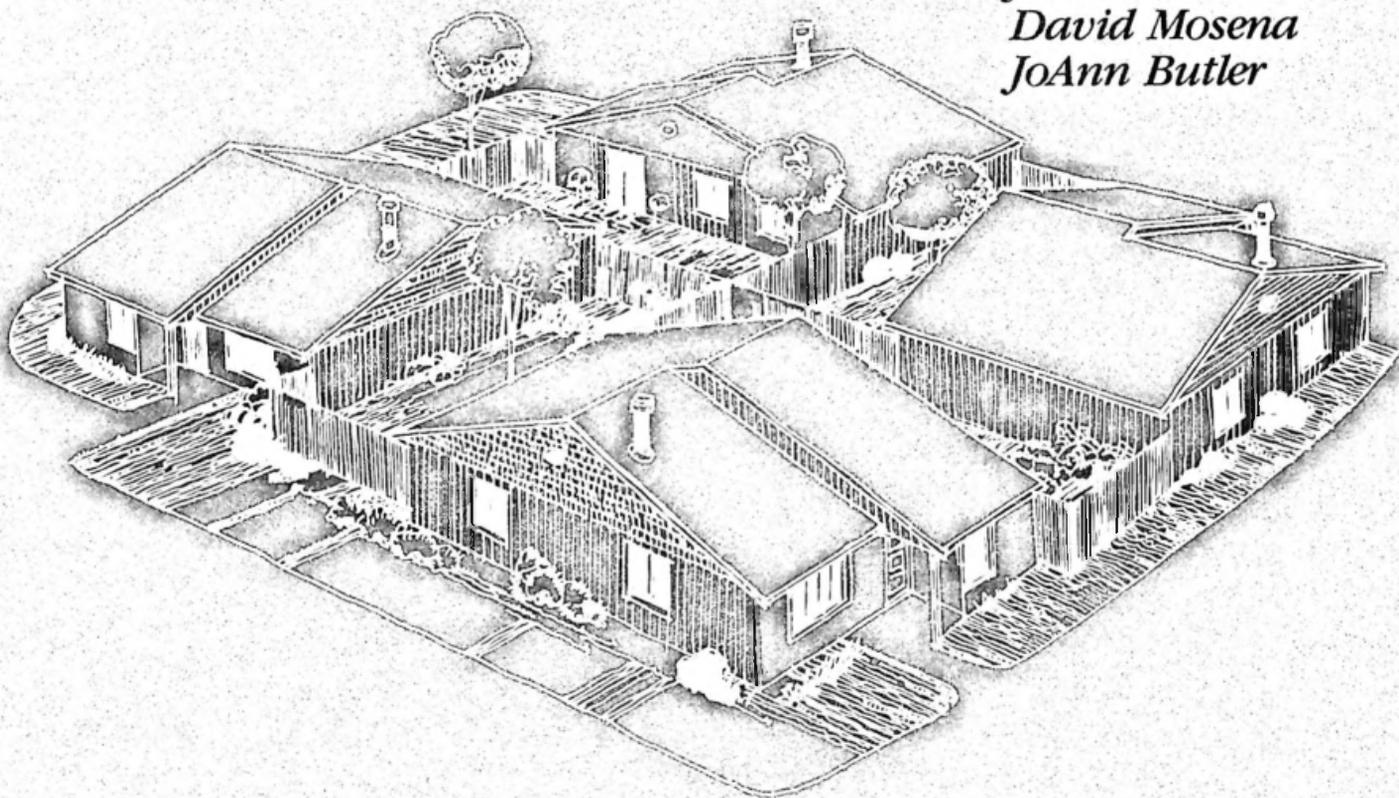


*Affordable
Single-Family
Housing*
*A Review of
Development Standards*

*Welford Sanders
Judith Getzels
David Mosena
JoAnn Butler*



**The Joint
Venture for
Affordable
Housing**

American Planning Association
Council of State Community Affairs Agencies
International City Management Association
National Association of Counties
National Association of Home Builders
National Conference of State Legislatures
National Governors' Association
Urban Land Institute
U.S. Department of Housing and Urban Development



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Affordable Single-Family Housing A Review of Development Standards

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August 1984

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Foreword

Communities across America are awakening to the need for more affordable housing—for homes priced at levels that are realistic for average American families.

This report presents case studies of what various communities are doing to modify zoning, site, and design requirements that in the past have kept home prices unnecessarily high. Whether in California, Florida, Texas, or Colorado, these communities have found that housing costs can be reduced without sacrificing significant comfort, safety, quality, or liveability.

The American Dream of home ownership, and the American standard of the detached single-family home need not die. Smaller lot sizes, innovations in sites and designs, modified construction techniques and the use of new materials can all contribute to affordable homes. This report explores some of the means by which the goal of affordability can be achieved.

I commend the American Planning Association for publishing this study. The APA's members and staff have contributed significantly to the public/private Joint Venture for Affordable Housing, which is working to encourage innovations like these all across America. The continued efforts of the APA and other Joint Venture partners will make it possible for any American community to have affordable housing.

*Samuel R. Pierce, Jr., Secretary
U.S. Department of Housing
and Urban Development*

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Executive Summary

The rising cost of housing has generated considerable concern during the past several years. Affordable new single-family detached houses in particular are in short supply, although this form of housing continues to be preferred by consumers. One of the factors contributing to these high costs is outmoded land use regulation.

Within the past few years, a number of local governments have tried to remedy this situation. In an attempt to meet the need for affordable new single-family housing, they have revised their land use standards or promoted affordable housing development under existing planned unit development (PUD) ordinances.

This report, based on a year-long study, examines residential development standards in 13 communities in which 18 affordable housing developments were recently built. The report, which focuses on single-family detached housing, compares old and revised standards. It also examines the application of these standards in the affordable projects that were built. Part I of the report discusses the overall findings of APA's study and Part II presents in-depth case studies of four communities.

Part One. Standards: Summary of Findings

1. Communities encouraged the provision of affordable single-family detached housing primarily by reducing lot area, frontage, and setback requirements.

Lot Areas: Minimum lot sizes permitted in the communities that revised their standards fell within a range of 3,600 to 5,000 square feet—considerably smaller than the 12,800 square feet that represented the average finished residential lot size in the country in 1980. Projects built under PUDs achieved dramatic reductions, with the smallest lot areas below 3,000 square feet. Minimum lot sizes in PUDs, however, ranged widely.

Frontage: All communities that revised their standards reduced their lot frontage requirements—

that is, the width of the front lot line. New frontage requirements ranged between 30 and 42 feet; one community set no minimum requirement at all, but chose instead to determine appropriate frontage through site plan review. Communities set no minimum frontage requirements for single-family detached housing built under PUD provisions.

Setbacks: All communities with revised standards permitted one side yard to be reduced to zero to allow the dwelling unit to be sited on the side lot line. A minimum of 10 feet was set for the remaining side-yard setback. These communities reduced their rear-yard setbacks to between 5 and 12 feet or dispensed with a rear setback requirement entirely. Only two communities, however, unconditionally reduced their front-yard setback. Most PUD ordinances set no requirements for setbacks except for lots on the perimeter of the project.

2. Developers of affordable housing in many cases did not build to minimum requirements. Their perception of local market preferences often led them to exceed the standards.

3. Communities seldom modified their site improvement standards for streets and sidewalks, drainage, storm sewers, and other utilities to encourage affordable housing development.

4. As lot area, frontage, and setbacks were reduced, planners and developers found it important to adjust building and site designs. Approaches that were used included:

- Eliminating one side yard and siting dwelling units on the side lot line—particularly as lots became smaller than 5,000 square feet.
- Integrating indoor and outdoor areas for more efficient use of the limited space provided by downsized dwelling units on small lots.
- Varying the exterior design and siting of buildings to improve the streetscape.

5. The main trade-offs that occurred as lots became smaller involved parking, open space,

and the privacy of individual residential units. Local governments made special efforts to compensate for problems in these areas.

Parking: The experience of the communities studied suggested that when frontage is reduced below 50 feet and front setbacks are less than 20 to 25 feet, parking and garages are difficult to accommodate at the front of the lot and usually dominate the streetscape. Some communities encouraged the use of alleys so that parking could be placed at the rear of the lot.

Open Space: When lots fall below 4,000 square feet, and private open space becomes increasingly limited, common open space is usually needed.

Privacy: Small-lot development requires landscaping, fences, or walls to ensure privacy between dwellings and to minimize the impact of street traffic.

6. Flexibility was the key to regulations that encouraged the development of high-quality affordable housing. Local governments were able to build flexibility into conventional regulations as well as PUD regulations.

7. Only two of the 13 communities studied attempted to regulate the price of housing developed under their new standards or PUD provisions.

8. Community acceptance of small-lot development—when it was an issue—depended on a project's compatibility with existing residential development and a developer's willingness to share the costs of public facilities that might be required—such as schools or parks.

Part Two. Case Studies

The major findings of Part One of the report are examined in greater detail in Part Two in case studies of nine affordable housing projects built in four communities that had recently revised their development standards.

San Antonio, Texas: Two projects built in San Antonio, both small-lot developments, illustrate the value of the flexible standards that were included in the community's new ordinance. One of the projects was built in San Antonio's extraterritorial jurisdiction shortly before the city revised its ordinance to permit a new small-lot home district. The second project was developed after the new ordinance provisions were in effect. The new provisions permitted and encouraged reductions in lot size, frontage, and setbacks; they also included incentives that encouraged variety in building siting and in parking accommodations within the project. San Antonio's provisions required no site plan review. A comparison of the two projects favors the project built under the new provisions. The new flexible provisions allowed the developer to design a project that was both affordable and aesthetically pleasing.

Riverside County, California: The county developed a new affordable housing district that reduced dimensional requirements and used a price control program to ensure that developers' costs savings were passed on to consumers. Two projects that were built under the new regulations were examined. One project was built close to the minimum development standards; the developer of the other project chose to exceed the minimum requirements. The market for both developments was strong, although it was evident that the project that exceeded the minimum standards allowed for better design of parking areas as well as more private open space. The price-control system was effective—that is, units were less expensive than the median price of units in the area. Developers, however, believed that the price-control system was cumbersome and left little room for changes if there were a downturn in the economy. Site plan review was required for all developments in the new district; the review process appeared to cause no difficulties.

Dade County, Florida: Three small-lot projects developed under the county's zero lot line provisions, which encourage affordable housing, were examined. The provisions were based on extensive research and were intended to promote good design—that is, a design that ensures privacy and the efficient use of limited interior and exterior space. Despite the requirements for specific design features, the provisions allowed developers considerable flexibility.

Fort Collins, Colorado: This community redesigned its PUD regulations to provide developers with maximum flexibility. Fort Collins's innovative new ordinance encouraged more concentrated mixed-use and higher-density residential development, and contained provisions to ensure that new development was compatible with existing development, while still allowing for imaginative design and unconventional housing types. Each proposed development was scored according to a variety of design criteria. No density cap or predetermined limit on the number of units that could be built per acre was imposed when residential development was located near existing community facilities, such as transit stops, employment centers, shopping, parks, and day care centers.

Conclusions: Although revised lot size, frontage, and setback requirements are undoubtedly important in encouraging the production of affordable housing, it is evident on the basis of the projects studied that there were great variations in the quality of the housing produced. In these cases, what planners and developers learned was that affordable housing can and must be designed with attention to detail in order to retain the qualities that make single-family housing desirable. Small-lot housing requires some rethinking of standards for siting units, parking, outdoor space, and privacy. This study provides evidence that some useful approaches to dealing with these concerns have been developed.

Introduction

The rising cost of new housing has generated more attention than any other land use issue during the past several years. As the rise in the price of land, labor, materials, and capital began to outstrip the rise in median incomes in the 1970s, the supply of reasonably priced new housing—especially single-family detached housing—declined rapidly.

In areas of the country where land and development costs were highest, the only way to provide a new house at an affordable price appeared to be either to attach or to stack dwelling units. As a result, by 1980, attached and multifamily housing accounted for 40 percent of new housing starts, up from 25 percent in 1975. By 1982, 46 percent of new housing starts were for attached housing.¹

Homebuyers, however, continued to express a preference for the single-family house on its own lot. Such houses accounted for 88 percent of the homes—new and used—purchased in 1983.² As one housing expert put it, "Attached houses might woo buyers' affections when times are tough, . . . but in the end they will always go back to single-family detached."³ The market for new single-family detached housing at an affordable price remained largely unmet.

As the 1980s began, homebuilders considered how to cut costs to respond to this market. Building downsized houses on smaller lots appeared to be a logical way to meet some of the demand for single-family houses. In areas of the country where such houses were built, developers found them to be more marketable than attached and multifamily housing. The problem remained that development standards of many communities seriously restricted such housing. Standards governing density and lot size, frontage, setbacks, building orientation and siting, street widths and sidewalks, parking, open space,

drainage, and water systems limited the housing industry's ability to deliver an attractive, affordable house on a downsized lot. Development standards that were designed for an earlier period remained in effect—often adding unnecessary costs. These standards were increasingly being questioned.

A number of communities came up with answers; some revised their development standards and others encouraged the use of such flexible provisions as planned unit development (PUD) ordinances to permit more affordable, small-lot residential development. Developers and homebuilders actively supported these approaches, and residents of communities paid close attention to projects built under new and flexible standards to ensure that their interests were protected.

This report will examine how the new standards helped provide high-quality affordable housing. By looking specifically at communities where affordable housing projects were built, APA hopes to go beyond an abstract lesson to show what happens when standards are revised and/or made more flexible, and developers build accordingly.

Selection of Study Communities and Projects

In the summer of 1981, APA conducted a nationwide survey of 1,086 communities to identify those that had taken steps to ensure that their residential development standards were not overly restrictive. A major objective of that survey was to locate communities that had recently completed a comprehensive revision of their development regulations resulting in new standards that might help reduce the cost of housing.

The 1981 survey identified 171 communities that had completed a comprehensive revision of their development standards within the previous five years. Two years later, in support of the present work, APA returned to these 171 communities to identify those in which developers had built or were building single-family detached housing under new standards. In addition to the developments found in the original sample, other affordable projects were

1. Walter Updegrave, "Goodbye to the Detached House," *Builder*, January 1984, pp. 198-202.

2. John Pfister, "1983 Homebuyers' Survey: Single-Family Housing Comeback," *The Guarantor*, January/February 1984, pp. 12-13.

3. Updegrave, "Goodbye to the Detached House," p. 202.

located through APA's membership and through trade publications of the homebuilding industry. Over 100 affordable housing developments were finally identified. Of these developments, 18 projects in 13 communities were selected for further study. (See Table 1, page 4.)

The following criteria guided the selection of these 18 projects:

- the communities in which the projects were built (or approved for construction) had recently amended their development standards to encourage affordable housing, or had encouraged such development under existing flexible controls, such as PUD;
- developers had built or were building housing projects under the revised or flexible standards;
- both the planning departments and the developers were concerned with providing affordable housing in their communities;
- planning departments in the communities expressed a willingness to cooperate with the research team; and
- planners and developers were able to supply appropriate data.

All planning departments in the communities involved and all developers of the projects selected were interviewed by phone or by correspondence. Seven communities were visited for in-depth interviews and inspection of projects.

For the purposes of this study, the planners, builders, local officials, and realtors who were interviewed made the determination of affordability in each community. In each case APA asked that the housing developments to be considered should be basically unsubsidized, should not substantially deviate from the quality of conventional housing in the community, and should be priced at or below the median price of a new single-family detached home in the area. There was little disagreement locally among those interviewed about which developments satisfied the criteria. The market situation in all but two communities determined the prices. Riverside County, California, and Coon Rapids, Minnesota, each instituted a price-control system to help ensure that new housing was affordable.

It is significant to note that some of the provisions that were new to the communities studied have been on the books in a number of older communities for many years. These older communities were originally subdivided into small-lot neighborhoods before the enactment of modern land use regulations. Later zoning and subdivision ordinances in these communities incorporated development standards that retained provisions for small-lot development. But in many newer communities, and especially in counties and suburban areas that have experienced considerable growth over the past two decades, large-lot development has been the norm. For these communities, small-lot development represented an important departure.

Of course, a change in development standards alone does not necessarily make a housing project affordable. Planning departments and developers

reported that project costs in some of the cases examined were kept relatively low because of a number of factors. These factors included low land costs, innovative construction techniques, minimal site preparation, speedy review procedures, special financing packages, and efficient administration of the project. All of these contributed in one way or another to bring down the cost of housing.

Focus of the Project

This report focuses on the role that development standards play in the production of affordable housing. It will attempt to answer these questions:

1. What are the trade-offs—if any—that communities have to make when they decrease lot size, increase density, or revise other traditional requirements?
2. What are the problems that may occur under revised or flexible standards and how can they be avoided?

The report concentrates on standards as they apply to single-family detached housing, which continues to be what most young families want, and what the majority of builders are still building. Standards governing the development of traditional single-family housing are receiving the greatest pressure for change from builders and developers. And it is the possibility of an 800-square-foot house being built in their neighborhoods that residents are most uneasy about.

The focus on detached housing in this report is not intended to suggest that this form of housing is the best answer to the affordability problem. Ideally, of course, local development standards should allow for a mix of housing types. In the end, local market conditions and buyer preferences will determine the balance. Most experts agree, however, that regardless of what share of the market detached housing represents in the future, much of it will differ—especially if it is affordable—from traditional single-family housing. An official of the National Association of Home Builders recently predicted that over 60 percent of the detached homes built in the future will be on smaller lots, with some employing zero lot line siting and clustered site plans. If this prediction is correct—and there is little reason to suspect otherwise—then the standards that allow for affordable small-lot development will represent the standards most commonly used for development of single-family detached housing in the future. Local officials will need to know more about how such development can be effectively regulated.

This report is divided into two parts. Part One examines development regulations in 13 selected communities and the application of these regulations in 18 affordable housing projects. The findings of the study as a whole are reported in Part One.

Part Two presents four detailed case studies. Development standards and projects in San Antonio, Texas; Riverside County, California; Dade County, Florida; and Fort Collins, Colorado are examined. These four case studies indicate the variety of approaches that can be taken by communities that want to encourage the production of affordable single-family housing.

Part One. Standards

Single-family detached houses offer certain advantages to consumers—privacy, their own outdoor space, and control over their immediate environment. Developers, architects, and planners are making a special effort to retain these advantages while working to make these houses more affordable. The experiences of the communities studied reveal some consistent patterns in the ways in which affordable single-family housing is being provided as well as some consistent problems that the communities are working to solve.

The findings of APA's study of development standards will be discussed in this section. The projects studied were all new. How they will fare over time is a matter of continuing interest. As communities gain more experience with affordable housing, standards will undoubtedly undergo further change and refinement. At present, however, as the discussion below indicates, these communities have designed standards that can serve as examples for others that want to encourage similar development.

The findings below are based on information gathered from ordinances, site plans, project specifications, and interviews with planners and developers in 13 selected communities.

Lot Dimensions, Unit Size, and Density

Communities encouraged the provision of affordable single-family detached housing primarily by reducing lot area, frontage, and setback requirements.

In each of the projects studied, most of the savings in development costs that resulted from changes in development standards can be attributed to smaller lots, reduced frontage, and reduced setbacks. Developers reported that their biggest cost savings resulted from lower land and infrastructure improvement costs per unit due to the higher densities achieved by small-lot development. Higher density allowed land and improvement costs to be

spread over a larger number of units. In addition, reduced frontage and front-yard setbacks allowed for less pavement and sidewalk per unit, shorter utility runs, and reduced material costs.

Reduction in lot sizes, frontages, and setbacks permitted the construction of one or more affordable housing projects in each of the 13 communities shown in Table 1. These communities either revised their development standards to provide for the construction of affordable single-family detached housing or allowed developers to build such development under planned unit development (PUD) provisions. The discussion below examines both approaches.

Lot Areas. As Table 2 indicates, the minimum lot sizes permitted by the the communities that revised their standards fell within a range of 3,600 to 5,000 square feet. Clearly these lots were considerably smaller than the 12,800-square-foot residential lots that represented the average finished lot size in the country in 1980.⁴ It is significant, however, that only one of the nine projects built under these revised standards used the minimum lot size permitted. (See Table 3.) In fact, the Cobblestone project in Riverside County, California, and the Bird Road development in Dade County, Florida, each exceeded the minimum lot size permitted by more than 1,000 square feet. Developers indicated that their choice of lot size was based upon their perception of market demand; larger lots offering usable yard space without drastic downsizing of the house responded to that demand.

PUD provisions permitted even more dramatic reductions in lot size than revised standards. In each case, the projects studied that were built as PUDs were subject to no set minimum lot size requirements. As Table 4 indicates, the developer of the Redwood PUD in Fort Collins, Colorado, was permitted to use the "building footprint"—the portion of the site covered by the dwelling unit—as

4. *Land Review*, August 1981, p. 2.

Table 1. Affordable Housing Projects: Number of Units, Acreage, and Mix.

Jurisdiction	Project	Total Housing Units	Site Acreage	Housing Mix
1. Conventional Developments (Revised Standards)				
Riverside County, Calif.	Woodhaven	266	41	Single-Family Detached Only
	Cobblestone	393	80	Single-Family Detached Only
Dade County, Fla.	Bird Road	64	24	Single-Family Detached Only
	Oak Park	262	52	Single-Family Detached Only
	Bilbao	198	25	Single-Family Detached Only
San Antonio, Tex.	Stone Ridge	103	14.9	Single-Family Detached Only
Arlington, Tex.	Windmill	190	34.5	Single-Family Detached Only
	Springridge Addition	143	23.3	Single-Family Detached Only
Las Vegas, Nev.	Pinecrest	25	6.56	Single-Family Detached Only
2. Planned Unit Developments				
Phoenix, Ariz.	Cimarron	255	38	148 Single-Family Detached 107 Townhouses
Geneva, Ill.	Geneva East	928	170	440 Single-Family Detached 488 Multifamily Units
Thurston County, Wash. Shreveport, La.	Cottages	31	3.94	Single-Family Detached Only
	Cobblestone	307	22.8	72 Single-Family Detached 48 Multiplex Units 187 Townhouses
San Marcos, Calif.	Peacock Park	337	110	Single-Family Detached Only
Coon Rapids, Minn.	Shannon Park	181	31	140 Single-Family Detached 41 Townhouses
Elkhart County, Ind.	Mark VII West	10	3.58	Single-Family Detached Only (manufactured housing)
	Simonton Lake	15	4.35	Single-Family Detached Only (manufactured housing)
Fort Collins, Colo.	Redwood	235	43.29	Single-Family Detached Only (manufactured housing)

the lot area and to designate all outdoor area, except for a 10' x 12' private patio offered as an option, as common open space. Under this arrangement, most lots in this manufactured housing subdivision were about 1,320 square feet in a zoning district where the minimum lot size was otherwise 6,000 square feet.

Two other communities permitted single-family detached housing under their PUD provisions on lots that were less than 3,000 square feet. Thurston County, Washington, allowed the Cottages development to be built in Olympia on lots that averaged 2,226 square feet in a zoning district where conventional lots must be 12,500 square feet. Shreveport, Louisiana, permitted lots as small as 2,500 square feet in its Cobblestone development. (See Table 4.) Lots this small, however, usually required unconventional siting of buildings and clustered parking.

