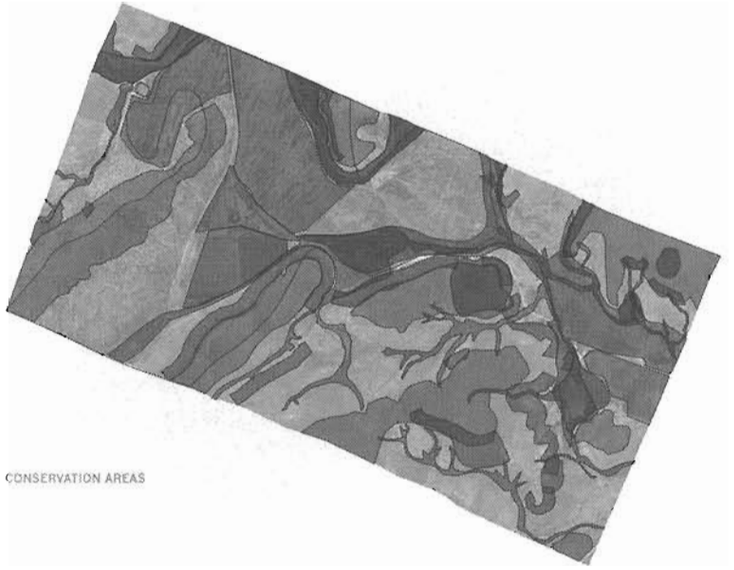

Fig. 11.12 Conservation Areas: This is a composite of the preceding maps. What is revealed is a pattern of conservation priorities. It is an organic pattern based on what is perceived to be important for protection. The land that falls through the "sieve" of conservation priorities is the land that is most appropriate for development. It is also the land whose value is most enhanced by the protection of what is not developed. The gray area on this composite map of the conservation areas becomes the red area on the following map of buildable land. Illustration by Anthony Anella.

Fig. 11.13 Buildable Land: The red area on this map corresponds to the gray area of the preceding map of conservation areas. It is the land that has fallen through the "sieve" of conservation priorities. Illustration by Anthony Anella.

Fig. 11.14 House Sites Relative to Buildable Land: Designating the house sites within the areas identified as being appropriate for development is best accomplished by walking the land and field-verifying the optimal sites based on views to the surrounding landscape, views to the other house sites, and the relationship of each site to the landscape (topography, vegetation, water) and the cycle of the seasons (wind, sun, precipitation). Illustration by Anthony Anella.

Designing roads based on these conservation principles may add to the initial cost, but these costs are offset by the enhanced value of the house sites. This contrasts with the road design criterion in conventional development that is exclusively quantitative: minimize costs by keeping roads short and avoiding steep slopes.

Step Six: Draw the Lot Lines

Once the conservation areas have been identified, the house sites designated, and the road alignments determined, drawing the lot lines is a mere formality. However, there are at least two possible legal frameworks for ownership to accomplish this formality. One is to subdivide all the land into plats of fee-simple ownership. The other is to create an open space development with smaller platted areas of fee-simple property and the owners sharing an undivided interest in the remaining open space. The remaining land—whether individually or jointly owned—is protected from development through conservation easements.

Figure 11.15 depicts a conservation development with the owners sharing an undivided interest in the open space. This approach offers several advantages. By only allowing the smaller lots to be fenced, the jointly owned areas are left

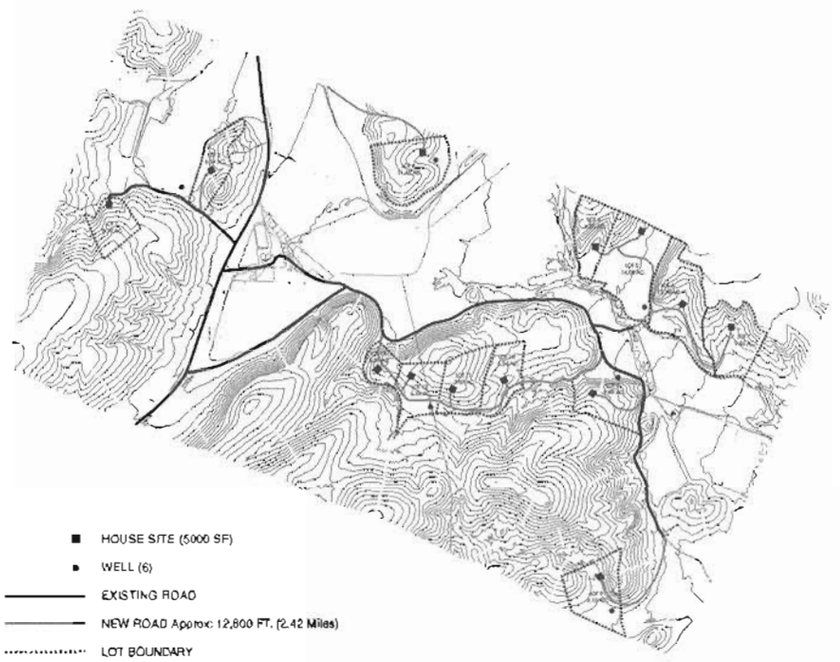

Fig. 11.15 Conservation Development: Once the conservation areas have been identified, the house sites designated, and the road alignments determined, drawing the lot lines is a mere formality. However there are at least two possible legal frameworks for accomplishing this formality. One is to subdivide all the land into plats of fee-simple ownership. The other is to create an open-space development with smaller platted areas of fee-simple property and the owners sharing an undivided interest in the remaining open space. In either case, houses may only be built on the designated house sites. The remaining land—whether individually or jointly owned—is protected from development by a conservation easement. This figure depicts an open-space development. Illustration by Anthony Anella.