PUD provisions resulted in affordable developments that had the largest as well as the smallest lot sizes. Two manufactured housing projects built under PUD provisions in Elkhart County, Indiana, used lots that averaged over 10,000 and 14,000 square feet. While these lot sizes were more than twice the size of lots permitted in most of the other communities studied, they were still significantly smaller than the minimum lot sizes previously approved under the community's conventional zoning standards. Without this

reduction, the project would not have been economically feasible. In addition, the use of manufactured housing in these two developments allowed for units that were less costly than many of the conventionally built units on much smaller lots in other communities.⁵

Frontage. Each community permitted some reduction in lot frontage. Among the communities that revised their standards, Riverside County, California, made the greatest reduction in its requirement, allowing 50 percent less frontage than required for conventional development. (See Table 2.) Dade County, Florida, created a flexible standard by setting no minimum frontage requirement in its provisions for zero lot line (ZLL) development. Instead, the appropriateness of a proposed frontage was determined under site plan review. Dade County did, however, set minimum frontage requirements for such development when it occurred in its most restrictive single-family residential district. In that case, a minimum frontage of 45 feet for interior lots and 50 feet for perimeter lots was required. Most developers of projects built under revised standards

5. These two developments and the Cimarron project in Phoenix were among several Affordable Housing Demonstrations sponsored by HUD. See National Association of Home Builders Research Foundation, Inc., 1983, in Appendix D.

Table 2. Ordinance Revisions: Minimum Lot Area, Frontage, and Setbacks.

Jurisdiction	LOT AREA (Square Feet)		FRONTAGE (Linear Feet)		FRONT SETBACK (Linear Feet)		SIDE SETBACK (Linear Feet)		REAR SETBACK (Linear Feet)	
	Former Standard	Revised Standard	Former Standard	Revised Standard	Former Standard	Revised Standard	Former Standard	Revised Standard	Former Standard	Revised Standard
Riverside County, Calif.	7,200	3,600	60; minimum lot depth require- ment of 100	30; no lot depth requirement	20	10; 20 for garages that open parallel to the street	5	Subject to site plan review	10	Subject to site plan review
Dade County, Fla.	7,500	4,000; 4,500 in RU-1 district*	75	No numerical standard estab- lished. Provi- sions state that "each lot shall have a clear, direct front- age on public streets or (pri- vate) access ways." However, must be at least 45 when devel- opment occurs in RU-1 district and 50 for perimeter lots in this district.	25	5	7.5	One must be 0, the other must be at least 10	25	No requirement
San Antonio, Tex.	5,000	4,200	50	42	20	20; less if varied, and vehicular access is from rear	5 (sum of both must be at least 15)	5; 10 if Zero Lot Line	20	12; 5 if vehicular access is from rear
Arlington, Tex.	7,200	5,000; 6,000 if not Zero Lot Line	60	50; 60 if not Zero Lot Line	20	20 if vehicular access is from street; 5 if ac- cess from alley	5	5; 10 if Zero Lot Line	5	5 (No require- ment if Zero Lot Line)
Las Vegas, Nev.	6,500	4,000**	65	40**	20	10	5 (sum of both must be at least 14)	Total must be equal to 10; one may be 0	15	10

* Lots may be as small as 3,000 square feet, provided that the overall average lot size for all projects is either 4,000 or 4,500 square feet.

** . . . One-third of the lots in any block may range in size from less than 4,000 sq. ft., but no less than 2,500 sq. ft. with a minimum lot width of 35 ft.; and one-third of the lots in any block may range in size from less than 3,500 sq. ft. but no less than 3,000 sq. ft. with a minimum lot width of 30 ft. These smaller lots shall be dispersed throughout each block with the lots 4,000 sq. ft. and over.

Table 3. Projects Built Under Revised Conventional Standards: Lot Area, Frontage, and Setbacks.

Jurisdiction	Project	LOT AREA (Square Feet)		FRONTAGE (Linear Feet)		FRONT SETBACK (Linear Feet)		SIDE SETBACK (Linear Feet)		REAR SETBACK (Linear Feet)	
		Minimum Permitted by Ordinance	Project (Actual)*	Minimum Permitted by Ordinance	Project (Actual)*	Minimum Permitted by Ordinance	Project (Actual)*	Minimum Permitted by Ordinance	Project (Actual)*	Minimum Permitted by Ordinance	Project (Actual)*
Riverside County, Calif.	Woodhaven Cobblestone	3,600	3,600	30	36	10; 20 if garages open parallel to the street	20	No requirement	5	No requirement	25
		5,000	5,000	30	40		20		5		45
Dade County, Fla.	Bird Road Oak Park Bilbao	4,500	5,699	45	50	5	10	One must be 0, the other must be at least 10	0 and 10	No requirement	15
		4,500	5,400	45	60	5	25		0 and 10		17
		4,000	4,400	No requirement	44	5	22.5		0 and 10		10
San Antonio, Tex.	Stone Ridge	4,200	4,400	42	44	20; less required if front setbacks are varied or if vehicular access is from rear	15	5; 10 if Zero Lot Line	0 and 10	12; 5 if vehicular access is from rear	12
Arlington, Tex.	Windmill Springridge Addition	5,000	5,355	50	53	20 if vehicular access is from street; 5 if access from alley	20	5; 10 if Zero Lot Line	0 and 10	No requirement	12
			5,650		50		20		0 and 10		5
Las Vegas, Nev.	Pinecrest	4,000	4,888	40	47	10	20	Total must equal 10; one may be 0	5	10	10

* The average or typical dimensions used in the project.

Table 4. Projects Developed Under Planned Unit Development Provisions: Minimum Lot Area, Frontage, and Setbacks for Single-Family Detached Homes.

Jurisdiction	Project	LOT AREA (Square Feet)		FRONTAGE (Linear Feet)		FRONT SETBACK (Linear Feet)		SIDE SETBACK (Linear Feet)		REAR SETBACK (Linear Feet)	
		Conventional Requirement ¹ (Minimum)	PUD Project (Achieved) ²	Conventional Requirement ¹ (Minimum)	PUD Project (Achieved) ²	Conventional Requirement ¹ (Minimum)	PUD Project (Achieved) ²	Conventional Requirement ¹ (Minimum)	PUD Project (Achieved) ²	Conventional Requirement ¹ (Minimum)	PUD Project (Achieved) ²
Phoenix, Ariz.	Cimarron	6,000	4,000	60	40	20	10 ³	10/3	5/0	25	10
Geneva, Ill.	Geneva East	10,000	6,210	75	45	20	18	6	9	25	50 ⁴
Thurston Cnty., Wash.	Cottages	12,500	2,226	75	42	25; 50 to center line of street	0 ⁵	5	10/0	10	0
Shreveport, La.	Cobblestone	6,000	2,500	No requirement	50	30	0 ⁵	5	15/0	25	0
San Marcos, Calif.	Peacock Park	10,000	5,000	No requirement	50	25; 50 to center line of street	30	10	5	25	20
Coon Rapids, Minn.	Shannon Park	10,800	6,000	80/135 depth	54	35	25	10 house side; 5 on garage side	7.5 house side; 3 on garage side	35	35
Elkhart Cnty., Ind.	Mark VII West	22,600 ⁶	14,700	125	60	35	15	5	10/0	15	40
	Simonton Lake	23,381 ⁶	10,600	100	60	35	15	5	10/0	15	40
Fort Collins, Colo.	Redwood	6,000	1,320 ⁷	60	24	30	Not applicable	7	Not applicable	15	Not applicable

1. Conventional requirements for lot area, frontage, and setbacks apply to all non-PUD development in district where project occurs. PUD standard has been negotiated against conventional standards.

2. The average or typical dimensions used in the project.

3. Not negotiated; required by Phoenix's PUD provisions.

4. Large rear-yard setback needed to accommodate parking at rear of lot.

5. Unit is sited on front, rear, and one side lot line.

6. These projects were originally approved as conventional subdivision developments; the projects were later built under PUD provisions.

7. In this project, the building footprint (i.e., the area covered by the building) is considered the lot. All outdoor area, with the exception of private yard/patio areas, is designated as common open space.

did not build to the absolute minimum frontage permitted.

None of the projects built under PUD provisions was subject to minimum lot frontage requirements. All the PUD projects used less frontage than would have been required under the conventional standards governing their underlying districts. (See Table 4.) But whether projects were built under PUD provisions or under revised standards, lot frontages were similar. Six of the nine PUD projects provided between 40 and 55 feet of lot frontage and seven of the nine projects built under revised standards had frontages that fell within this range. In fact, two of the smallest-lot PUD projects, the Cottages development in Thurston County and the Cobblestone development in Shreveport, had average frontages that were comparable to those used in projects with lots that were twice as big—a sign perhaps of their unconventional site design.

Setbacks. Whether communities reduced their setback requirements depended on where the setbacks were located—front, rear, or side. Requirements for two side-yard setbacks are increasingly being dispensed with in small-lot development. Each of the communities that revised its development standards permitted one side yard to be reduced to zero to allow the dwelling unit to be sited on the side lot line. Permitted reductions in rear-yard setbacks, however, were less consistent. While two communities had no minimum requirements for rear-yard setbacks at all, and one community required no rear setback when ZLL siting was used, two other communities required some amount of rear-yard setback. (See Table 2.)

Only two communities unconditionally reduced front-yard setbacks. The others permitted reductions only in certain cases. Riverside County, California, for example, allowed a reduction in front-yard setback as long as the garage did not open parallel to the street. Arlington and San Antonio, Texas, permitted reduced front-yard setbacks only when parking was placed at the rear of the lot. San Antonio also permitted reductions in front-yard setbacks when they were staggered according to a formula included in the zoning ordinance. (See San Antonio case study.)

The projects that were built under these revised standards reflected a similar preference for reducing side- but retaining rear- and front-yard setbacks. (See Table 3.) Nearly every project took full advantage of permitted side-yard reductions and sited dwelling units on the side lot line. Each of the projects provided some rear-yard setback, although in several cases they need not have done so.

Finally, most projects provided more, and in some cases considerably more, front-yard setback than the minimums permitted under revised standards. For example, two of the Dade County developments, Oak Park and Bilbao, provided over 20 feet of setback at the front of the dwelling unit although five feet was permitted. The Pinecrest development in Las Vegas, Nevada, also provided twice as much front-yard setback as permitted. Here again, developers believed that greater front-yard setbacks would be preferred by buyers.

A deep front yard has several special characteristics that make it difficult to do away with. Not only is it a traditional element of the desirable conventional single-family detached house, it has the added advantage of providing room for required parking at the front of the lot.

Among the communities that had projects developed under PUD provisions, only Phoenix established specific setback requirements. (See Table 4.) PUDs occurring in that city's most restrictive zoning districts must have a front setback of at least 25 feet, and at least 10 feet in less restrictive zoning districts. The other communities with PUD provisions required specific setbacks only on perimeter lots.

Nevertheless, the projects developed under PUD provisions followed a pattern similar to that of the projects developed under revised standards. Most projects either sited dwelling units on the side lot line or used very small side-yard setbacks. Front-yard setbacks were, in most cases, only five to 10 feet less than those required under conventional standards, and rear setbacks provided were either equal to or more than those required under conventional standards.

Lot Coverage and Unit Size. Lot coverage requirements did not appear to be an issue of concern to planning departments or to developers. Although most of the communities that revised their standards also permitted an increase in lot coverage, developers, not surprisingly, seldom built to the maximum allowed. (See Table 5.) Only one community, Las Vegas, Nevada, reduced its lot coverage requirement as minimum lot size requirements became smaller—apparently to maintain adequate open space on the lot. As shown in Table 6, in nearly every project built under PUD provisions, lot coverage was less than the maximum permitted under conventional standards, although, in most cases, more coverage was allowed.

Developers kept the coverage of their small-lot projects low either by using lots that were larger than the minimum permitted, downsizing dwelling units, or by using two-story units. Most of the projects included units that fell roughly within the 800- to 1,000-square-foot range (see Tables 5 and 6), which is considerably smaller than the 1,520-square-foot house that represented the median size of new detached houses built in this country in 1982.⁶ However, even smaller units could have been built in most cases because only a few of the communities studied regulated the size of dwelling units.

A few communities included units that were greater than 1,500 square feet, but these units usually consisted of two stories. Each of the developments studied could have included two-story units because two stories and/or 35 feet of height were permitted under both revised standards and PUD provisions. Only San Antonio adjusted its building height requirement for small-lot development. The height of dwelling units in the city's small-lot developments was limited to 20 feet, whereas units in conventional projects can be as high as 25 feet. San Antonio

6. Updegrave, "Goodbye to the Detached House," p. 202.

Table 5. Projects Built Under Revised Conventional Standards: Lot Coverage and Unit Size.

Jurisdiction	Project	Lot Coverage			Unit Size (Range in Square Feet)
		Former Standard (Maximum)	Revised Standard (Maximum)	Project (Actual)*	
Riverside County, Calif.	Woodhaven Cobblestone	No requirement	70%	33% 24%	800-1,457 821-1,583
Dade County, Fla.	Bird Road Oak Park Bilbao	35%	50%	26% 20% 32%	1,193-1,713 870-1,335 1,440-1,935
San Antonio, Tex.	Stone Ridge	No requirement	No requirement	22%	832-1,147
Arlington, Tex.	Windmill Springridge Addition	40%	No requirement	28% 33%	1,018-1,200 1,216-1,675
Las Vegas, Nev.	Pinecrest	50%	50% if lot is 4,000 sq. ft. or more; 45% if lot is between 3,500 and 4,000 sq. ft.; 40% if between 3,000 and 3,500 sq. ft.	30%	1,020-1,225

* These are approximate percentages derived from available data.

Table 6. Projects Built Under PUD Provisions: Lot Coverage and Unit Size for Single-Family Detached Homes.

Jurisdiction	Project	Lot Coverage		Unit Size (Range in Square Feet)
		Conventional Requirement* (Maximum)	PUD Project (Achieved)**	
Phoenix, Ariz.	Cimarron	40%	30%	948-1,295
Geneva, Ill.	Geneva East	30%	27.5%	920-1,176
Thurston County, Wash.	Cottages	60%	43%	822-1,048
Shreveport, La.	Cobblestone	No requirement	36%	1,055-1,568
San Marcos, Calif.	Peacock Park	No requirement	20%	835- 850
Coon Rapids, Minn.	Shannon Park	20%	20%	800-1,085
Elkhart County, Ind.	Mark VII West Simonton Lake	No requirement	10% 10%	1,056-1,624 890-1,183
Fort Collins, Colo.	Redwood	No requirement	Not applicable***	960-1,320

* Conventional requirements for lot coverage apply to all non-PUD development in districts where project occurs. PUD lot coverage has been negotiated against this standard.

** These are approximate percentages derived from available data.

*** In this project, the building footprint (i.e., the area covered by the building) is considered the lot. All outdoor area, with the exception of private yard/patio areas is designated as common open space.

limited the height of units in small-lot developments to reduce the potentially negative impacts of minimal separation between units.

Density. Table 7 lists the gross and net densities achieved by the projects studied. When compared to the number of units per acre that could be built under existing conventional standards, some very significant density increases were reached under the revised development standards. Dade County, for example, found that, on the average, projects developed under its conventional requirements of 7,500 square feet of lot area and 75 feet of frontage usually achieved about 4.1 units per gross acre and 5.2 units per net acre (streets not included). Under its new

ZLL provisions, the county found that six units per gross acre were usually achievable, and 7.5 units per net acre could be obtained in its most restrictive single-family residential district by allowing houses on 4,500-square-foot lots with 45 to 50 feet of frontage. Considerably higher density was possible when such development occurred in less restrictive zoning districts. For example, in Dade County, the Bilbao development, which was built in a multifamily district, achieved a gross density of nearly eight units per acre and a net density of nearly 12 units per acre, or about twice the density that could be obtained under conventional standards.

Significant increases in density were also achieved in the other projects built under revised standards. In

Table 7. Affordable Housing Projects: Gross and Net Densities Achieved.

Jurisdiction	Project	Density Achieved*		Percent of Common Open Space Provided
		Gross (Units per Acre)	Net (Units per Acre)	
1. Conventional Projects (Revised Standards)				
Riverside County, Calif.	Woodhaven	6.5	8.1	0
	Cobblestone	4.9	7.0	12.5
Dade County, Fla.	Bird Road	5.9	7.5	0
	Oak Park	4.7	5.9	0
	Bilbao	7.9	11.5	0
San Antonio, Tex.	Stone Ridge	6.9	9.9	12.2
Arlington, Tex.	Windmill	5.5	6.9	0
	Springridge Addition	6.1	7.7	0
Las Vegas, Nev.	Pinecrest	3.8	5.6	0
2. PUD Projects				
Phoenix, Ariz.	Cimarron**	6.5	8.1	12.1
Geneva, Ill.	Geneva East**	5.5	8.7	13
				(to park district)
Thurston County, Wash.	Cottages	7.9	19.7	32
Shreveport, La.	Cobblestone**	13.7	30.7	63
San Marcos, Calif.	Peacock Park	3.1	7.7	50
Coon Rapids, Minn.	Shannon Park**	5.8	8.9	18
				(to park district)
Elkhart County, Ind.	Mark VII West	2.8	3.5	0
	Simonton Lake	3.5	4.3	0
Fort Collins, Colo.	Redwood	5.4	7.2	60.42 (9.65 active recreational space; 50.77 common open space)

* Care should be taken when comparing gross and net densities from one community to the next, since communities use different methods of calculating density. In addition, these are, in most cases, approximate figures derived from available data.

** Project contains some attached or multifamily units in addition to detached units. (See Table 1.)

many cases, even greater density could have been achieved if developers had chosen to use the permitted minimum lot sizes. For example, small-lot provisions in Las Vegas permitted up to 10 single-family detached units per gross acre, yet the project examined was developed at less than four units per gross acre. The Bilbao project in Dade County could have been developed at a gross density of more than 10 units per acre, rather than the 7.9 units per acre that the project achieved.

Densities achieved in the projects developed under PUD provisions varied widely. (See Table 7.) For the most part, the range of lot sizes used and the amounts of common open space required (see Appendix B) in the PUD projects accounted for this variation. For example, the Peacock Park development in San Marcos contained lots that averaged 5,000 square feet and 50 percent common open space, whereas the Cottages development in Thurston County, Washington, contained lots that averaged less than 3,000 square feet and 32 percent common open space. Only the two manufactured housing developments in Elkhart County, Indiana, did not devote any of the development site to common open space.

Because most communities permitted a 20 to 25 percent increase in density for PUDs, the density of a PUD in a given community was normally greater than the density of a project developed under conventional standards in that same community. But, in spite of this fact, greater increases were achieved by projects built under revised conventional standards because the requirement for common open space in most PUD ordinances held down the gross density that could be achieved.

Local Market Preferences

Developers of affordable housing in many cases did not build to minimum requirements. Their perception of local market preferences often led them to exceed the minimum standards.

A comparison of standards permitted and standards applied in projects built or proposed suggests that developers, by taking full advantage of the minimums permitted, could probably have achieved even greater savings. The developers' perceptions of their local markets, however, were the deciding

factors in the selection of site design standards for their projects.

Site Improvement Standards

Communities seldom modified their site improvement standards for streets and sidewalks, drainage, storm sewers, and other utilities to encourage affordable development.

Most of the communities studied either required the same improvement standards for small-lot development as called for in conventional development, or established stricter improvement standards for small-lot development. One explanation for this may be that, because the number of units per acre increased with reduced lot sizes and units were often sited close together, more stringent requirements were considered necessary to deal with increased usage and limited space between buildings. For example, fire departments in two communities required hydrants to be more closely spaced and water pressure to be increased in small-lot developments. (See Riverside County case study.) A public works department in another community required special concrete gutters at the edge of the street pavement when front yard setbacks were reduced to less than 20 feet. (See Dade County case study.) Drainage and maintenance easements were often required when ZLL units were permitted.

Most of the communities that revised their development standards to permit small-lot development did not allow any reduction in street right-of-way and pavement width. Only Riverside County permitted narrower street right-of-way and pavement width in small-lot development. In this case, the conventional 60-foot right-of-way was reduced to 50 feet and the pavement width was reduced from 36 to 32 feet. Both of the Riverside County developments took full advantage of allowable reductions in street standards. (See Table 8.) Narrower streets could also have been used in ZLL development in Dade County, but only if the streets were private.

Most communities were reluctant to modify street

requirements because, in part, they were concerned about street capacity and increased use. Although the wide streets that are often required for large-lot developments may appear to be inappropriate for small-lot developments, some planners pointed out that streets in dense small-lot developments would be more intensely used. Indeed, in some instances a better case may be made for downsizing streets in conventional low-density development since these streets are not as heavily used.

What seems to be the most practical approach, and one that was used in many of the PUD projects studied, is to determine street right-of-way and pavement widths on a case-by-case basis. Expected average daily traffic, the design and layout of dwelling units, whether on-street parking will be provided, and other factors related to street design should be taken into account. This performance approach can allow streets to be designed at a scale that is compatible with small-lot development. (See Bucks County, 1980, and Urban Land Institute, 1974, in Appendix D.) Determining appropriate street requirements on a case-by-case basis allowed for some reduction in right-of-way and pavement width in six of the nine PUD projects examined. As shown in Table 9, only the two projects in Elkhart County, Indiana, and the Redwood development in Fort Collins, Colorado, used streets that were the same width as those required in more conventional development.

It is important to note, however, that in most cases reductions in street width requirements were only allowed under PUD provisions when private streets were used. One exception was the Geneva East development in Geneva, Illinois. In this case the developer was able to demonstrate that the use of alleys and rear vehicular access in his project would cut down on street traffic.

Similarly, few communities permitted any change in their requirements for sidewalks in small-lot development. All but one of the five communities that revised their standards required that sidewalks be provided on both sides of the street. Arlington, Texas, permitted the use of a system of six-foot walkways on one side of the street, in place of four-

Table 8. Projects Built Under Revised Conventional Standards: Minimum Local Street Right-of-Way and Pavement Width.

Jurisdiction	Project	Right-of-Way Width (Linear Feet)		Width of Pavement (Linear Feet)	
		Minimum Permitted by Ordinance	Project (Actual)	Minimum Permitted by Ordinance	Project (Actual)
Riverside County, Calif.	Woodhaven	50	50	32	32
	Cobblestone		50		32
Dade County, Fla.	Bird Road	50, can be less if private	50	20, can be less if private	20
	Oak Park		50		20
	Bilbao		50		22
San Antonio, Tex.	Stone Ridge	50	50	30	30
Arlington, Tex.	Windmill	50	50	28	28
	Springridge Addition		50		28
Las Vegas, Nev.	Pinecrest	60	60	40	40

Table 9. Projects Developed Under Planned Unit Development Provisions: Minimum Local Street Right-of-Way and Pavement Width for Single-Family Homes.

Jurisdiction	Project	Right-of-Way Width (Linear Feet)		Width of Pavement (Linear Feet)		Type of Street
		Conventional Requirement* (Minimum)	PUD Project (Achieved)	Conventional Requirement* (Minimum)	PUD Project (Achieved)	
Phoenix, Ariz.	Cimarron	60	50	29	20	Private
Geneva, Ill.	Geneva East	66	60	34	28	Public
Thurston County, Wash.	Cottages	40	20	20	20	Private
Shreveport, La.	Cobblestone	60	24	27	24	Private
San Marcos, Calif.	Peacock Park	50	38	32	32	Public
Coon Rapids, Minn.	Shannon Park	60	50	31	31	Public
Elkhart County, Ind.	Mark VII West	50	50	40	40	Public
	Simonton Lake		50		40	
Fort Collins, Colo.	Redwood	40	40	28	28	Public

* Conventional requirements for street right-of-way and pavement width apply to public street requirements for all non-PUD development in district where project occurs. PUD standard has been negotiated against conventional standards.

foot sidewalks on both sides of the street. However, this alternative had already been permitted in conventional development, prior to enactment of provisions for small-lot development. Most of the communities studied permitted walkway or accessway systems in lieu of standard sidewalks under PUD provisions, but here again, these systems were usually part of a private street system.

For the most part, the possibility of reducing or redesigning improvement standards with an eye to encouraging affordable housing has yet to be thoroughly examined by the various departments responsible for their administration. (See Rice Center, 1980, in Appendix D.) It is likely that as communities learn about what works in small-lot development, there will be more innovation in setting improvement standards.

Building and Site Design

As lot areas, frontage, and setbacks were reduced, planners and developers found it important to adjust building and site designs.

Design problems specific to small-lot development required special attention. As lot size approached 5,000 square feet and moved downward, the details of project design became increasingly important and some conventional site design requirements had to give way. For example, as lots approached 5,000 square feet, the usefulness of two side yards diminished significantly. Frontage, at that point, was usually reduced to a level that made it difficult to accommodate a driveway and a two-car garage—unless the dwelling units were also substantially downsized to a range of 800 to 1,000 square feet.

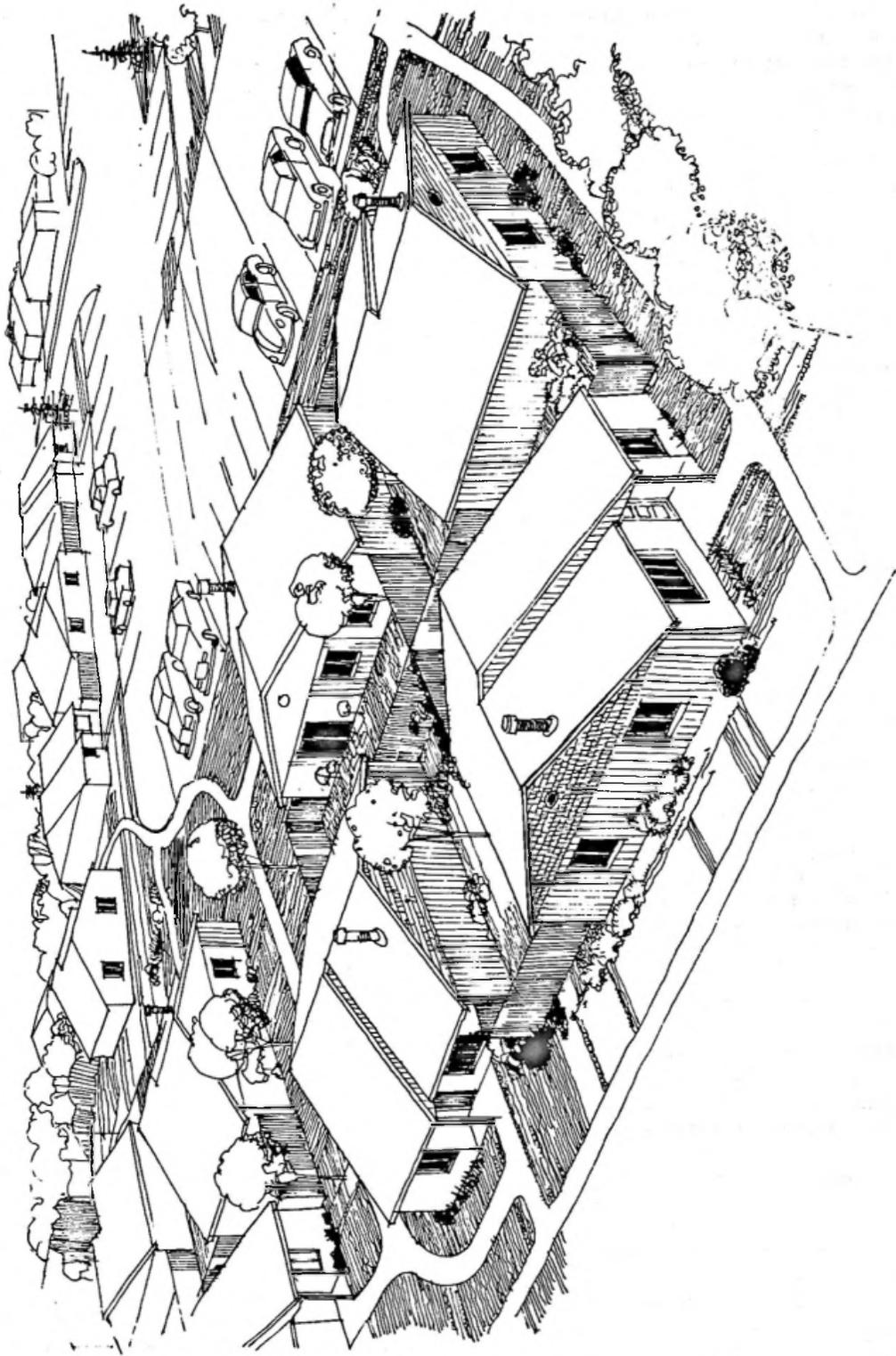
As lot size was further reduced to around 3,500 square feet, ZLL siting of dwelling units and the elimination of one side yard was practically mandatory. Parking on the lot was quite difficult to accommodate without cars dominating the streetscape. The ZLL house itself had to be specially designed and properly sited to ensure privacy; some

communities believed that steps also had to be taken to ensure fire safety. On lots smaller than 3,000 feet, unconventional site design techniques—like the “pinwheel cluster,” used in the Cottages development in Thurston County, Washington, and in the Cobblestone project of Shreveport, Louisiana—were necessary to allow detached units to be built. (See Figure 1.) When lots are this small, parking on the lot is usually not possible and usable private outdoor areas are quite limited.

Clearly, as lot size decreased, the trade-offs were greater and some of the advantages of conventional single-family detached development had to be sacrificed. At some point, therefore, it makes sense to consider attached housing styles. It is difficult to say just what constitutes the smallest possible lot size for single-family detached housing. Some experts maintain that single-family detached houses can be even smaller than what is now considered to be the minimum acceptable size—800 to 900 square feet. Should dwelling unit size drop significantly below 800 square feet, lot size may follow suit. At least for the present, given the smallest detached units that were built in these projects, a 2,000- to 3,000-square-foot lot may be the minimum that can be used without giving up so many advantages that an attached house would provide a better living environment. Before that minimum is reached, however, units built on lots as small as 4,000 to 5,000 square feet can provide attractive affordable housing as planners and developers learn to compensate for limited lot sizes.

• *Experience showed that dwelling units needed to be specifically designed for small lots.* While it was obvious that units on small lots should be downsized, it was less obvious that these downsized units should also be redesigned. The design of conventional floor plans anticipates that there will be an ample side-yard setback to ensure privacy and sufficient front-yard setbacks and frontage to accommodate a driveway and a garage or a parking space on the lot. The conventional single-family unit

Figure 1. The Cottages Development, Olympia, Washington.



Lots that average less than 3,000 square feet are clustered in a "pinwheel" configuration to take full advantage of this small (3.94 acres) site.

built within the last 20 years was often sited lengthwise, parallel to the front of the lot, and the greatest amount of private outdoor space was placed at the rear of the units. (See Figure 2A.) Although the frontage and depth of conventional lots was rarely equal, in many cases lot depth was only about 30 to 35 percent greater than frontage. This ratio of frontage to depth gave the conventional lot its "boxy" appearance. Small lots, on the other hand, were more often narrow and deep, because this configuration took full advantage of the savings that can be gained by reduced lot frontage. (See Figure 2B.) Under the regulations that permitted small-lot development, front- and side-yard setbacks were also usually kept to a minimum. Unless units were carefully designed and sited on small lots, they did not provide the level of privacy and the usable open space that are major attractions of a detached house.

An example of some of the problems that can occur when dwelling units are not designed for smaller lots was provided by the Shannon Park PUD in Coon Rapids, Minnesota. In this development, dwelling units were placed on lots averaging 6,000 square feet with frontages averaging 55 feet. The planning department believed that these units, which were designed for conventional lots of over 10,000 square feet (the minimum lot size required for non-PUD projects occurring in this particular zoning district), looked crowded and the side yards in many cases appeared to be useless. A staff report on the Shannon Park Development explained:

The 55-foot width of most lots in Shannon Park generally proved inadequate since most builders tended to squeeze conventional housing units designed for 80-foot wide lots into the 55-foot lot width. This approach sacrificed side-yard setbacks and gives the appearance of overcrowding from the street. Based on this, the city concludes that 60 feet is the narrowest acceptable lot width for conventional single-family detached housing styles. The city also found that 20 feet is the narrowest acceptable side-yard setback between the living areas of adjacent single-family homes. If lots less than 60 feet in width are to be used, the city concluded that either a zero lot line setback for one side of the house should be used or a new housing style should be designed to better relate to the narrow lot widths.

- *Eliminating one side yard and siting dwelling units on the side lot line became increasingly desirable as lots became smaller than 5,000 square feet.* The usefulness of two side yards even in conventional single-family development has often been questioned. Access to the rear of the dwelling unit from the front yard and separation between buildings can be provided just as well by one side yard as by two. And, of course, as lots become still smaller and less frontage is provided, the usefulness of two side yards diminishes even further.

Unless dwelling units were very small—800 square feet or less—and/or lots were well over 5,000 square feet with frontage in excess of 50 feet, planners and developers found that it made more sense to eliminate one side yard and maximize the size of the remaining yard.

- *Integrating indoor and outdoor areas to allow for better use of limited space became important as*

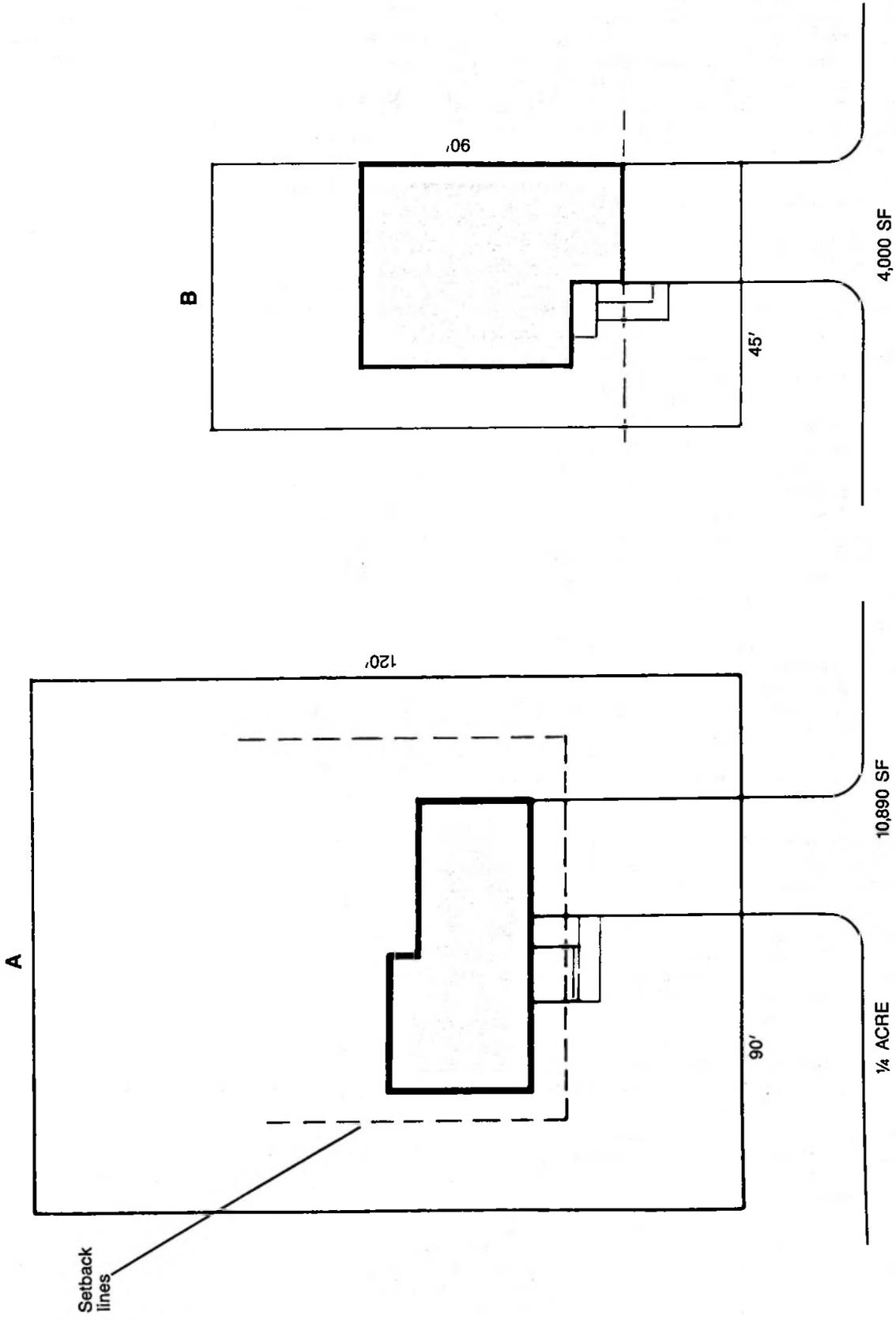
lots and dwelling units became smaller. The integration of indoor and outdoor areas was achieved by designing and siting dwelling units so that living areas within the units opened out into private open space, giving the smaller units a more spacious feeling. Dade County, Florida, for example, required that a certain percentage of the wall areas of the dwelling units open out both physically and visually into private yard areas. Developers used sliding glass doors to satisfy this requirement. Local officials believed this requirement contributed considerably to the high quality of the design of many of their small-lot projects.

- *Developers varied the exterior design and siting of buildings in small-lot development to improve the streetscape, and planners encouraged this practice.* Because dwelling units in small-lot developments were sited closer together and closer to the street, and because there were likely to be more units sited per block than there were in conventional development, attention was given to the streetscape—the visual quality of the development from the street—to avoid a monotonous appearance. Long rows of narrow lots did, in fact, give a development the look of an attached housing or townhouse project. To avoid this, some developers used a variety of floor plans and building designs with varied building elevations and facade treatments. Local officials gave high marks to small-lot developments that did not use identical floor plans or building designs on adjacent lots. Varying front setbacks also helped provide visual interest, and offered more flexibility to designers to arrange windows and other openings in the side walls of dwelling units. Short blocks also helped avoid visual monotony in small-lot development.

In several of the projects studied, special attention was given to the exterior design and siting of dwelling units. The Geneva East project in Geneva, Illinois, for example, employed each of the techniques outlined above. In addition to varying the setbacks and mixing floor plans throughout the project, the developer also based the design of dwelling units on existing single-family homes elsewhere in the community. (See Figure 3.) The developer had hired an architect to review the various housing styles in the community and to design several downsized units that would be similar in style. This approach gave the small-lot development an appearance that appealed to local homebuyers and gained the acceptance of a conservative community.

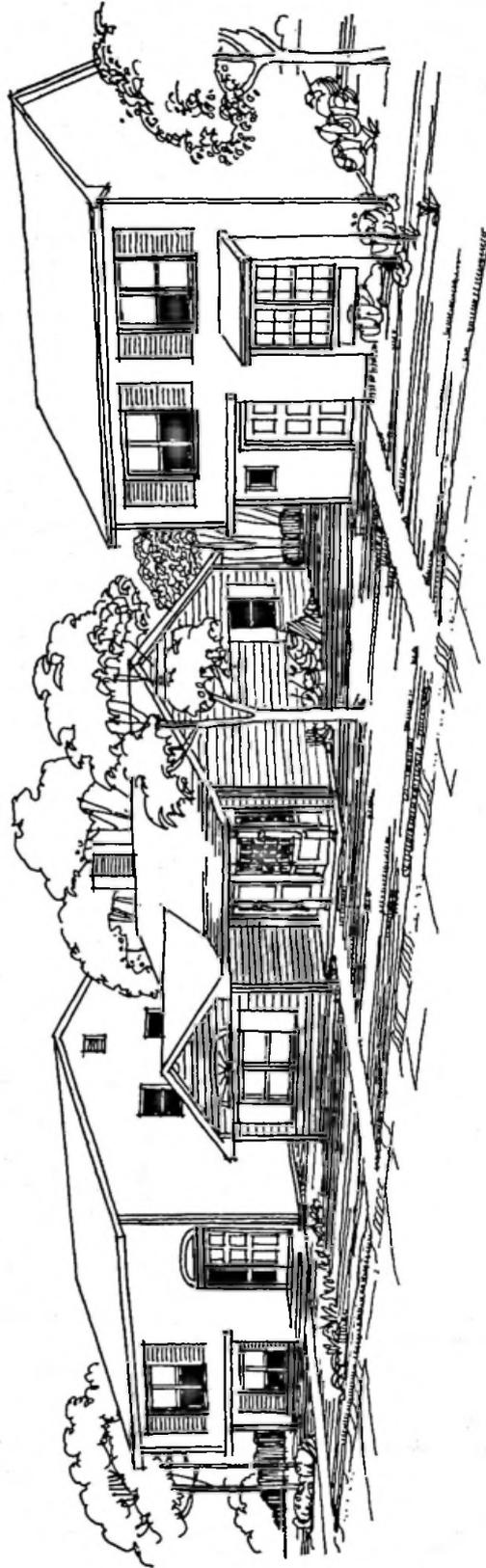
Another example of how a mix of building exteriors, varied setbacks, and short blocks can improve the appearance of a small-lot development was provided by the Stone Ridge development in San Antonio. This city's standards for small-lot development contained specific provisions that encouraged staggering of front setbacks. In addition to taking advantage of these provisions by varying front-yard setbacks, the developer of Stone Ridge used six different floor plans and six elevations, which were well mixed throughout the development. Most blocks were short, containing only 10 or fewer homes. (See San Antonio case study

Figure 2. A comparison of Conventional (A) and Small-Lot (B) Siting of Dwelling Units.



Source: National Association of Home Builders, *Planning for Housing*, Washington, DC: NAHB, 1980, pp. 46-47.

Figure 3. Geneva East Development, Geneva, Illinois.



Variied front setbacks and a good mix of building designs enhance the streetscape of this development

and the city's small-lot provisions in Appendix A.)

The streetscape in small-lot development can be further improved by street trees. Dade County's provisions for ZLL development required that "street shade trees shall be provided along each side of the roadway(s) at a minimum spacing of forty (40) feet on center for private roads. . . ."

The width of street pavement and right-of-way also affected the streetscape of small-lot development. Some communities found that street widths that worked in conventional single-family development were out of scale with small-lot development, and excessive street widths appeared to dominate the streetscape. As noted previously, a case-by-case approach proved to be the best way to determine appropriate street right-of-way and pavement widths.

Parking, Open Space, and Privacy

The main trade-offs that occurred as lots became smaller involved parking, usable open space, and the privacy of individual residential units. Local governments made special efforts to compensate for problems in these areas.

Parking. The experience of the communities studied showed that when frontage was reduced below 50 feet and front setbacks were less than 20 to 25 feet, parking and garages were difficult to accommodate at the front of the lot and usually dominated the streetscape. Although the house and the lot could be downsized, garage size appeared to be intractable—given the size of the family car. The large garage on the small lot presented a problem that was not easily solved. Furthermore, where on-street parking was permitted at all, the number of available spaces per lot was reduced as frontage was reduced. Most communities, therefore, that required fewer than two parking spaces per dwelling unit in conventional, large-lot development required two spaces for small-lot development. Dade County and San Antonio, for example, increased their off-street parking requirement for single-family detached development from one space on each lot to two spaces, exclusive of garage, when small lots were used. Coon Rapids also required that the Shannon Park PUD provide two spaces per unit, rather than one space, which was the minimum for conventional development. In each case, key concerns were that the density of smaller-lot developments would increase the number of cars, while the numerous curb cuts necessitated by reduced frontages would limit on-street parking—especially on-street parking for guests. This was clearly a concern in Dade County where parking on local residential streets was prohibited.

Those communities that already required at least two parking spaces for single-family detached development in their existing ordinances retained this requirement for small-lot development. Riverside County, California, was the only community that required only one parking space per

dwelling unit for both conventional and small-lot development.

Increasing the requirements for parking while allowing less lot space to accommodate it can, of course, pose problems. A logical solution is to require greater frontage and/or front-yard setback when parking or garages are allowed or required. What constitutes an adequate amount of frontage and front setback to accommodate parking and garages will vary with the other design features of the project.

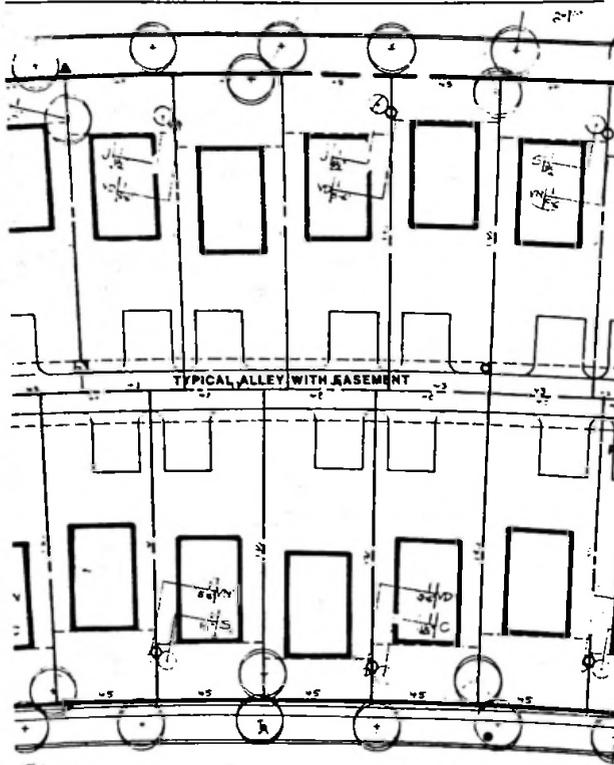
One community that took steps to help ensure that small lots adequately accommodated the automobile was San Antonio. The city's provisions for small-lot development required greater front-yard setbacks when off-street parking was provided at the front of the dwelling unit, and less when it was placed at the rear of the unit. Even less front setback was permitted if front setbacks were also staggered. These flexible provisions are discussed in greater detail in the San Antonio case study.

Parking can be accommodated on smaller lots by using alleys to reach parking spaces at the rear of the lot. While several of the communities studied permitted alleys in small-lot development, only one project, Geneva East, actually included alleys. Most of the developers interviewed believed that alleys were too costly and used land that could otherwise be used for building lots. Developers preferred to make necessary adjustments in either building design or siting to accommodate parking at the front of the dwelling unit. Nevertheless, the use of alleys may be the best way to provide for off-street parking. The developer of Geneva East found that the use of alleys allowed him to eliminate both driveways and frequent curb cuts. (See Figure 4.) Eliminating driveways also allowed for more on-street parking for guests. In addition, because the presence of alleys reduced traffic on streets, the city allowed the developer to reduce street pavement width. Thus, the use of alleys in this project not only made for a more attractive development in the opinion of both local officials and the developer, but also contributed to savings in land development costs.