completely open for shared uses such as horseback riding. The smaller lot sizes also minimize the maintenance responsibilities for the individual owner. The cost to maintain the common open space is shared by the other homeowners. The main advantage to the buyer is that of owning a house site that is surrounded by open space. Figure 11.16 depicts a conventional development. It is important to note that even though the lot sizes are smaller in the conservation development than the lot sizes in the conventional development, the number of lots remains the same. For purposes of comparison, the density of development is neutral. Keeping the number of lots constant allows the comparison to emphasize the qualitative advantages of the conservation development and its impact on lot prices. What would the buyer be willing to pay more for—a lot surrounded by protected land or a lot surrounded by private land with unknown future development possibilities?

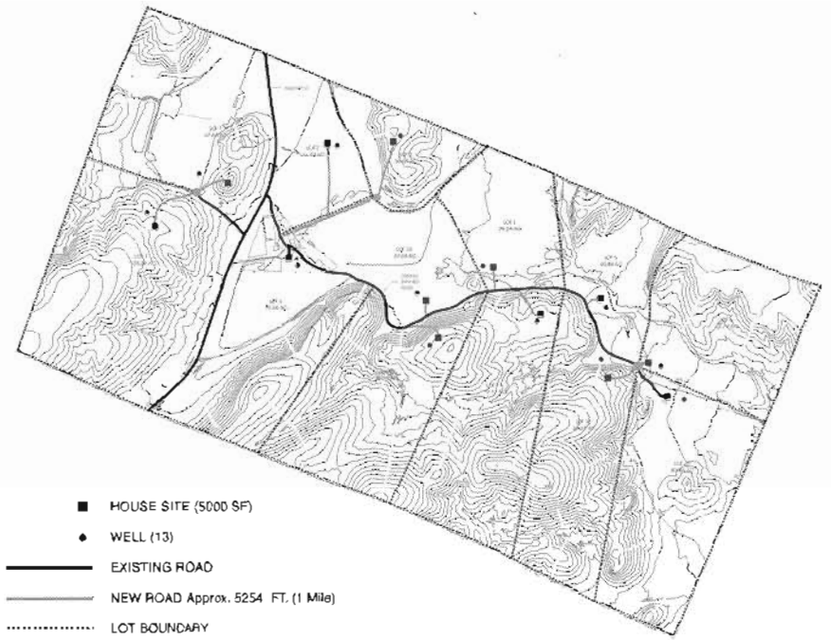

Fig. 11.16 Conventional Development: It is important to note that even though the lot sizes are smaller in the conservation development compared with the lot sizes in this conventional development, the number of lots remains the same. For purposes of comparison, the density of the development is neutral. Keeping the number of lots constant allows the comparison to emphasize the qualitative advantages of the conservation development and its impact on lot prices. What would the buyer be willing to pay more for—a lot surrounded by protected land or a lot surrounded by unprotected land with unknown future development possibilities? Illustration by Anthony Anella.

Conclusion

Unlike the Ancestral Puebloans we are buffered from the elements by central heating and air conditioning. We have lost much of our vulnerability and therefore our sensitivity to the environment. This is evidenced by the prevailing land settlement pattern we see today in contrast to the prehistoric Ancestral Puebloan settlement pattern of the same landscape. We have also lost our sense of belonging to a larger natural whole. The contemporary land ethic is motivated by short-term profit. It tends to destroy long-term value by ignoring the visual and environmental impacts of new development on the very resources that make the land attractive for development in the first place. This is our modern dilemma and the predicament of conventional development. It would be futile to try to ignore the dilemma posed by the modern world by retreating into simpler agrarian existences. But we can learn to revere again the basic premise that sustained the Ancestral Puebloans: that man is a part of nature, not separate from it. We can learn again to build with the land and not merely on it. As a design process,

"sieve mapping" identifies the conservation value of the land and demonstrates how to capitalize on this value. It works within the conceptual framework of economic self-interest as a way of convincing both the landowner and the developer to adopt conservation as a profit-making principle of enlightened development. However, in so doing, it seeks to change the way the land and man's relationship to it are viewed. It seeks to shift the contemporary ethic of extracting immediate value from the land as an individual privilege to a new ethic of creating long-term value through ecologically based design and planning. It seeks to provide the contemporary practice of land development with a systematic process for protecting the integrity of the land for future generations in a way that is economically expedient as well as environmentally ethical.

Notes

1. Based on information from the Southwest Multiple Listing Service Inc. provided to me on August 28, 2001, by Gary L. Wells, the qualifying broker at the Rio Rancho office of Coldwell Banker Legacy.
2. See note 1 supra.
3. See note 1 supra.
4. Based on information provided to me on August 23, 2001, by Nancy Rose, a resident of La Luz since 1973 and a former Hertzmark Parnegg realtor with over twenty years' experience selling La Luz townhouses, and by Robert Peters, FAIA, a resident of La Luz since 1974.
5. Conversation with Gary L. Wells, the qualifying broker at the Rio Rancho office of Coldwell Banker Legacy on August 28, 2001.
6. This six-step design process and the accompanying illustrations are from *The Open Lands Demonstration Project* by Anthony Anella with photographs by Edward Ranney. This project was funded by grants from the Graham Foundation for Advanced Studies in the Fine Arts, the Ucross Foundation, and the Koldyke Family Foundation.

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