Recreational vehicles proved even more difficult to accommodate than automobiles on small lots. These large vehicles can dominate front yards and obstruct views. Coon Rapids, Minnesota, required restrictive covenants to control storage of recreational vehicles on lots. The primary owner of San Antonio's Stone Ridge project also took this approach to controlling storage of vehicles.

Finally, as the house grows smaller, so does the usual storage space, and this affects the garage too. A variety of paraphernalia finds its way to the garage, and the car, too often, remains outside on a parking pad. This proved to be the case in projects that did not include basements. The obvious solution is to encourage developers to pay closer attention to the creative use of space in the house, or in the garage, for storage of bulky equipment. Although the provision of storage space may appear to be a minor and obvious point, lack of such space may prove to be a major problem and result in cluttered lots.

Figure 4. Site Plan, Geneva East Development, Geneva, Illinois.



As shown in this portion of the project's site plan, the use of alleys allowed for parking at the rear of lots and the elimination of curb cuts at the front of lots. Note also that dwelling unit setbacks are varied from one lot to the next.

Open Space. When lots fell below 4,000 square feet, and private open space became increasingly limited, common open space was usually needed. Common open space was particularly necessary when the market for small-lot homes included young families, as it usually did. Providing common open space diminished some of the savings that could be passed on to the consumer, because fewer lots could be developed. A clustered site plan, however, helps meet the need for open space and retains some or all of the lots that would otherwise have been used for common open space. For example, clustering dwelling units on lots that were slightly more than 2,000 square feet allowed the developer of the Cottages development in Thurston County, Washington, to retain over 30 percent of the building site for common open space. (See Figure 5.) Although lots were considerably smaller than those used in most of the other developments examined in this report, the gross or overall density of this development was only slightly greater than that of projects containing lots that were twice as large.

Another advantage of the cluster site design is that it requires less street pavement and shorter utility runs to service dwelling units than is required with conventional site designs. Of course, there are some trade-offs. Cluster site design demands a more sophisticated level of design expertise than conventional site design. Many communities only

allow for the level of flexibility needed to achieve this type of site design under PUD provisions. Some communities, however, allow cluster subdivisions under conventional zoning requirements. When very small lots—i.e., lots under 3,000 square feet—are clustered, the site plan also has to accommodate clustered parking, because lots this small cannot adequately handle parking. Nevertheless, when common open space has to be provided in small-lot development, the cluster approach is the most cost-effective site design.

Privacy. Small-lot development required landscaping, fences, or walls to ensure privacy between dwellings and to minimize the impact of street traffic. Dade County, Florida, made a serious effort to ensure privacy. For example, the county required that fences or walls be included in ZLL development when building design and siting did not provide privacy. Furthermore, like many other communities, the county required that, in ZLL development, the wall situated on the lot line had to be without windows to provide visual privacy in side-yard areas. And finally, the county required three trees on each lot to screen dwelling units from one another and the street and to provide shade. Street trees were also required. (See Dade County case study.)

In light of their initial experience with a small-lot development, planners in Coon Rapids, Minnesota, recommended that mature plantings should be included in the landscaping plan to help ensure privacy and to give small-lot developments a more "finished" look. In addition to enhancing the appearance of the development itself, mature landscaping can help to make small-lot development compatible with existing development.

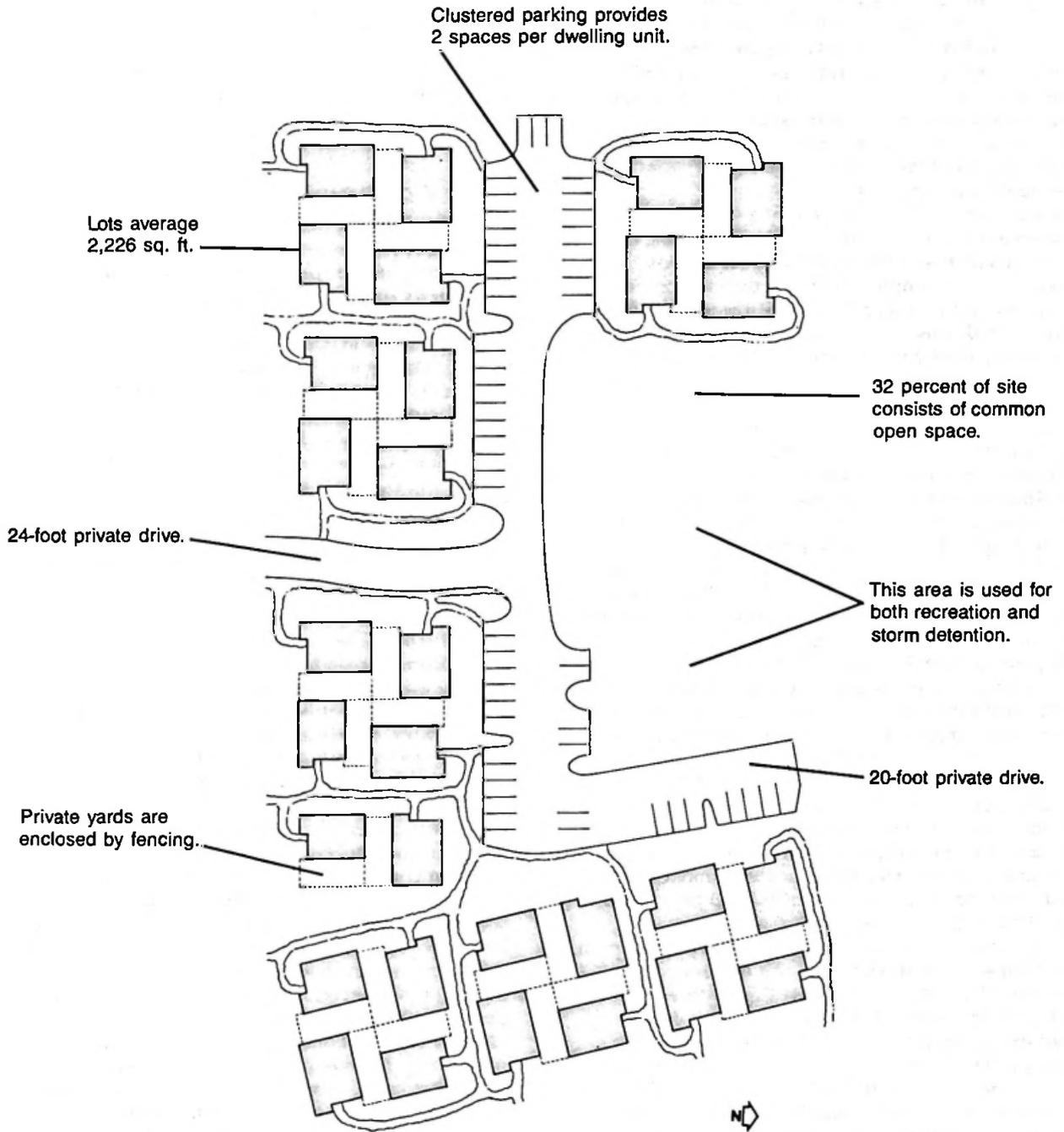
Flexible Standards

Flexibility was the key to regulations that resulted in the development of high-quality affordable housing.

The opportunity to operate with flexibility appeared to be at least as important to developers as minimum zoning and subdivision requirements. Because each development parcel had its own constraints and opportunities that dictated the appropriate building and site design, developers needed to be able to vary lot sizes, building setbacks, and the design of circulation systems to fit the site and to respond to a variety of consumer needs.

When rigid requirements are established in advance of development, design opportunities can be severely limited. The communities that recognized this fact did not set minimum requirements where they believed developers could make the best choice. Thus, some communities did not establish specific numerical requirements for frontage or rear- and side-yard setbacks. Some communities that did establish minimum requirements allowed for some flexibility in their application. For example, in Dade County, an "average" lot size requirement for ZLL development was permitted, rather than an absolute minimum. In San Antonio, setback requirements were related to the location of parking—and the developer had the

Figure 5. Site Plan, The Cottages Development, Olympia, Washington.



leeway to make the locational choice. In Las Vegas, the use of lots smaller than the 4,000-square-foot minimum was permitted when these lots are "dispersed throughout each block with lots 4,000 square feet and over." (See provisions in Appendix A.)

Allowing greater flexibility usually required more careful review of development proposals. The PUD process customarily required site plan review, and all the communities studied that allowed affordable development under their PUD provisions required such review. In addition to these communities, Dade County and Riverside County required site plan review for small-lot development that occurred under their revised conventional standards. In each case, the site plan review process allowed local officials to examine all elements of a proposal to ensure that the development took into account desired design elements.

It was important, however, that guidelines for site plan review listed the criteria used to examine the various elements in the proposal. Fort Collins, Colorado, for example, published detailed criteria to make certain that there would be no surprises for the developers during the course of the review process. (See Fort Collins case study.)

While planning departments believed that many aspects of small-lot development could best be handled under site plan review, density was the one standard that most felt should be specifically controlled. Each of the communities that revised its development standards to permit small-lot development retained the traditional approach to controlling density in single-family detached development; namely, they used minimum lot size requirements. In addition to lot size requirements, some communities also set a maximum number of units that could be developed. Las Vegas, for example, limited the gross density of small-lot development to 10 units per acre and Dade County controlled the maximum number of units permitted through its General Plan, which set density limits for each zoning district. Furthermore, all but one of the communities that allowed small-lot development under PUD provisions put a cap on the total number of units that could be developed in each project. (See Appendix B.) Fort Collins was the only community that did not establish a limit for the number of units that could be developed under its PUD provisions. (See Fort Collins case study.)

A key reason why some communities put a cap on the number of units that could be developed in small-lot development was that this approach proved to be a more effective way of controlling density than minimum lot size requirements alone. For example, Dade County found that projects developed under its conventional requirements of 7,500-square-foot minimum lot size and 75 feet of frontage almost always resulted in approximately four dwelling units per gross acre. But under ZLL provisions, which allowed smaller average lot sizes and permitted flexibility in setting lot frontage, the resulting densities varied substantially from one project to the next. This variation was especially evident between projects using public streets and those developed with narrower private streets. (See Dade County case study.)

Although it was usually the maximum number of units per acre that planners and developers were concerned with, two communities, Riverside County, California, and Fort Collins, Colorado, included a provision for a minimum number of units per acre in their requirements for small-lot development. Fort Collins believed that requiring a minimum number of units per acre allowed for efficient delivery of services, and Riverside County believed that this requirement also helped to ensure that projects built under relaxed standards for affordable small-lot housing would be used for that purpose, rather than for providing more expensive developments containing a limited number of small lots.

Price Controls

Most communities did not regulate the price of housing developed under their new standards or PUD provisions.

Although only two communities—Riverside County and Coon Rapids—instituted price controls to ensure that small-lot development would be affordable, every project provided housing that was priced lower than that which was built under conventional standards for single-family detached development. Most local officials believed that market forces would prevail in any case. (See Riverside County case study.)

Community Acceptance

Community acceptance of small lot developments—where it was an issue—depended on the projects' compatibility with existing neighborhood residences and with the developers' willingness to share some of the costs of extra public facilities that might be required—such as schools or parks.

Communities required buffers at the perimeter of projects and special design features to help achieve neighborhood acceptance. The benefits of these requirements were believed to outweigh the additional costs of development. Assumption of secondary costs was usually negotiated between the developer and the community. Fort Collins, Colorado, however, took a more active role in trying to keep down secondary costs. Fort Collins provided density bonuses for new development that located close to existing community facilities—thus minimizing the community's servicing costs.

In most cases, it was attention to design details that made the difference in a community's satisfaction with a project. Size of lots and size of units were not as important as quality of design. Although it is often believed that good design cannot be legislated, the experiences of the communities studied indicate that there are regulatory approaches that work. If planners and developers want to make certain that communities will be satisfied with small-lot developments, attention to design details at the outset is what will matter most in the long run.

Part Two. Case Studies

This section presents case studies of four communities: San Antonio, Texas; Riverside County, California; Dade County, Florida; and Fort Collins, Colorado. Each case represents a different regulatory approach.

San Antonio provides an example of a straightforward approach to permitting small-lot development that did not require any special procedures, such as site plan review. San Antonio's new regulations are examined, and two recent small-lot projects are analyzed and compared. Two projects in Riverside County, California, built under an ordinance that was more complex than San Antonio's, are then discussed. Riverside County's new regulations required site plan review, and included a price-control system to ensure that some

of the developers' costs savings were passed on to consumers. An examination of Dade County's provisions for zero lot line (ZLL) development follows. Dade County's regulations combined specific design and siting criteria with a good degree of flexibility for the developer. Finally, the innovative regulatory system established in Fort Collins, Colorado, is presented. Fort Collins attempted to control development by using design and siting criteria that took into account a wide range of community concerns—including neighborhood compatibility and the proximity of new development to appropriate public and private facilities. Providing maximum flexibility for the developer was a major objective of the city's system.



San Antonio's Small-Lot Home District

San Antonio, Texas, like most cities in the country, experienced a major slowdown in the housing market during the 1980-81 recession. Homebuilders, caught with excessive land inventories and high interest rates, pushed for a small-lot housing district in the city's zoning code to allow them to adjust their product to the market's demand for affordable, downsized, single-family housing.

In March 1982, San Antonio adopted new standards for a "small-lot home district." Standards were similar to those adopted by Riverside County, California, which are examined in another section of this report. In keeping with the traditional Texas philosophy towards development regulation, however, San Antonio's ordinance provided for a simpler process, and did not require a special site plan review or price-control system as Riverside County's did. The end results offer an interesting contrast to those in Riverside County.

Housing Problems in San Antonio

According to the National Association of Realtors, the median price of an existing single-family home grew faster from 1982 to 1983 in San Antonio than in any of the nation's 31 largest metropolitan areas—up 19 percent to \$68,100 in 1983 from \$57,600 in 1982. In 1980, the median price of an existing home in San Antonio was almost four times the median income of \$13,775 in the city.

The drive to change the city's ordinances to permit higher-density, small-lot housing came primarily from the homebuilders. Pressure from the public to solve an affordable housing crisis did not appear to be strong. In fact, local citizens seemed more concerned about the shortage of "executive class" housing needed to accommodate the new industries and businesses being attracted to the city and the Austin/San Antonio corridor. Nevertheless, the city's support for small-lot development was a conscious response to a changing market need, and reflected the planning department's belief that its zoning ordinance and subdivision regulations

inhibited the building industry's ability to respond to new housing markets.

San Antonio's R-7 "Small-Lot Home District"

The creation of the R-7 small-lot home district was a relatively simple process, although it took 14 months to produce a zoning amendment. Both the homebuilders and the city's planning staff were well aware of the growing market for downsized housing. Small-lot homes had been built in the San Antonio area as early as 1978, "tested" in the city's five-mile extra-territorial jurisdiction (ETJ) through the granting of variances to lot size requirements, and built within the city limits as PUDs. But obtaining zoning variances, granted by the Board of Adjustment, was a time-consuming and sometimes difficult task. And, as in most communities, the PUD process was more costly and time consuming than building conventional tract housing under standard by-right zoning provisions. Two small neighboring communities, Converse and Kirby, had also allowed small-lot subdivisions to be built. The issue, therefore, was not one of selling local officials on the new downsized housing product; this product had already been demonstrated. The issue was to amend development regulations in the interests of faster processing time, and to institutionalize the small-lot/small-house subdivision as a conventional part of the city's development regulations.

Intent of the Small-Lot Home District. The intent of San Antonio's ordinance amendment was to help developers meet the changing market demand for downsized single-family housing.

The introduction to the ordinance states:

The R-7 small-lot home district is comprised of single-family dwellings which reflect a somewhat different character from that found in R-1 and R-5 zones. Small-lot homes are constructed in a manner which allows attachment of no more than two (2) dwelling units. Further, small-lot homes may be sited on smaller lots than those

permitted under the R-1 and R-5 classifications. R-7 developments shall, however, be placed so as to be compatible with adjoining lot sizes and densities, and not create an anomaly in the area. [See Appendix A for full text of the ordinance.]

Further elaboration on compatibility is contained in the subdivision regulations:

These small-lot home subdivisions should be compatible with adjacent lots and subdivisions, and should be located with consideration given to the densities of neighboring areas in accordance with good planning principles.

The new district allows duplexes and zero lot line homes. Each dwelling must be located on a separate lot and front on a public street.

Development Standards. The key to San Antonio's small-lot home district was the reduction in minimum lot size from 5,000 square feet to 4,200 square feet. Developers had argued for a 3,700-square-foot minimum lot size, but the planning staff and commission believed that lot size to be too small. (See Table 10.)

Table 10. Comparison of Standards for R-7 Small-Lot and R-5 One-Family Districts, San Antonio, Texas.

	R-7 Small-Lot Home District	R-5 One-Family Residence District*
Minimum Lot Size	4,200 sq. ft.	5,000 sq. ft.
Minimum Lot Width	42 ft.	50 ft.
Minimum Setbacks		
Front	20 ft.; or for 10 consecutive units with front vehicular access— $\frac{1}{3}$ at 15-17 ft.; 18-20 ft.; 21-23 ft. Or with rear vehicular access— $\frac{1}{3}$ at 10-12 ft.; 13-15 ft.; 16-18 ft.	20 ft.
Side	5 ft. or 10 ft. with Zero Lot Line	5 ft.
Rear	12 ft. or 5 ft. with vehicular access from rear	20 ft.
Minimum Contiguous Open-Space Between Front Building Line and Rear Lot Line	1,200 sq. ft. with street access; 1,000 sq. ft. with alley access	No requirement
Maximum Building Height	20 ft. or 2 stories	25 ft. or 2½ stories
Off-street Parking Spaces/Unit	2 excluding garage or car port	1 space

* Previously, the least restrictive single-family zoning district. In addition, San Antonio has had a PUD ordinance since 1973 that permits densities as high as 8 dwelling units/acre for single-family housing.

The minimum lot width was 42 feet (as opposed to 50 feet in the R-5 district). Twenty-foot front setbacks were required where off-street parking was provided in front of the structure, unless staggered building setbacks were elected by the developer. If the developer wanted to stagger setbacks, then within any 10 consecutive lots at least one-third of the units had to have building setbacks between 1 and 17 feet; one third between 18 and 20 feet; and one-third between 21 and 23 feet. Front-entry garages or carports had to be set back 20 feet from the property line, regardless of whether staggered building setbacks were used. If off-street parking was provided at the rear of the structure, minimum front yard setbacks could be reduced to 15 feet or, if staggered, they could be set back from 10 to 18 feet using the same formula as above. Vehicle access provided from the rear had to be through an alley, with a 24-foot right-of-way.

Minimum side-yard setbacks could be zero on one side and 10 feet on the other, or five feet on each side. No more than 25 percent of the lots on any block could have five-foot side yards. All zero lot line homes required a five-foot maintenance easement.

Minimum rear-yard setbacks had to be 12 feet where off-street parking was located in the front, with a minimum of 1,200 square feet of contiguous open space between the front building setback line and the rear property line. Where vehicle access was provided from the rear, minimum rear-yard setbacks of five feet were required, with 1,000 square feet of contiguous open space.

Maximum allowable building heights were two stories or 20 feet. Two off-street parking spaces were required, exclusive of a garage or carport. No changes were made in lot improvement requirements for streets, sidewalks, and curbs and gutters.

Projects

Adoption of the small-lot home district in San Antonio caused a flurry of interest on the part of homebuilders. One R-7 project was approved in 1982. Nine small-lot subdivision plats were approved in the first eight months of 1983, totaling 784 lots. 11.5 percent of the 6,793 single-family lots approved during this period. Only two of the R-7 projects were approved for construction in the city. The others, like most new residential projects, were situated in the five-mile ETJ ring. Table 11 provides a breakdown of all R-7 projects approved from adoption of the ordinance in March 1982 through August 1983.

A comparison of a small-lot project that used a number of variances, which was built before the R-7 ordinance was in place, and a project built under new R-7 ordinance offered lessons about some of the effects of the new ordinance. The two projects discussed below were built under very similar lot size standards. Reduced lot sizes permitted both projects to offer affordable housing. The project built under the new R-7 ordinance evidently was able to be built without the developer submitting

Table 11. R-7 Small-Lot Home Projects Approved March 1982—August 1983, San Antonio, Texas.

Project	Lots	Total Acres	Lot Width	Lot Depth	Gross Density/Acre
1982 (March—December)					
Babcock Place	26	5.75	56	125	4.5
1983 (January—August)					
Vista Verde South	13	2.01	—	—	6.5
Stoneridge	103	14.88	44	100	6.9
Heritage Park	137	27.48	42	120	5.0
Big Country	13	1.87	42	138	7.0
Northwest Crossing I	128	20.67	44	100	6.2
Northwest Crossing II	118	16.83	44	100	7.0
New Territories	57	8.5	44	120	6.7
Hidden Meadow North	115	19.22	42	120	6.0
Woodridge	100	21.18	45	108	4.7

a cumbersome variance process and, in that sense, time and money were saved. The fact that the new procedures were simpler, however, is not enough to explain the clear differences in the appearance of the two projects.

What the new R-7 ordinance offered that appeared to make a difference was an element of flexibility that encouraged the developer to build not only more affordable houses, but more attractive and interesting houses. Although the R-7 ordinance did not require specific design features, it did offer options to the developer to vary the siting of individual units. These options, which were available by right within the new zoning district, can make an important difference in the quality of a project. A developer who was sensitive to the effects of a well-designed streetscape could find room to maneuver within the new R-7 ordinance.

The Sunrise Development

"Sunrise," an early small-lot project built in San Antonio, was comprised of 176 zero lot line single-family detached homes on a 28.2-acre rolling site. (See Figure 6.) While built to zoning standards similar to those of the R-7 zone, Sunrise was approved in 1981 on the basis of variances to the existing regulations, prior to the adoption of the R-7 small-lot home district in March 1982.

Sunrise was the product of Ray Ellison Homes, the biggest builder in San Antonio with a 40 percent share of the local housing market. In business for 32 years, Ellison has traditionally built single-family homes for the entry level and lower end of the market. He currently offers homes priced from \$40,000 to over \$100,000. Ray Ellison was named Professional Builder of the Year in 1980 by *Professtional Builder* magazine.

Development Standards and Project Design. Sunrise offered two home styles—"Modern Homes" and "Chalet Homes"—and a long list of sizes and prices to choose from. Modern Homes ranged in size from 825 to 1,053 square feet with prices from \$48,940 to \$53,950 as of September 1983. Nine different sizes were offered; one-car garages were

Project Profile

SUNRISE SAN ANTONIO, TEXAS

Site Area:	28.2 acres
Total Dwelling Units:	176
Gross Density:	6.2 units/acre (approximate)
Housing Types:	Single-family detached
Average Price:	\$51,617

Unit Size (Sq. Ft.)	Bedrooms	Bathrooms	Initial Price Offering
Modern Homes			
825	2	1	\$48,950
862	2	1	49,950
901	2	1	50,950
902	2	1	50,950
916	3	1	50,950
955	2	1	51,950
979	3	1	52,950
1,032	3	1½	53,950
1,053	3	1	53,950

Chalet Homes

29 Models from 907 to 1,823 sq. ft.; priced from \$50,950 to \$80,950.

Developer: Ray Ellison Homes
San Antonio, Texas

standard. Chalet Homes ranged in size from 907 to 1,823 square feet and were priced from \$50,950 to \$80,950. Twenty-nine varieties were offered. Standard features that distinguished Chalet Homes from Modern Homes, in addition to their larger size, included two-car garages, wood-burning fireplaces, ceiling fans, and privacy fencing. (See Figure 7.)

The average lot size in the project was 5,350 square feet. The smaller units were typically built on 42' x 100' lots. Front setbacks were 15 feet. Staggered setbacks were not allowed by the regulations under which the project was developed. Streets were built according to the subdivision standards with 50-foot rights-of-way, 30-foot asphalt paving, mountable

Figure 6. Sunrise Development, San Antonio, Texas.

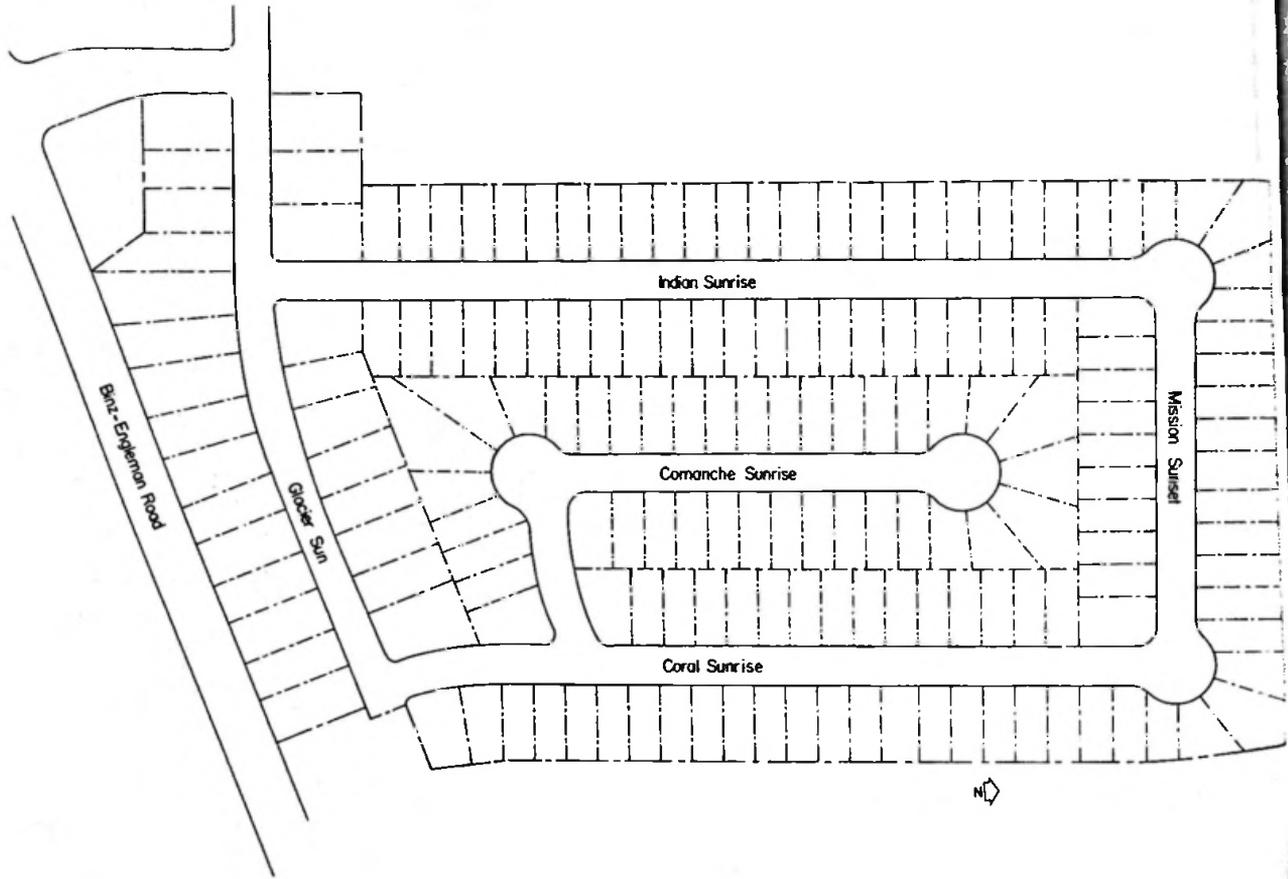
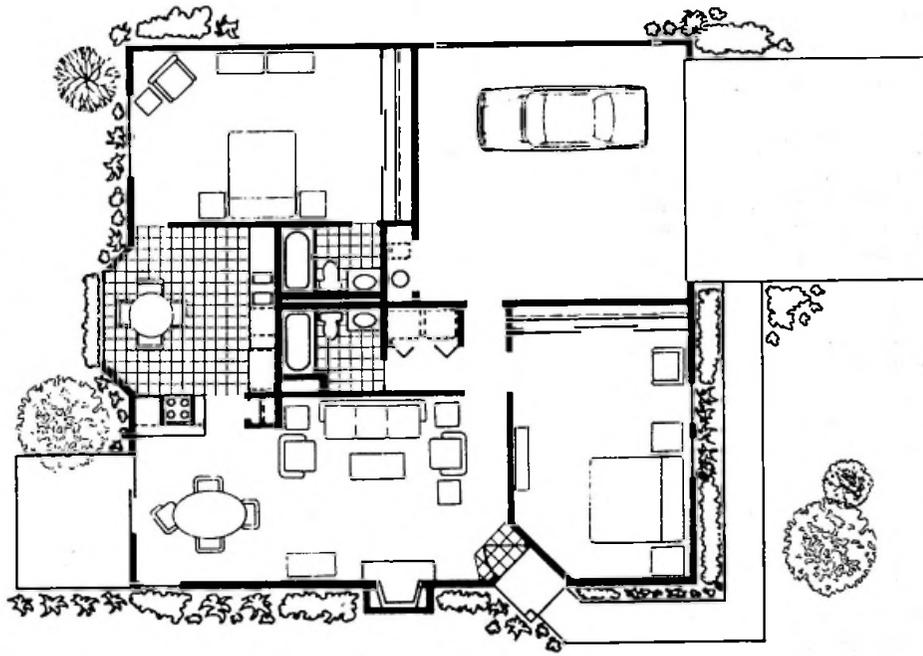


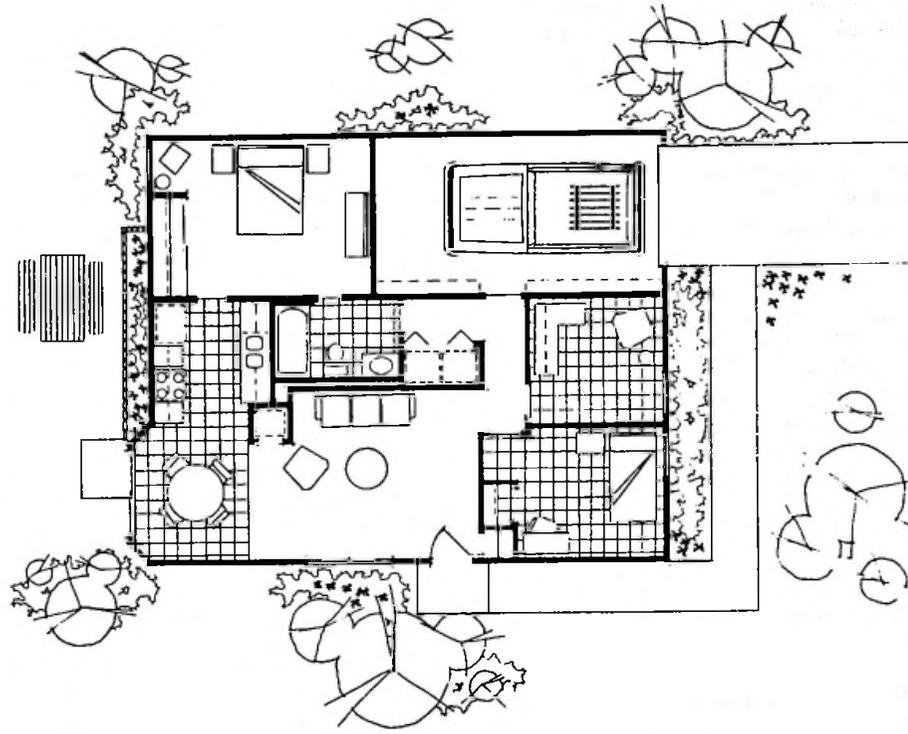
Figure 7. Floor Plans, Sunrise Development, San Antonio, Texas.

CHALET HOMES



Living Area	1309 sq. ft.
Parking Area & Storage	399 sq. ft.
Porch & Patio	96 sq. ft.
Total Area	1804 sq. ft.

MODERN HOMES



Living Area	862 sq. ft.
Garage & Storage	250 sq. ft.
Porch & Patio	30 sq. ft.
Total Area	1142 sq. ft.

concrete curbs with integral gutters, and three-foot concrete sidewalks on both sides of the street. Two off-street parking spaces were available in Modern Homes, including one garage space. The project included standard city sewer and water connections. No storm drainage was required. A landscaping package included a few trees and shrubs per lot, but no sod. No dedications or exactions were required, but the developer voluntarily donated \$50,000 in kind to upgrade an adjacent public park.

Although there were nine different floor plans and elevations offered in the smaller Modern Home units in the Sunrise project, the lack of attention to variety in exterior architectural detail, the relatively bland color schemes, and the uniform front setbacks created a monotonous streetscape with little interest. The lack of fencing and front-yard sodding also detracted from the appearance of the project.

There was no neighborhood opposition to Sunrise, since it was built on the developing fringe of San Antonio, in rolling fields completely surrounded by vacant land. The project, while minimal in design and amenities, was considered affordable, with smaller homes averaging in price from around \$52,000 to the low \$70s. The median price of a new home in San Antonio was in the upper \$60s. The key to the project's affordability was the low cost of the land, acquired by the developer some years earlier at \$3,500 per acre or \$565 per unit. Developed lot costs averaged \$4,700.

Market Demand and Buyer Profiles. Market reception was strong. As of July 1983, with the project three-fourths sold out, sales were running 50 percent ahead of the schedule initially projected by the company.

Average homebuyers of Sunrise units were 27 years old; 85 percent were married. The incomes of buyers ranged from \$18,240 to \$22,560. Sixty percent of the buyers were dual-income households; eighty-two percent of them were childless.

The Stone Ridge Development

Stone Ridge, one of San Antonio's early R-7 projects, was striking in its contrast to Sunrise. Although both projects offered housing units in the same size and price range, Stone Ridge, in the opinion of the authors, was a superior project in overall aesthetic quality, architectural detail, and project amenities. (See Figure 8.)

Stone Ridge was composed of 103 single-family detached homes on 14.9 gently sloping acres. Prices ranged in September 1983 from \$49,500 for the 832-square-foot model to \$59,900 for the 1,147-square-foot model. A mix of one- and two-story units with one- and two-car garages was included. (See Figure 9.) Like Sunrise, the project was near the urban fringe, surrounded by vacant land, and encountered no public opposition. The project was developed by Nash Phillips-Copus, Inc., a large firm based in Austin, Texas, that builds approximately 3,500 residential units per year, in addition to apartments and commercial projects. The firm began working in the San Antonio area in 1970.

Project Profile

STONE RIDGE SAN ANTONIO, TEXAS

Site Area:	14.9 acres
Total Dwelling Units:	103
Gross Density:	6.9 units/acre (approximate)
Housing Types:	Single-family detached
Average Price:	\$55,000

Unit Size (Sq. Ft.)	Bedrooms	Bathrooms	Initial Price Offerin
832*	2	1	\$49,500
968*	2	1	53,000
1,015* (Joint Master suite)	2	1	56,000
1,047*	3	1	55,000
1,072**	3	2	58,900
1,095**	3	2	58,900
1,147**	3	2	59,900

Developer: Nash Phillips-Copus, Inc.
Austin, Texas

* One-car garage. ** Two-car garage.

Corner lots add \$750.
Over-sized lots add \$1,500.

Development Standards and Project Design.

When comparing Stone Ridge with Sunrise, it was interesting to note how slight some of the changes in basic site design standards were and yet how dramatically different the results were. Most of the development standards used by both Stone Ridge and Sunrise were virtually the same. Lots in Stone Ridge ranged in size from the 4,200-square-foot minimum allowed by the ordinance to 8,641 square feet. Typical lots were 44-feet wide by 100-feet deep. Streets, sidewalks, and other improvement standards were identical.

The major difference between the two projects was the much greater attention given to design details in Stone Ridge. Stone Ridge offered six floor plans and six elevations—36 different products to choose from. Each of the six elevations was significantly different from the others in style and architectural detail. Architectural details on building facades, porches, along roof lines, and around windows were varied and well mixed throughout the project. Building materials and color schemes were also varied, and yet compatible and harmonious overall. Details in Sunrise, in contrast, were much more uniform. The elevation and design distinctions that did exist between different housing units were slight by comparison.

The designers of Stone Ridge were sensitive to streetscape—the aesthetic quality of the project as viewed from the street. Attention to small details affecting streetscape began in the layout of the streets and lots themselves—in the site plan. Most streets were short, so that the majority of homes in the project were aligned in rows of 10 or less. Lot sizes were well mixed, alternating in size from the lot

Figure 8. Stone Ridge Development, San Antonio, Texas.

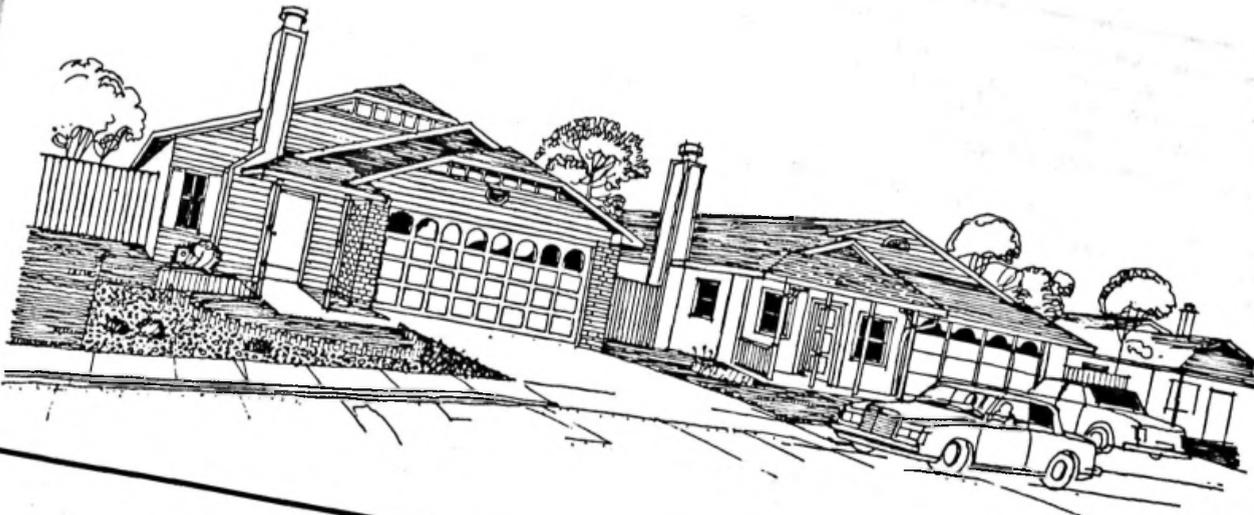
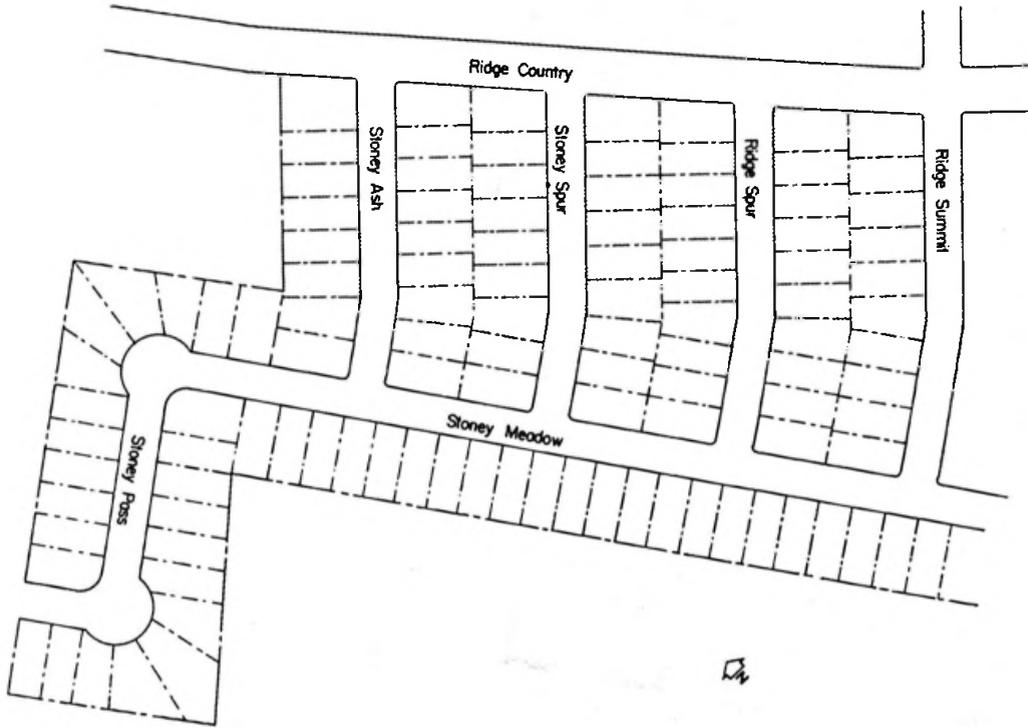
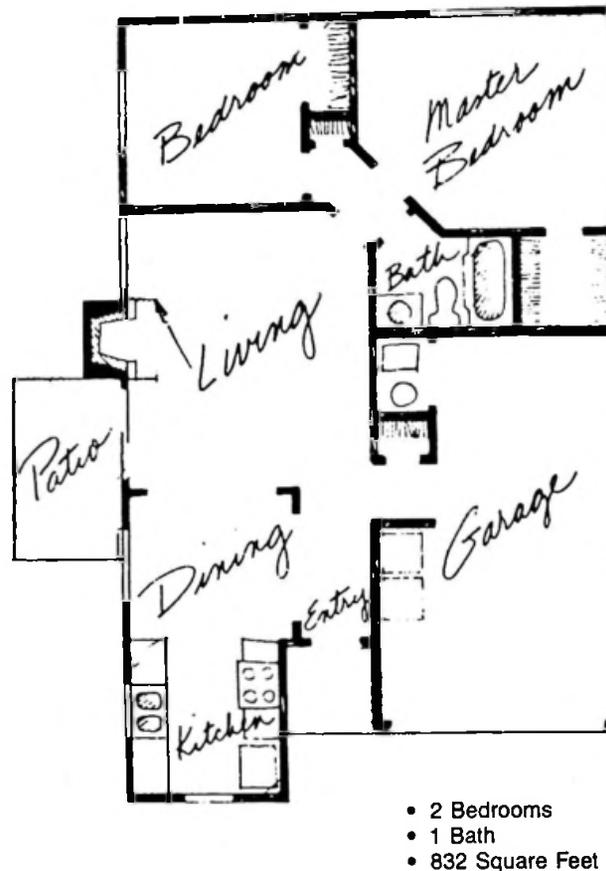


Figure 9. Floor Plan, Stone Ridge Development, San Antonio, Texas.



next door, and, in many cases, staggered across the street from one another. The end result was that two lots of identical size were rarely located side by side, and two identical houses rarely lined up squarely across from one another on opposite sides of the street.

Varied setbacks (allowed, but not required by the ordinance) were an important design detail that made a difference. Wherever possible, the minimum 15-foot setback was exceeded; sometimes setbacks were as great as 25 feet. As a result the houses did not appear to crowd the street.

Side-yard fencing to ensure privacy was standard throughout the project, and the standard landscaping package for each unit included front-yard sod, three trees, and two shrubs.

The attention to detail plus added design features in Stone Ridge produced a project that offered small lots at a relatively high density that did not feel crowded, and small affordable houses that had variety, visual interest, and did not look inexpensive. On almost every one of these counts, Sunrise achieved the opposite results. Lot sizes were uniform, side by side, and lined up directly across the street from one another. Streets were relatively long, some with as many as 24 units lined up at a stretch. There were no

varied setbacks, less landscaping, occasional side-yard fences, no sod, and minimal attention to architectural detail. Admittedly, homeowners could be expected to improve the project's appearance as their own landscaping began to mature.

Design Controls and Project Amenities.

There were two other important distinctions between Stone Ridge and Sunrise. Stone Ridge included a small, common recreational facility, with two tennis courts and a junior olympic-sized swimming pool. A homeowners association owned and maintained the facility. Initial monthly dues were set at \$10 per house, with no initial membership fee. This amenity, provided at relatively low cost to homeowners, increased the attractiveness of the project, and may have been one of the factors giving it a competitive edge over its rivals.

The primary owner of Stone Ridge, San Antonio Savings Association (a Texas-chartered mutual savings and loan association), imposed a set of covenants and deed restrictions on the project. These restrictions helped to ensure the quality of short-term maintenance in the project, as well as to guard against future design changes that might detract from the high standards initially set by the builder. The

covenants and deed restrictions governed vehicle parking, a problem in some similar projects where recreational vehicles appeared to outnumber the small houses. With regard to vehicle parking, the covenants state:

No boat, trailer, camper body or similar vehicle, large truck, or any disabled vehicle shall be parked for storage in the driveway or front yard of any lot, nor shall any such vehicle be parked for storage in the side yard of any lot unless parked to the rear of a screen fence.

The covenants and deed restrictions also created an architectural control committee, initially run by the developer, later to be turned over to the homeowners association. The architectural control committee was charged with approving all additions, changes, or alterations made to buildings, fences, and walls that might affect the "harmony of exterior design and location in relation to surrounding structures and topography." The purpose of the committee was stated in the covenants:

The primary function of the Committee . . . is to protect property values by preventing unusual, radical, uncommon, curious, odd, extraordinary, bizarre, peculiar or irregular external designs from being constructed on the properties.

In one of the small houses in Sunrise, which had no deed restrictions or architectural control board, the owner had converted the one-car garage into an extra room—an obvious do-it-yourself job. Regardless of how the architectural review board of Stone Ridge might react to the aesthetics of such a proposal, should one ever be made, the reduction in off-street parking caused by converting a garage to living space is a concern in a downsized housing project.

Other restrictions in Stone Ridge's covenants addressed the keeping of livestock and poultry, the design and location of fences and radio and television antennas, and general site and building specifications that would ensure that any future houses constructed in the project would be compatible with those already there, and built to the same, if not higher, standards.

Market Demand and Buyer Profile. Homes in Stone Ridge sold very briskly. Forty-four sales were made from a temporary sales trailer parked on the site until the model units could be completed. At one point the sales staff abandoned the process of drawing up sales contracts and started putting numbered pins on the map as they accepted people's earnest money checks in order to keep the lines moving. Stone Ridge and another Nash Phillips-Copus small-lot project set the top sales records in San Antonio in the four years between 1979 and 1983.

Typical Stone Ridge buyers were 25 to 32 years old; their average income was estimated at \$24,000; 80 percent were childless couples, and 75 percent were first time homebuyers. Sales officials of the firm described their typical buyers as entry level and middle-management professionals.

Results of San Antonio's R-7 Zone

Housing Affordability. San Antonio's small-lot home district successfully created the opportunity for homebuilders to respond to the market demand for more affordable housing. Ten subdivisions were approved under the R-7 provisions within the first 17 months of the adoption of the ordinance. Roughly 10 percent of the total single-family lots approved in San Antonio since adoption of the ordinance were in "small-lot" subdivisions (i.e., less than the previous 5,000-square-foot lot size minimum). Single-family homes in the 800-square-foot range were being produced at prices well below the median price of new single-family homes in the area. Like most communities, San Antonio imposed no price-control system on these homes. But the homebuilding business in San Antonio was very competitive, and ensured that cost savings achieved through reduced development standards were passed on to consumers in the form of lower-priced housing.

Developers pointed out, however, that while initial interest in the small-lot subdivisions was strong, sales of small homes would begin to lag if interest rates went down significantly. They claimed that consumers would buy the biggest house they could afford, and because developers made higher profit margins on larger homes, their interest in providing smaller homes would decline.

Homebuilders also noted that their ability to meet the market's demand for smaller, more affordable housing was in large part a function of land prices. With economic recovery and increased housing demand, land speculation in San Antonio is rampant—a seller's market. In some cases property changed hands several times among speculators, rising in price each time, before it was acquired by a builder. The rising cost of raw land, or improved lots for those homebuilders like Nash Phillips-Copus that do not develop the land themselves, was considered the single biggest barrier to their ability to continue providing affordable housing.

Development Standards and Project Design. Designing a subdivision full of small lots requires attention to detail. Tolerances for error are tight. The contrasts between the two San Antonio projects presented here, Sunrise and Stone Ridge, point out the importance of site design details in determining the quality of the final product. Site design—the layout of streets, the alignment of lots, the mixing of various lot and house sizes, and the variation in building setbacks—is critical.

San Antonio, like many Texas communities, took a laissez-faire attitude toward development controls. California homebuilders call Texas "heaven." The R-7 ordinance San Antonio adopted simply institutionalized a smaller minimum lot size, with a few modest design specifications. In contrast, Riverside County's small-lot ordinance, with similar standards, required complete site plan review before approval. (See Riverside County case study.) With no

site plan review process in San Antonio, many of the design details that determined the quality of the final product were left up to the standards and tastes of individual developers.

Future Prospects. There was no neighborhood opposition to the two projects presented here because there were no adjacent neighbors to oppose them. There were, however, concerns expressed by citizens in San Antonio about the small-home concept in general and its cumulative effects over time. As in most communities where development regulations have been amended to permit smaller, more affordable housing, labels of "slums of tomorrow" and "throwaway neighborhoods" were fairly common. Opponents of these projects claimed that the projects were creating areas of high turnover rather than stable neighborhoods of lasting quality. San Antonio had not yet had to face the question of what to do if a number of small-lot projects were proposed for one area. Arlington, Texas, in the Dallas area, had a similar small-lot ordinance that was intended to be used primarily for infill housing. Staff there were troubled by the fact that large numbers of small-lot projects were being approved in one section of the city, rather than being integrated

throughout the city and in neighborhoods having a range of types and sizes of housing.

The "slums of tomorrow" label, while speculative at this point, does raise a valid concern. The Sunrise and Stone Ridge projects demonstrated that different levels of quality and amenity were possible even when houses were nearly identical in size and price. Many unforeseeable factors will affect the quality and condition of these two projects 10 to 20 years from now, but clearly Stone Ridge, with its higher quality design and private covenants and deed restrictions, has laid the foundation for assuring longer-lasting value than has Sunrise. Upkeep and maintenance by homeowners will be an important influence on the future of these two projects. In the opinion of the authors, Stone Ridge will inspire better upkeep on the part of homeowners, and the architectural control board there should help ensure the quality of both long-term and short-term maintenance. It would be interesting to return in 10 years and compare prices of homes of comparable size in these two subdivisions. In conclusion, while both projects were responding to a serious housing need in the market place, one of them appears to have met the need with fewer risks to the surrounding community.

Affordable Housing with Price Controls— Riverside County, California

Riverside County, California, one of the fastest growing counties in the country, offered a good example of the housing affordability problem and an interesting public response to the problem. Located east of Los Angeles, Riverside County in the early 1980s was being transformed from a rural to an urban county and was finding it necessary to adjust to intense growth pressures. The county responded to its housing problem by amending its zoning ordinance to create a density incentive zone for the express purpose of "facilitating the construction of affordable housing." The "R-6 Residential Incentive Zone," adopted in August 1981, reduced minimum lot size requirements from 7,200 to 3,600 square feet, with comparable reductions in frontage and setback requirements. In exchange for increased densities, the county enacted a price-control system to ensure that the cost savings due to less stringent development standards would be passed on to consumers in the form of lower-priced housing.

Housing Problems in Riverside County

Riverside County suffered from the housing problem common in many communities throughout the country—housing prices rose faster than real incomes during the 1970s, and a growing proportion of its residents were unable to afford a house. The median price of new homes in the county was in the \$80,000 to \$100,000 price range in 1979. Between 1970 and 1980, the median resale price for an existing home increased 225 percent, while median incomes rose only 131 percent. In 1980, the median price of an existing house was \$73,582, requiring a gross family income of \$32,976 to qualify for a mortgage (using the 25 percent of gross family income rule-of-thumb). Riverside County's median family income in 1980, however, was \$19,707. Eighty-two percent of the households in Riverside County could afford the median-priced existing home in 1970; by 1980, only 21 percent could. Mobile homes had provided much of the county's

affordable housing, accounting for approximately 30 percent of all existing housing units in 1980.

Riverside County's R-6 Residential Incentive Zone

Riverside County's 1980 Housing Element identified its development standards as one of the constraints to the provision of affordable housing. These standards required a minimum lot size of 7,200 square feet for single-family conventional tract housing. Under the county's Planned Residential Development (PRD) process, smaller lots and zero lot line housing could be developed, but the PRD standards required 40 percent of the net area of a project to be retained in common open space managed by a community association. This and other criteria required under the PRD process cancelled out the economic advantages provided by allowing smaller lots and flexible siting arrangements. The PRD option, thus, was seldom used by developers.

The concept of the residential incentive zone grew out of the work of a technical advisory committee, composed mostly of builders and developers working closely with the county's planning staff. The incentive system developed was the county's alternative to the mandatory inclusionary low- and moderate-income housing provision used by Orange County and others to comply with California's state requirements for housing elements and for provisions that would encourage affordable housing. A mandatory inclusionary approach was politically unacceptable to the county's Board of Supervisors, a progrowth board closely aligned with the interests of the building industry. Riverside County's incentive system was the first such alternative system approved by the state.

Intent of the Residential Incentive Zone. The intent of the R-6 Zone was to "establish a specialized zone that will, through incentives and consideration of a specific housing proposal in conjunction with a

proposed zone change, facilitate construction of affordable housing.” (See full text of the ordinance in Appendix A.) The R-6 Zone was intended to be used in areas where “basic services such as water, sewer, other utilities and adequate road circulation already exist or can be reasonably extended.” An important feature of the new zone was that it could only be used in conjunction with an “approved development,” and only for the construction of “the project approved in connection with the granting of the zone classification, or for a project that is thereafter specifically approved by the Board as an affordable project to replace the previously approved project” (emphasis added). This meant that all design details of a specific project, including plot plans, floor plans, building elevations, and other design review requirements, had to be approved in conjunction with the application for a zone change. Granting the incentive zone change only for a specifically approved affordable housing project tied the zone change to the purpose of the ordinance and reduced the possibility of land price speculation that other communities had suffered through rezonings unrelated to a specific project. The ordinance further declared that applications for the R-6 Zone would receive priority processing by “all County departments involved in the review and issuance of permits.”

Development Standards. The major innovation in the new ordinance was the reduction of the minimum lot size from the 7,200 square feet that was previously required to 3,600 square feet. (See Table 12.) Allowable densities were not set by ordinance, but were to be determined by the “physical and service constraints of the property and the area in

Table 12. Comparison of Standards for R-6 Incentive and R-1 One-Family Dwelling Zones, Riverside County, California.

	R-6 Incentive Zone	R-1 One-Family Dwelling Zone
Minimum Lot Size	3,600 sq. ft.*	7,200 sq. ft.
Minimum Lot Width/Depth	30 ft.	60/100 ft.
Minimum Setbacks		
Front	10 ft.**	20 ft.
Side	Variable***	5 ft.
Rear	Variable***	10 ft.
Maximum height	35 ft.	40 ft.
Minimum Street Widths		
Major Interior Right of Way/ Pavement	56/36 ft.	60/45 ft.
Minor Interior Right of Way/ Pavement	50/32 ft.	60/36 ft.
Offstreet Parking Spaces/Unit	1	1

* May be reduced to 2,500 sq. ft. as part of zero lot line attached unit project.

** Twenty feet for garages that open parallel to the street.

*** Subject to site plan review.

which the property is located.” The ordinance did, however, include a minimum allowable density of four units per gross acre. In many cases, gross densities as high as seven to eight units per acre could be achieved with the 3,600-square-foot lot size permitted.

Both developers and planners interviewed in the county agreed that the previous 7,200-square-foot minimum lot size was overly restrictive, out of step with the market place, and counter to the goal of providing affordable housing. No technical rationale for this standard seemed to exist; it had simply been used as long as anyone could remember.

Minimum street widths were 36 feet of pavement within a 56-foot right-of-way for major interior streets (reduced from 60 feet), and 32 feet of pavement within a 50-foot right-of-way for minor streets and cul-de-sacs. (See Table 12.) One off-street parking space was required for each dwelling unit. Most houses included a two-car garage to satisfy market preferences.

Uses permitted in the R-6 Zone included one-family dwellings, mobile homes on permanent foundations, two-family dwellings, multifamily dwellings, and apartment houses.

Price Controls. Some public officials and citizens in Riverside County had expressed concern that changes in development standards would result in higher profits for developers, rather than savings for consumers. In response to these concerns county officials included provisions in the R-6 incentive zone regulations that attempted to control the price of the housing units built under the new standards.

Riverside County’s ordinance contained these price-setting formulas:

- Option A The average selling price of the dwelling units shall not exceed 80 percent of the average (new) home sales price in the market area. The market area and average home sales price shall be determined by the Board of Supervisors, or
- Option B The selling price of 25 percent of the dwelling units shall be at an amount affordable to families earning no greater than 120% of the County median income, as determined by the Board of Supervisors, or
- Option C The selling price of 15 percent of the dwelling units shall be at an amount affordable to families earning no greater than 80 percent of the County median income, as determined by the Board of Supervisors.

The ordinance further stated that “if a development is benefited, directly or indirectly, through the use of governmental funds for site acquisition, extension of basic services or roads, or other expenditures that assist the development, the sales price determined pursuant to subsections (a), (b), or (c) of this section [Options A, B, and C above] may be reduced by the Board of Supervisors.”

Special provisions contained in the ordinance elaborated on the price setting system:

- (a) The market area for a project and a tentative sales price or median income determination shall be made by the Board of Supervisors during the processing of the applications for the project.
- (b) The County, from time to time, by resolution of the Board of Supervisors, shall publish information relating to home sales price, market areas and median income in the County of Riverside, which information shall be available to prospective applicants prior to filing an application for a project.
- (c) The final determination of the home sales price or median income for a specific project shall be made at the time of issuance of building permits for the project, provided, however, that amount shall not be less than the tentative amount determined during the processing of the applications. The determination shall be made by the Board of Supervisors upon the recommendation of the Planning Director, which shall be initiated by application of the developer coordinated with the request for building permits.
- (d) At the time of recordation of the final map, a Declaration of Covenants, Conditions and Restrictions approved by the County shall be recorded that establish the affordability criteria for the development, including, but not limited to, structure size, type and reference to the method for fixing the sales price for units in the development.
- (e) In the furtherance of the intent that the R-6 Zone be used only for the construction of affordable housing, the Declaration of Covenants, Conditions and Restrictions shall prohibit the sale of lots without dwelling units sold on or constructed thereon in conjunction with the sale of the lot; provided, however, this shall not prohibit the sale of an entire tract, or an approved unit thereof, for construction of the units by the purchaser thereof.

The pricing system was tied either to the average price of new housing in the county or to the median income of county residents, both subject to review and update biannually by the County Board. There were no income or residency requirements for potential buyers, nor were there any restrictions on resale. In 1982, after considerable analysis, testimony, and debate, the county set the average sales price for Option A, the average price option, at \$62,988, and set \$19,707 as the median income figure for the county to be used in Options B and C. Builders were required to provide semiannual reports on their sales prices to the county, plus a summary report when the project was completely sold.

Initially, all developers of projects approved under the R-6 zone chose price Option A, which established a ceiling on the average sales price of all units in a project. The County Board preferred Option A, although there had been some pressure from the Planning Commission to encourage the use of Options B and C, or even to make all rather than only a portion of the units comply with the pricing formulas in Options B and C.

Under Option A, developers had to commit at the beginning of the project to an average price ceiling for their entire project, and, therefore, had to budget the estimated cost increases that might occur during the construction and sales phases into their initial price schemes. Most developers initially using the

R-6 Zone, while not pleased with the notion of price controls in general, were relatively comfortable with the average price system. Since the opportunity to begin building followed a severe housing slump, they were simply glad to get back to work and generate cash flow, regardless of the conditions under which they had to work. They pointed out, however, that the system could only work in a downward-moving economy or in a situation where there was very little pressure to raise material and labor costs.

As the economy recovered and the housing market picked up, the average price option became much less attractive. Materials and labor costs began to rise, leaving developers locked into preset average prices with no way to recover cost increases. One developer with a surplus of funds in his advertising budget was able to use that money to offset construction cost increases he had not predicted. Option B, which only controlled the price of one-quarter of the units in a project, allowed some flexibility for developers who needed to recover cost increases during construction and sales phases by adjusting prices on the uncontrolled units to the extent the market would allow. In time all developers chose to use Option B.

Site Plan Review. A list of the information that applicants for the R-6 Zone were required to file with the county is shown in Table 13. The design details of affordable housing projects built under Riverside County's R-6 Zone were negotiated with developers by the planning staff's Land Division Committee, and in subsequent public hearings

Table 13. Filing Requirements R-6 Zone Application, Riverside County, California.

1. Complete Application
 - a. Change of Zone Tract Map (or plot plan for rental)
 - b. Plot Plan
 - (1) Building Footprints
 - (2) Larger Scale Dimensional Typical Footprints of Each Floor Plan (e.g., 1" = 10' Scale)
 - (3) Floor Plan and Elevation Assignments (including tabulation)
 - c. Grading Plan
 - d. Fencing Plan (including materials details)
 - e. Elevations (including materials details)
 - f. Floor Plans (dimensioned)
 - g. Streetscape (typical)
 - (1) Street Face
 - (2) Perspective
 - h. Public Relations Package
 - (1) Project Location and Scope
 - (2) Option and Financing Information
 - (3) Special Features (including compatibility elements)
 - (4) Reductions in Plot Plan, Floor Plans, Elevations and Fencing Plan
 2. Option Details
 - a. Option Selected
 - b. Selling Price (Option A)
 - c. Financing Details (Options B, C, D)
 3. Location and Examples of Similar Projects
-

before the Planning Commission and the County Board. The site design review process went into considerable detail. It included everything from plot plans, to streetscapes, and of course, pricing options. Design features that were reviewed by staff are listed in Table 14.

Table 14. Staff Review Checklist, R-6 Zone Application, Riverside County, California.

1. Tract Design
2. Plot Plan
 - a. Setbacks
 - b. Yard Areas
 - c. Overhang Details and Encroachments
 - d. Mix of Floor Plans and Elevations
 - e. Parking Requirements
 - (1) On-and Off-Site
 - (2) Curb-Cut Locations
 - (3) Garage Requirements
3. Grading Plan
4. Fencing Plan
 - a. Appearance from Street
 - b. Key Lot Situations
 - c. Street Corners
 - d. Back-up or Other Special Fencing Needs
5. Elevations
 - a. Variety and Sufficiency for Scale of Project
 - b. Differentiation
 - c. Compatibility with Adjacent Architecture
6. Floor Plans
 - a. Location of Rooms
 - b. Access to Yards
 - c. Location of Windows
 - d. Range of Dwelling Sizes
 - e. Potential Incompatibilities
 - f. Amenities (bathrooms, appliances, flooring, garages, etc.)
 - g. Materials and Colors (roofing, siding, trim, etc.)
7. Street Profile
 - a. Proportion
 - b. Variety
 - c. Landscaping Needs
 - d. Driveway and Walkway Locations
 - e. Dwelling Orientation
 - f. Mix of Heights

Small-lot development at higher densities required that more attention be given to detail in site design and project planning. Planning staff in Riverside County were particularly concerned with trying to achieve a high degree of design diversity in the projects. They attempted to avoid monotonous streetscapes by encouraging a mix of housing styles with different front elevations, varied setbacks, and variations in roof lines. Builders were required to provide four to five front elevations in their projects. Developers were encouraged to integrate houses of different types, which ranged from 800 to 1,500 square feet in size, throughout a project, rather than to segregate them by size. Attention was also paid to fencing plans that helped maintain privacy where single-family detached houses were sited close together. Drainage plans were also important in small-lot developments, since roof overhangs can intensify drainage problems and destroy the landscaping on adjacent property in heavy rains.

Curb cuts were also carefully reviewed because they proved to be closely spaced when only 30 feet of frontage (the minimum allowed) was provided. Minimal spacing between curb cuts seriously constrained on-street parking.

Projects

Builder response to the R-6 residential incentive zone was brisk. As of June 30, 1983, 27 applications had been filed for R-6 Zone changes in Riverside County, 24 of which had been approved. (Table 1 lists project applications, acreages, and numbers of types of units.) Most of the approved projects were for single-family detached units ranging in size from 32 units on 4.5 acres to 538 units on 67.7 acres. Seven projects had been built or were under construction by June 1983. Two of them, Woodhaven Cottages and Cobblestone Village, are described below.

Woodhaven Cottages

Woodhaven Cottages, developed by Woodhaven Homes of Riverside, was one of the first R-6 projects to be approved and built in the county and the first in the town of Sunnymead. It was tentatively approved for 291 single-family detached units on 4 acres at a gross density of 7.1 units per acre. The total number of units finally built was 266, reduced to relieve traffic circulation and safety problems in one especially dense section of the project. (See Figure 10.)

Woodhaven Cottages offered five different floor plans of single-family detached houses ranging in size from 800 to 1,457 square feet, with one- and two-car garages. (See Figure 11.) Units were initially priced from \$49,950 to \$73,550. The developer chose to comply with pricing Option A, and the average sales price was set at \$64,009, somewhat higher in Sunnymead than the overall county average of \$62,988.

The project was located on flat terrain originally zoned R-1, surrounded by single-family detached residential development (also zoned R-1) and vacant land. One corner of the project was across the street from the Moreno Valley High School.

Opposition to the Project. Woodhaven Cottages ran into opposition from the Planning Commission, adjacent residents, and the local school district, particularly on the grounds of its high density. The Planning Commission recommended that the County Board deny the zone change on the grounds that the R-6 zoning was not consistent with surrounding land uses; there were unresolved circulation problems in the project; and the impact on local schools had not been mitigated.

The commission's finding of inconsistency with surrounding land uses was due largely to a petition signed by 105 neighboring property owners who were opposed to the project. In addition to voicing their concern for the impact on schools and traffic circulation, neighboring residents cited adverse impacts on their property values. They felt the smaller homes on 3,600-square-foot lots would

Table 15. Applications for R-6 Zone Change (6-30-83), Riverside County, California.

Location	Applicant	Case No.	Acreage	No. of Units & Type	Status
Edgemont/Sunnymead	Rancho Calif.	T 18455	40.0	226 Single-Family	Board Approved 5/24/83
	*Marlborough Homes	T 18283	67.7	538 Single-Family	Board Approved 9/14/82
	*Woodhaven	T 18353	41.0	291 Single-Family	Board Approved 4/ 6/82
	Myerscough	T 18512	79.0	499 Single-Family	Board Approved 12/21/82
	*Citation	T 18470	11.0	84 Twinhomes	Board Approved 6/15/82
	Barratt	T 18435	8.4	59 Single-Family	Board Approved 6/ 7/83
	*Barratt	T 18152	29.5	229 Patio Homes	Board Approved 9/ 0/82
	Jones Co.	T 17867	30.0	195 Single-Family	Board Approved 2/15/83
	Dean Corp.	T 18930	40.0	293 Single-Family	Board Approved 2/ 1/83
	*Covington (Cobblestone)	T 18912	80.0	393 Single-Family	Board Approved 2/15/83
	Sky Blue Meadows	T 18722	24.5	187 Twinhomes	Board Approved 12/14/82
	William Lyon Co.	T 19080	11.5	79 Single-Family	Board Approved 4/12/83
	Covington	T 18991	40.0	116 Single-Family	
					3,189 = Total Units
Sun City	*Ramos Jensen	T 18041	100.0	433 Single-Family	Board Approved 1/12/82
	Hermosa Homes	T 15383	95.0	702 Twinhomes	Board Approved 1/ 5/82
	Hermosa Homes	T 18180	6.7	108 Condominiums	Board Approved 1/ 5/82
	Brandmore, Inc.	T 18532	45.5	286 Single-Family (Modular)	Board Denied 6/15/82
				1,529 = Total Units	1,243 = Units Approved
Rubidoux	*Citation	T 18268	15.6	126 Twinhomes	Board Approved 3/16/82
	John Barker	T 18338	6.0	66 Rentals	Board Denied 3/23/82
	John Barker	T 18519	4.5	32 Single-Family	Board Approved 12/21/82
	Bob Allingham	T 18692	9.0	152 Condominiums	Board Approved 6/ 7/83
				376 = Total Units	310 = Units Approved
Hemet	CY Develop. Co.	T 16811	17.0	121 Twinhomes	Board Approved 1/19/82
	Quandt (Woodhaven)	T 18568	34.0	236 Single-Family	Board Approved 2/15/83
				357 = Total Units	357 = Units Approved
Cathedral City	Francis Markley	PP 6356	2.2	51 Rentals	Cathedral City Approved
	Francis Markley	PP 6373	0.2	4 Rentals	Cathedral City Approved
	Francis Markley	PP 6374	0.2	4 Rentals	Cathedral City Approved
				59 = Total Units	59 = Units Approved
Palm Desert	Ramos Jensen	T 18042	98.0	519 Single-Family and Twinhomes	Board Denied 3/23/83
Countywide					5,042 = Total Units Approved

* Built or in the process of being built.

create "instant slums" and that the values of their larger homes on 7,200-square-foot lots would be diminished as a result. The local school district was opposed to R-6 projects in general, claiming that the school system could not accommodate the added enrollments as quickly as the R-6 projects were likely to be developed.

The County Planning Department's staff report recommended approval of the project, going against the views of the Planning Commission. The staff report found that:

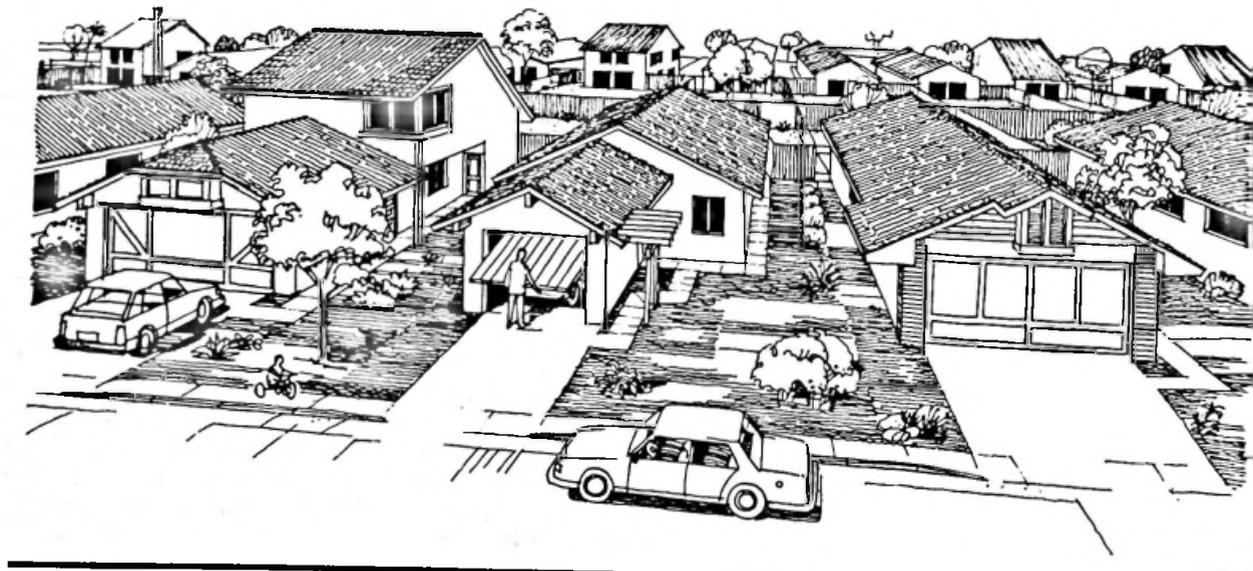
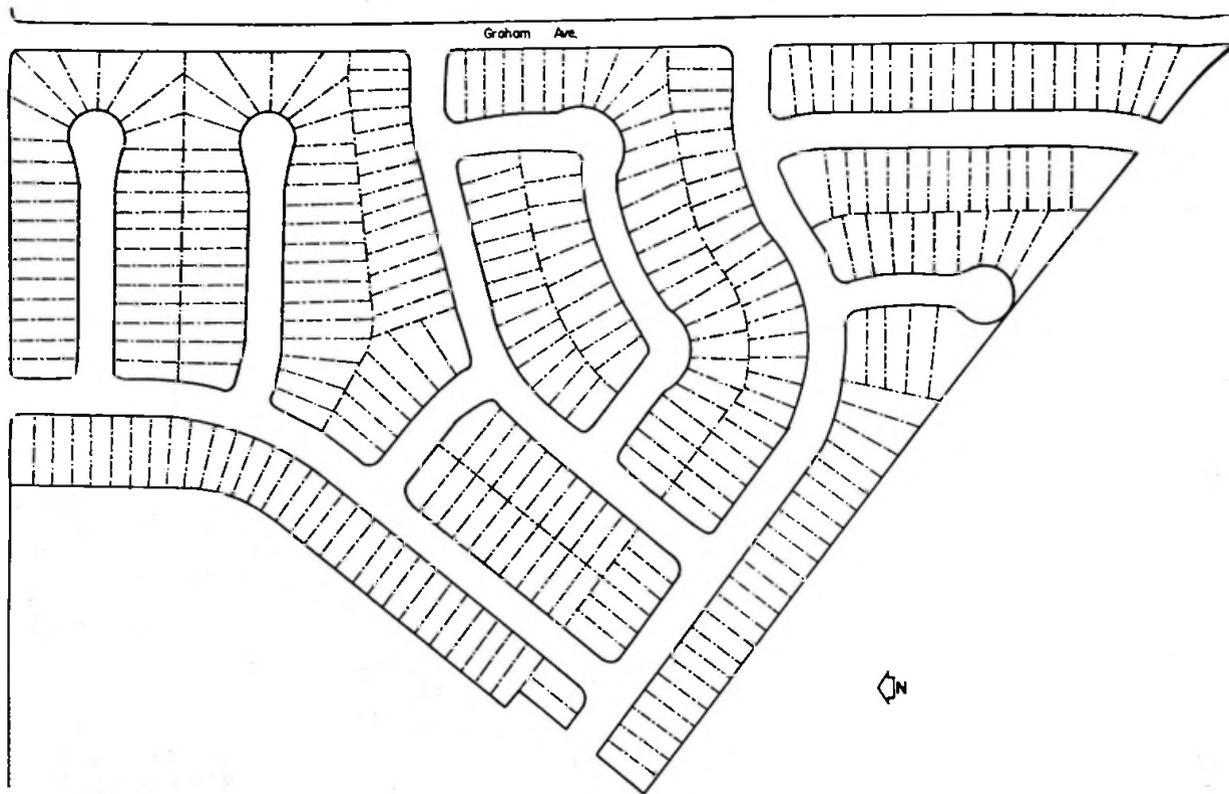
1. A need for affordable housing of all types had been established in the Riverside County Housing Element and addressed through the establishment of the R-6 Zone. The project would provide affordable housing to family units in Riverside County, thereby addressing the documented housing need.
2. The development was consistent with the intent and the provisions of the R-6 Zone.

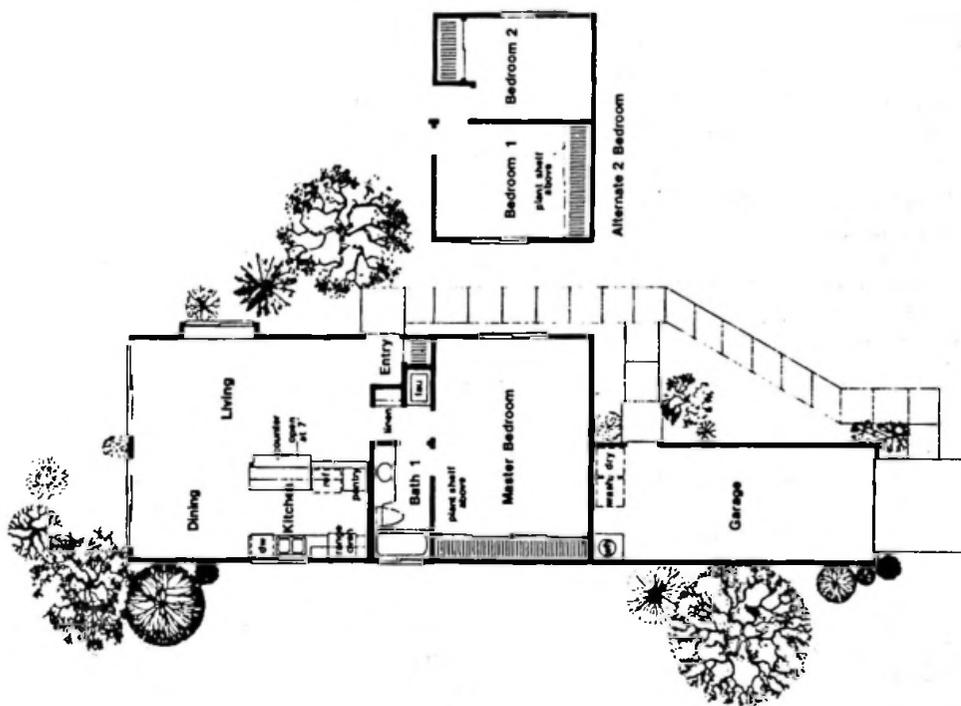
3. The infrastructure required to service this project was available and had the required capacity to serve it adequately.

Tradeoffs Made for Project Approval. The County Board of Supervisors conditionally approved the project. Several conditions had to be met. The traffic circulation problem was alleviated by complying with the County Road Department's request that lot frontages on one long street be increased, thereby reducing the number of driveways entering that street and the potential for traffic congestion. To mitigate the potential impacts of increased school enrollments, the developer agreed to pay the Moreno Valley School District an average fee of \$1,180 per unit—a total of \$313,800.

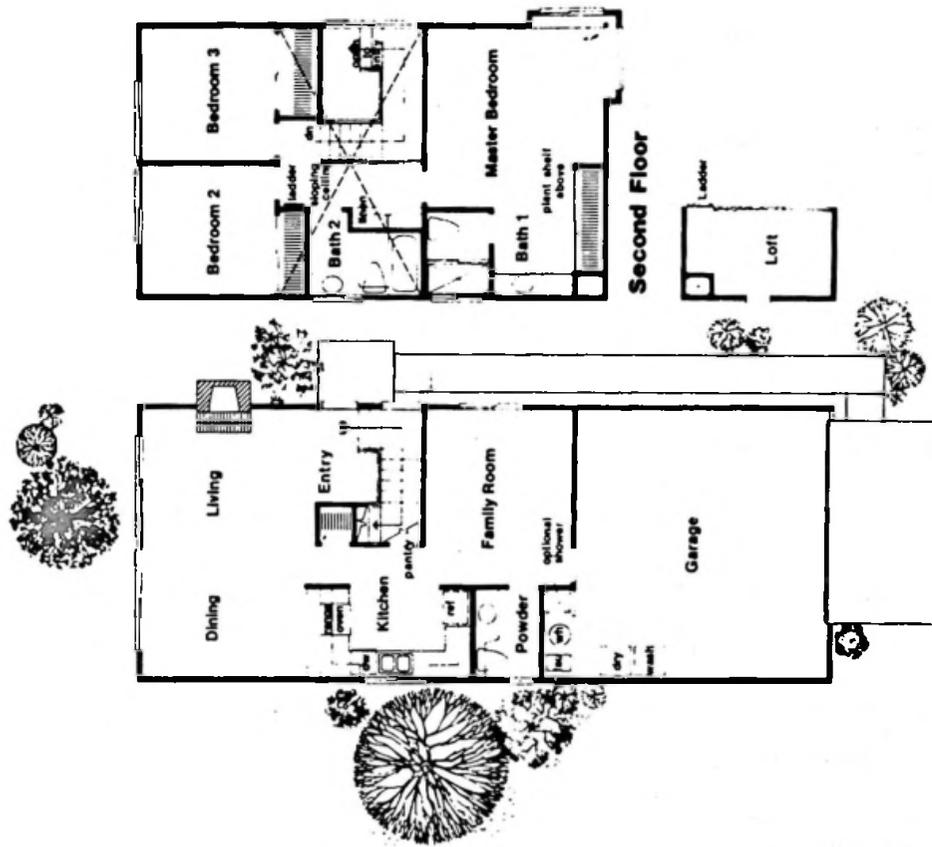
Other tradeoffs that had to be made for project approval included increased fire protection because of the higher density. The County Fire Department

Figure 10. Woodhaven Development, Riverside County, California.





- 1 or 2 Bedroom
- 1 Bath
- 800 Square Feet



- 3 Bedrooms
- 2 Baths
- 1,457 Square Feet

Project Profile

WOODHAVEN COTTAGES RIVERSIDE COUNTY, CALIFORNIA

Site Area:	41 acres
Total Dwelling Units:	266
Gross Density:	6.5 units/acre (approximate)
Housing Types:	Single-family detached
Average Price:	\$64,009

Unit Size (Sq. Ft.)	Number of Units	Bedrooms	Bathrooms	Initial Price Offered
800	39	1 or 2	1	\$49,950
800-2*	30	1 or 2	1	52,950
1,015	56	2 or 3	2	62,950
1,233	73	3	2	67,750
1,457	71	3	2	73,550

Developer: Woodhaven Homes
Riverside, California

* 800 square feet plus two-car garage; all larger units also have a two-car garage.

required that single-family detached dwellings with 7,200-square-foot lot minimums include water mains capable of providing 1,000 gallons per minute (gpm) at 20 pounds/square inch (psi) residual pressure at each hydrant, and hydrants had to be spaced no more than 500 feet apart. But because of the 3,600-square-foot lot size of Woodhaven Cottages, the fire department required that hydrants be capable of providing flows of 1,500 gpm at 20 psi residual pressure, and that hydrants be spaced no more than 300 feet apart. Fire retardant roofing materials meeting the standards of the Uniform Building Code (Sec. 3203(e)) were also required.

A six-foot high decorative block wall or a combination of landscaped earthen berm and decorative block wall was also required along the perimeter of the project for safety and privacy. In addition, five-foot high solid wood fences were required along all interior boundaries of each lot to create private backyard enclosures.

Market Demand and Buyer Profiles. The small-lot houses of Woodhaven Cottages met with intense market demand. People stood in line in the hot sun for up to six hours to see the model homes. More than 5,000 people went through the model complex the first weekend it was opened. The builder had to hire a private security force for crowd control. In the first 10 hours the sales office was open, 160 homes were sold. The entire 266 units were sold in 10 days.

Complete data on homebuyers was not available, but according to the builder, the majority were first-time homebuyers from neighboring Orange and Los Angeles Counties—young couples in their late 20s and early 30s with family incomes in the \$25,000 to \$35,000 range.

Cobblestone Village

Cobblestone Village was built by Covington Technologies of Fullerton, California. The project

consisted of a total of 393 lots of single-family detached housing on an 80-acre parcel, which included a 10-acre park site dedicated to the county in return for a credit equal to the value of the park site. This credit offset the public facilities fee developers normally had to pay in Riverside County. Cobblestone Village was approved by the county almost a year later than Woodhaven Cottages. It represented a second generation of R-6 projects, and was a better-designed project in the eyes of the county planning staff. Like a number of more recent R-6 projects, the single greatest difference from the earlier projects was greater open space on lots—an improvement according to staff. Lots in Cobblestone Village had 40-foot frontages and were 125-feet deep—5,000 square feet, rather than 3,600 square feet as in Woodhaven Cottages. (See Figure 12.)

Cobblestone Village offered five floor plans and five different elevations each for four of the floor plans, giving the project more variety in house styles than Woodhaven Cottages. Initial prices ranged from \$51,990 to \$72,990, with an average price ceiling of \$62,527 set under Option A. House sizes ranged from 821 to 1,583 square feet. (See Figure 13.) The project was sited on flat terrain in Sunnymead, originally zoned R-1, bordered by R-1 subdivisions (7,200-square-foot lots) to the north and east, vacant land to the south, and an older subdivision with 5,000-square-foot lots to the west.

Design features offered by the developer included a high percentage of east-west streets permitting a north-south solar orientation for most of the houses. Front yards were landscaped by the developer and irrigation systems were included. Wooden fences with gates were installed for backyards. At the urging of the county's planning staff, houses were designed so that their front doors faced the streets rather than opening to the side yards as in Woodhaven Cottages. Staff believed that the street orientation of front doors, possible on a 5,000-square-foot lot, was an improved safety feature as well as more aesthetical.

Figure 12. Cobblestone Development (Phase I), Riverside County, California.

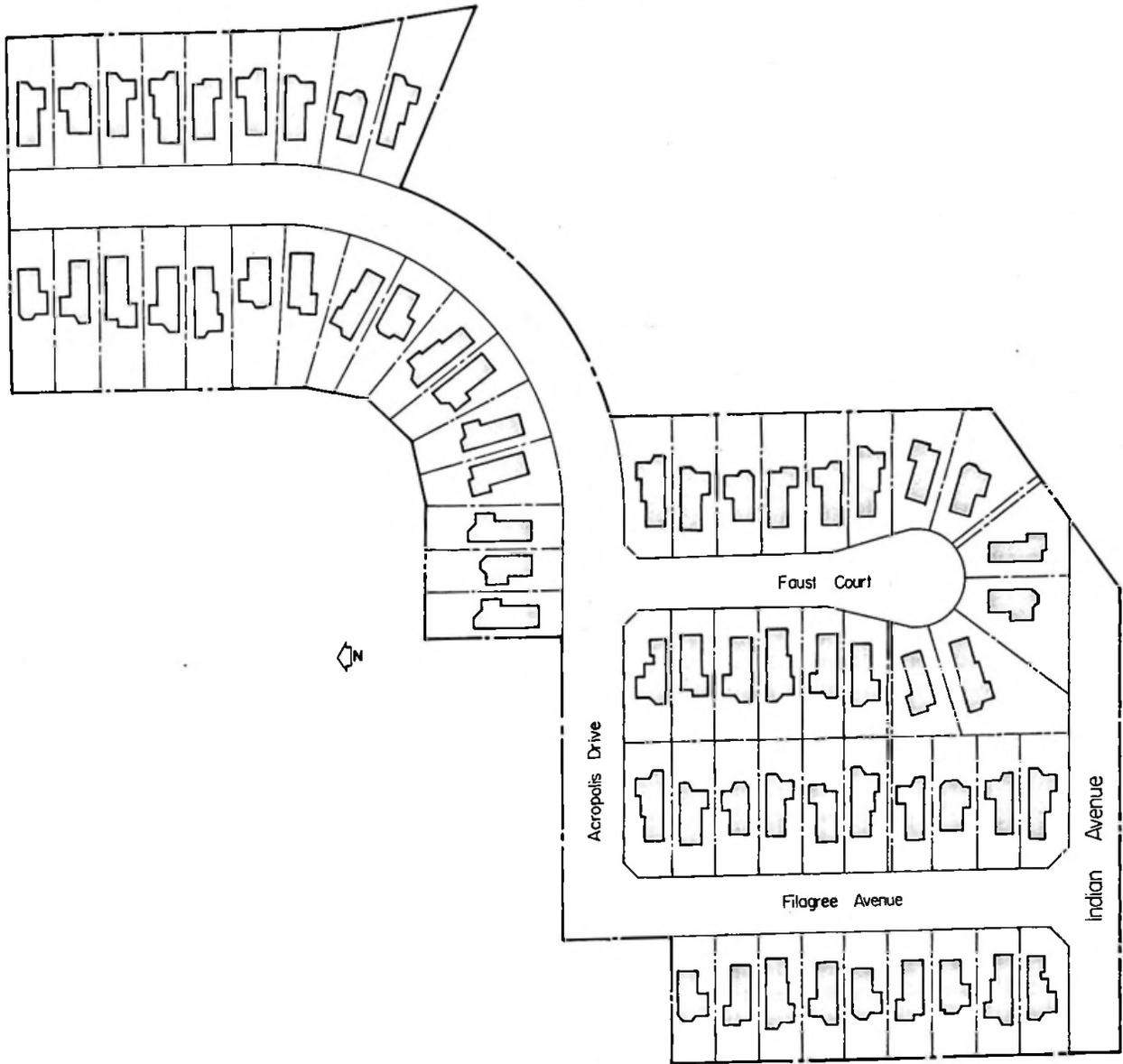
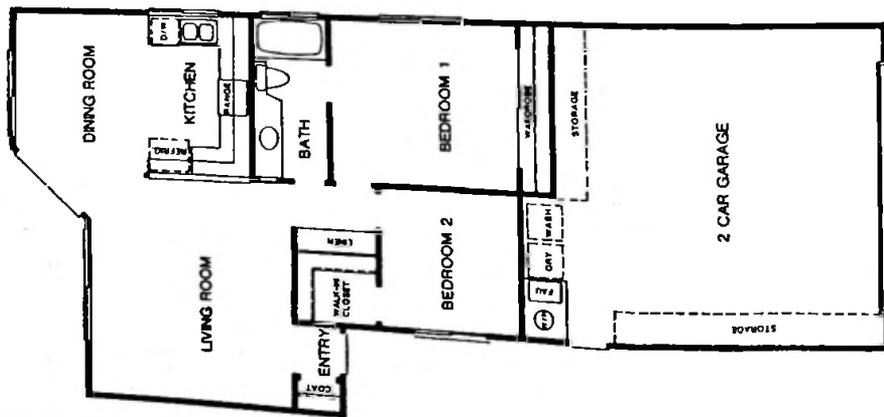
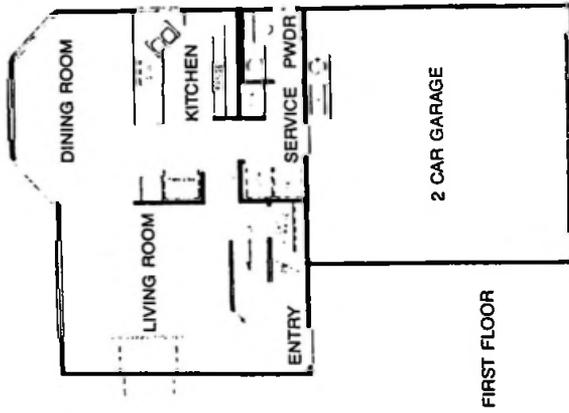
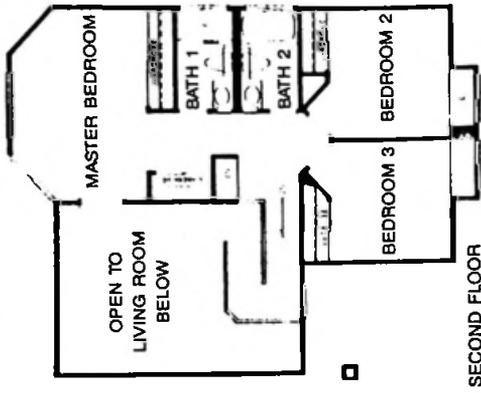


Figure 13. Floor Plans, Cobblestone Development, Riverside County, California.



- 2 Bedrooms
- 1 bath
- 821 Square Feet



- 3 Bedrooms
- 2 Baths
- 1,382 Square Feet

Project Profile

COBBLESTONE VILLAGE RIVERSIDE COUNTY, CALIFORNIA

Site Area:	80 acres including 10-acre park
Total Dwelling Units:	393
Gross Density:	4.9 units/acre (approximate)
Housing Types:	Single-family detached
Average Price:	\$62,527

Unit Size (Sq. Ft.)	Number of Units	Bedrooms	Bathrooms	Initial Price Offering
821*	12	2	1	\$51,900
821	106	2	1	53,990
1,058	99	3	2	61,600
1,382	99	3	2	67,600
1,583	77	3	2	72,990

Developer: Covington Technologies
Fullerton, California

* One-car garage; all other units have a two-car garage.

pleasing. A six- to eight-foot block wall was provided around the entire perimeter of the project.

Opposition to the Project. While Cobblestone Village was significantly lower in density (and some said a better-designed project overall) than Woodhaven Cottages, its density, nevertheless, generated the same type of neighborhood resistance. Adjacent residents, 67 of whom signed a petition opposing the zoning change to R-6, complained about the potential negative impacts on schools, parks, and traffic circulation on adjacent streets, as well as the possibility of increases in crime and decreases in property values. One neighboring resident, testifying in opposition to the project, said that "development at this high density could result in psychological problems which could cause an increase in criminal activities." (Excerpt from December 15, 1982, Planning Commission minutes.) The adjacent property, which would allegedly be adversely affected by Cobblestone Village's density of 4.9 units per acre, was itself 3.8 units per acre. Some residents complained that the project would destroy the rural atmosphere that prompted them to move to Riverside County and Sunnymead. One county planning staff member said that when people bought homes in a subdivision bordered by vacant land, they assumed it would stay vacant forever. Few of them realized that all the surrounding vacant land was either platted or soon would be platted for similar subdivisions as far as the eye could see.

The Planning Commission, by now more comfortable with small-lot R-6 projects in general and with the better design features of this one in particular, recommended approval of the zone change with little hesitation. Although not a condition of approval, the 10-acre park site, improved by the developer and dedicated to the county in exchange for a facilities fee, certainly helped to enhance the community's view of the project.

Tradeoffs Made for Project Approval. Few tradeoffs were involved in getting Cobblestone Village approved because it was well designed initially. Its design corrected some of the flaws found in earlier R-6 projects. The school impact fee paid by the developer was \$315,000, although some citizens continued to believe that the school district could not build new facilities fast enough to take care of growth in enrollment. The fire department required the same standards it required of Woodhaven Cottages, except that the spacing between hydrants was relaxed from 300 feet to 330 feet due to Cobblestone's lower density.

Market Demand and Buyer Profile. Like Woodhaven Cottages, completed a year earlier, Cobblestone Village sold out very rapidly. Three hundred units were sold in nine weeks from a trailer that the developer used as a sales office at the project site until the models were completed. These small-lot homes attracted the same types of consumers as Woodhaven Cottages—young families in their 20's and early 30's with median incomes of approximately \$28,000, the large majority of them first-time homebuyers from Orange County.

Results of Riverside County's R-6 Zone

Housing Affordability. In less than two years, 5,202 housing units (70 percent of which were single-family detached houses) were approved for construction under Riverside County's R-6 zone. The average prices of these units were 20 percent below the median new-home prices in the county. Since only seven out of 24 approved projects had begun construction at the time of APA's field trip in September 1983, the full impact of the ordinance could not be judged. Clearly, the increased density coupled with the price-control system provided

some housing opportunities at well below market prices common to the area. Several developers said they were selling essentially the same products in neighboring counties for prices from 10 to 15 percent higher. Asked what they would have built under the small-lot ordinance without price controls, developers said they would have added amenities, and possibly a little more space, charging an additional 10 percent or more in price.

The problem for developers, even though they acceded to the price-control system, was their inability to recover cost increases after having committed themselves to a pricing formula. As the economy began to recover and materials and labor costs began to change, developers viewed Option B (price controls for 25 percent of the units) as a more workable formula than Option A (average price system). Some members of the Planning Commission saw this shift as eroding the intent of the ordinance and wanted price controls established for all of the housing units in a project.

As a public policy intended to increase affordable housing opportunities for residents of Riverside County, the R-6 option appears to have succeeded. A question might be raised about the fact that the large majority of buyers taking advantage of the option were families moving in from neighboring counties who had substantially higher median incomes than families living in the county. Including a residency requirement in Riverside County in the ordinance was considered briefly, but this was not politically acceptable.

A more difficult question may be raised about whether the affordability of small-lot housing in Riverside County had more to do with land prices than it did with the unit prices set by the ordinance. Several of the developers interviewed for this study had purchased the land for their projects as much as five and six years earlier at much lower than current prices. These advantageous land costs allowed developers to offer housing priced within the constraints of the R-6 ordinance. One developer, willing to reveal cost figures, showed that his land costs per unit were only 17 percent more than the public exactions and fees he paid per unit (i.e., plan check and inspection fees, sewer fees, water fees, drainage fees, park and recreational fees, school fees, and public service fees). Whether housing can be built on raw land purchased at today's rates and sold for the prices established within the R-6 formula remains to be seen.

The price-control system used by Riverside County clearly encouraged the production of lower-cost housing. But it is difficult to enforce and is not without some added administrative costs. If economic recovery continues and developers continue to prefer Option B to Option A, the overall effectiveness of the ordinance in producing affordable housing in the future is likely to diminish, although the prices of small houses on small lots will usually always be less than those for large properties.

Development Standards and Project Design.
The major effect of the R-6 zone was to significantly increase permitted densities by reducing minimum

lot sizes from 7,200 square feet to 3,600 square feet and minimum frontage from 60 feet to 30 feet. As a result, the ordinance opened the door for significant savings in both raw land costs and in infrastructure costs per unit.

The county was cautious about the quality of development that might occur at these higher densities, and tied zone changes to specific project approvals with thorough site plan reviews. The staff believed that a number of the design features they encouraged in the site plan review process helped ensure a better product in the end. Besides the normal design concerns in subdivision plat approval, the staff paid particular attention to the houses themselves. Visual monotony of the streetscape was relieved by emphasizing design diversity through such techniques as staggered building setbacks and varied roof-lines, integrating one-story and two-story structures, and mixing various building elevations. Developers sometimes thought that the design requirements were arbitrary. For example, they considered one design change that the planning staff believed to be an improvement, the front door facing the street, purely a matter of taste and an insignificant change at that. Developers also complained that a number of design requirements were actually matters of consumer preference and the marketplace might better decide if they were really necessary.

In spite of improved designs that resulted from staff and developers working together in the site plan review process, some aspects of design could not be resolved in projects using the 3,600-square-foot lot size. For example, lot widths as narrow as 30 feet forced houses to present only their garages to the street. Alleys were considered too costly and less safe than fenced backyards without alleys. With 30-foot frontages, curb cuts for driveways were very frequent, reducing on-street parking spaces. Garages were required to be set back 20 feet from the street, leaving room for the car to clear the garage and afford the driver an unobstructed line of sight before entering the street. This garage setback created a parking pad in addition to the garage. The extra parking space proved to be essential since many of the garages of these small homes were full of personal possessions and could not be used to store vehicles in any case. Recreational vehicles and boats scattered here and there further contributed to parking problems.

With lot sizes of 5,000 square feet, greater separation between buildings was possible. Potential problems from runoff and drainage from roof overhangs were avoided. There was a slightly more open feel to the project overall, and there was space to design floor plans with front doors and some windows facing the street, rather than just garage doors. One of the major advantages of the 5,000-square-foot lot, from the point of view of the planning staff, was the increased usable yard space per lot. On 3,600-square-foot lots, usable yard space was limited and, in some cases, merely a token.

The only open space developed in conjunction with these small-lot subdivisions was the result of planning staff negotiations with developers. Planners

recognized that providing usable open space would be difficult in a place like Riverside County where the local authority had little extra money to acquire more public park space. Planners also understood that, even though most buyers saw the smaller houses as first homes that they would leave in several years, allowing for yard space was important to accommodate families with children.

Fragmentation of Authority. One feature of the new ordinance intended to cut costs was that development proposals for R-6 zoning changes would receive priority processing by the county. This policy met with mixed results. Developers commonly acknowledged that the county did a good job of speeding up the project review and approval processing, but only a portion of the process was controlled by the county. Developers also had to get approvals from the privately owned water district, the school board, and private utilities operating in the county. Most of the developers' complaints were aimed at the water district, which was alleged to be extremely slow in granting approvals. Thus, while the county could offer the added incentive of priority processing for R-6 zone change applications, it had little if any influence over other agencies in the approval process.

Fragmentation of authority was a problem in setting development standards as well. The Eastern Municipal Water District, which sets standards for water systems in all residential development, was routinely accused by developers of insisting on "goldplated standards" and being unwilling to consider changing them. County fire officials, for example, agreed that their minimum flows for fire safety could be supplied by six-inch pipes in spite of the fact that the water district insisted on eight-inch pipe sizes. Developers complained that the local municipal public works lobby and groups like the Clay Pipe Institute helped maintain existing standards by keeping public works officials from accepting technological innovations that had proven acceptable in many other communities.

Neighborhood Resistance. Citizen resistance to small-lot development was common wherever proposed projects abutted existing residential development with lower densities or even with the same densities. A variety of claims were made about the negative effects of the proposed new projects on surrounding neighbors, but the principal concerns seemed to be people's fears that small homes on small lots would lower adjacent property values and bring in "undesirable" people. The affordable housing price-control formula, while not widely publicized, also helped to reinforce the impression that some sort of subsidized housing was going in next door.

These claims, however, were largely discounted by the County Board. Local officials believed that given current interest rates, most homeowners in R-6 projects would more than likely have higher incomes to qualify for their mortgages at today's prices than their neighbors who were worried about "instant

slums." This is a point that recalcitrant neighbors might be reminded of by a local government eager to encourage affordable housing.

Postscript

In January of 1984, subsequent to APA's visit to Riverside County, the County Board imposed a moratorium on further development of R-6 projects. This moratorium was imposed primarily in response to both citizen and school district concern about the concentration of small-lot developments in one area of the county. For example, less than two years after enactment of the R-6 provisions, over 60 percent of the more than 5,000 units approved were planned for the Edgemont/Sunnymead area in the northwestern section of the county. The purpose of the moratorium was to allow local officials to thoroughly examine the impacts of this higher-density development. The moratorium was welcomed by local planning staff who were not entirely satisfied with a number of developments that had been built under the R-6 provisions. Staff believed that some projects did not provide a sufficient amount of usable private open space on individual lots and in some cases did not offer sufficient variety of dwelling unit designs and sites.

This reexamination of the R-6 provisions and an analysis of the projects built under them led to the development of an alternative set of regulations for small-lot development in Riverside County. (A full text of the provisions appears in Appendix A.) These new provisions for "Restricted Single-family Residential Subdivisions" were meant to encourage better design by requiring that a specific amount of usable open space be provided on each lot and that each project consist of a variety of unit sizes, floor plans, and elevations. For example, a minimum of one floor plan must be provided for each 60 units and in no case can there be less than three different floor plans per development. In addition, a minimum of one elevation per 15 dwelling units and no less than six different elevations per project must be provided.

Adopted by the County Board in mid-1984, the new ordinance established more stringent requirements for lot coverage, setbacks, and lot frontage than did the R-6 provisions. Unlike the R-6 provisions, no minimum lot size or minimum or maximum density limit has been established. The new ordinance also required that the planning department prepare a "Design Guidelines Manual" to help developers understand the intent of the new design provisions and to aid staff in the review of development proposals.

At the time the R-6 moratorium was imposed, over 6,000 units had been built or approved for construction under these provisions, and the flow of new proposals for R-6 development had begun to slow down considerably. Therefore, staff believed that any further development under R-6 provisions was unlikely with the new provisions in place, even though the R-6 provisions were not formally repealed.

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Dade County's Zero Lot Line Developments

The Metropolitan Dade County Planning Department has jurisdiction over all unincorporated land in this 2,000-square-mile, southern Florida county. According to 1980 census figures, unincorporated Dade County had a population of nearly 800,000. In the late 1970s, nearly all of the new housing built consisted of townhouses and condominiums in the \$50,000 to \$80,000 price range and luxury homes. In an attempt to increase the supply of affordable single-family detached housing, the county enacted provisions for zero lot line (ZLL) development in 1981. Since these provisions were adopted, the construction of single-family detached housing has increased substantially, and a number of affordable projects have been built. Unlike other communities with ZLL provisions, Dade County permitted ZLL development as a special exception in several existing residential districts, including its most restrictive single-family districts other than estate districts. Most other communities either established a special district for ZLL development or only allowed it under planned unit development (PUD) provisions. Dade County's provisions allowed for higher density than was permitted under conventional regulations in each district by means of substantial reductions in requirements for lot size, frontage, and setbacks, and increases in permitted building coverage. The new provisions also included building and site design standards intended to enhance the livability of these small-lot developments. This section examines Dade County's standards for ZLL development and considers three of the affordable projects that were built under these standards.

Housing Problems in Dade County

Dade County's interest in developing provisions for small-lot single-family housing began in the mid-1970s. At that time local officials gave serious thought to providing an alternative to large-lot detached housing in the county's more restrictive single-family districts. Although the county had districts where townhouses and higher-density

attached housing were permitted, it also wanted to allow higher-density detached housing in existing single-family districts.

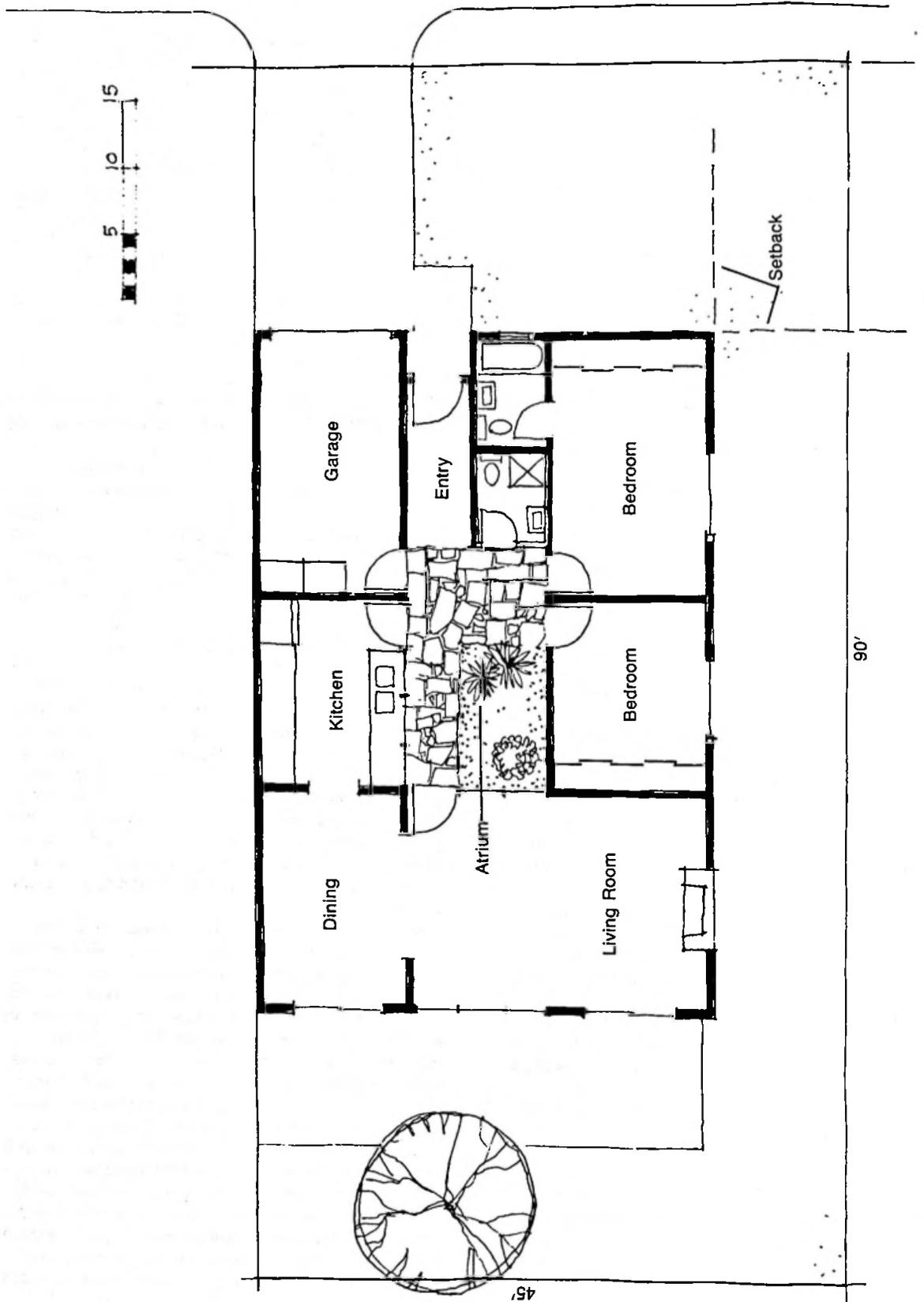
Local officials considered atrium housing as a possible form of high-density detached housing. The atrium unit with its interior open space (see Figure 14) can provide usable and private open space on a small lot. When properly designed, the atrium's interior open space can give small units a spacious feel. The atrium also allows better air circulation and more access to daylight than conventionally designed downsized units that are sited close together on small lots.

Although preliminary design guidelines and development standards were established for atrium housing, further work on these provisions was not done. After considerable debate, staff concluded that, in spite of the many advantages the atrium concept offered for small-lot development, it was too radical a departure from current development practice and there might not be sufficient market demand for it. Local officials also believed that requiring interior open space could add substantially to development costs.

In the late 1970s, however, increasing pressure from developers for a reduction in lot size and more flexibility in siting detached housing units rekindled an interest in alternatives to conventional residential development. In 1979, a developer proposed a zero lot line project with lots as small as 3,500 square feet. Approval of this project, called the "California Club," required over 1,200 variances from existing development requirements for single-family detached subdivisions. (See Figure 15.) After its approval a number of other developers followed with proposals calling for small-lot development with minimal setbacks. Many argued that rising land costs and other costs associated with residential development necessitated the use of downsized units on smaller lots in the county. These arguments convinced county officials to create provisions allowing such development.

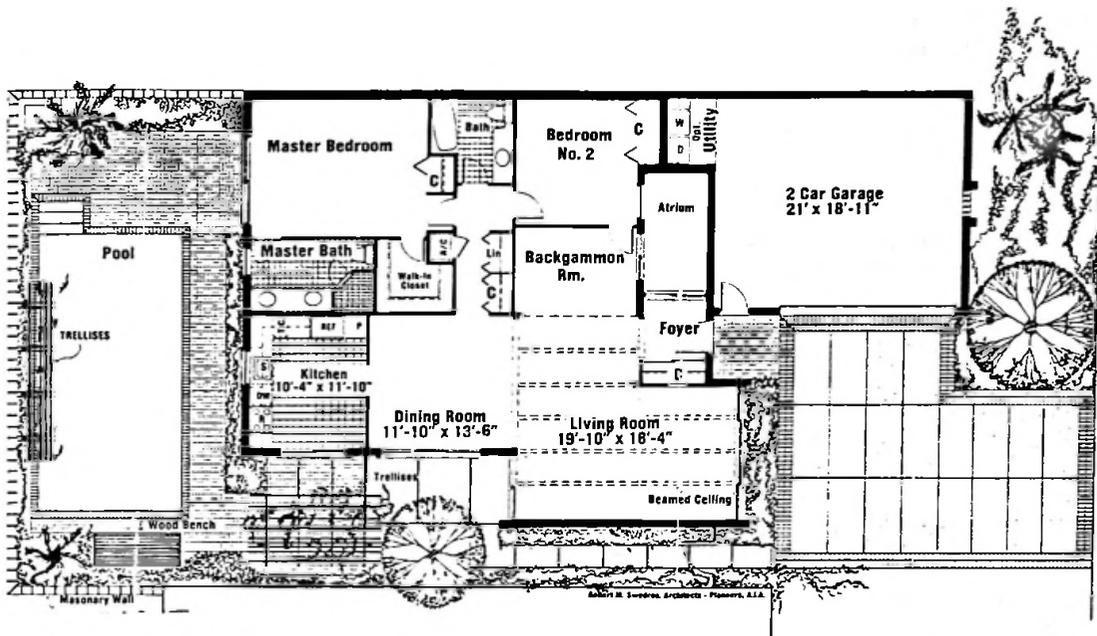
Having ruled out the atrium as an alternative to large-lot development, staff decided to encourage

Figure 14. Atrium Unit.



The atrium can be either enclosed with a skylight in cool climates or left

Figure 15. Floor Plan, California Club Development, Dade County, Florida.



ZLL development because it had enjoyed a good level of market acceptance in Dade County in the past where it had been permitted through variances. They believed that if this development concept was permitted under the county's special exception procedures—which require public hearing, site plan review, and conditional approval—it could provide design flexibility without compromising the advantages of conventional single-family detached housing. (A full text of the provisions appears in Appendix A.)

Standards for Zero Lot Line Development

Setting standards for ZLL development involved Dade County's staff in a thorough review of the literature on this and other types of small-lot development; field inspection and detailed analysis of ZLL projects that had been built in the county under variances; and an examination of ZLL provisions from other communities. The most useful information was gained from field inspections. Information received from other communities provided some guidance, but was not as useful; most other communities did not allow ZLL development outside of PUD and had established only very basic development parameters and few, if any, specific standards or design criteria for such development. In order to allow ZLL development as a special exception, particularly in restrictive single-family districts, local officials believed that it was necessary to establish more specific requirements than those that are usually contained in PUD ordinances.

Density. Before other standards for ZLL development could be established, it was necessary

to decide how to regulate density without severely limiting flexibility. Should specific standards for both minimum lot size and maximum number of units per acre be established in the provisions? If so, what constituted appropriate or safe density limits? Field inspection of existing ZLL projects had revealed that very small lots, averaging 3,500 square feet, had worked well in the high-priced California Club development built in the late 1970s. The staff was not sure, however, that other ZLL projects, especially more affordable ones, would be as well designed and offer as many amenities. The assumption that developers of less expensive projects would not pay as much attention to building and site design details was supported by the staff's examination of past development. For the most part, lower-priced developments were not as well designed as higher-priced ones.

Staff eventually decided not to place a cap on the number of units per acre permitted in the provisions for ZLL. Instead, the maximum number of units per acre would be controlled by minimum lot size requirements and by the density limits established in the county's Comprehensive Development Master Plan. Under the master plan, 5.6 units per acre could be developed in the county's more restrictive single-family residential districts. In practice, however, conventional developments could rarely achieve more than 4 units per acre because the minimum lot size allowed is 7,500 square feet. ZLL developments, which may have an average lot area of 4,500 square feet, were much more likely to achieve the maximum number of units permitted by the master plan. In less restrictive districts, ZLL projects could be developed at higher densities as long as established minimum lot size requirements were met. Staff hoped that allowing ZLL projects to be built at the maximum

density permitted in a district would encourage developers to use this new form of development. Handling density in this manner also allowed for periodic adjustments in permitted densities in response to changes in the overall development climate. For example, the master plan was amended in 1983 to permit up to 6 units per acre in the more restrictive residential districts. Accordingly, ZLL projects in those districts can now be developed at this increased density.

Lot Area and Coverage. The average minimum lot size permitted in ZLL projects developed in the RU-1 residential district, where conventional development must have a minimum lot size of 7,500 square feet, was 4,500 square feet. The average minimum was 4,000 square feet when development occurred in the RU-2 Two-Family Residential District, RU-TH Townhouse District, RU-3 Four-Unit Apartment House District, or the RU-3M Minimum Apartment House District. (See Table 16 for a comparison of minimum requirements for conventional development and zero lot line development.) It was significant that minimum standards for lot size were averages. In each of the districts, a ZLL lot could be as small as 3,000 square feet provided the average minimum lot size was either 4,500 square feet or 4,000 square feet—whichever was applicable. Handling minimum lot size in this manner permitted both flexibility and maximum use of the site because lots that could not

Table 16. Comparison of ZLL and Conventional Standards for Single-Family Detached Housing, Dade County, Florida.

	Zero Lot Line	Conventional
Minimum Lot Size	4,500 sq. ft.* (RU-1 — Single-family district)	7,500 sq. ft. (all Districts)
	4,000 sq. ft.* (Two-family, townhouse, and multi-family districts)	
Minimum Setbacks		
Front	5 ft.	25 ft.
Rear	No minimum	25 ft.
Side	One side yard must be 0, the other at least 10 ft.	7.5 ft. (interior side yard)
Minimum Frontage	No minimum—"Each lot shall have a clear, direct frontage on public streets or to accessways complying with private street requirement."	75 ft.
Maximum Coverage	50%	35%

* Minimum average lot size, some lots may be as small as 3,000 square feet.

otherwise be developed at the established average minimum, due to site conditions or other constraints, could now vary in size down to 3,000 square feet.

Staff concern about assuring good design of small-lot ZLL projects made them set the average minimum lot size at a level somewhat greater than the minimum that they felt could work in a well-designed small-lot development. With an increase to 50 percent maximum lot coverage in ZLL projects (as opposed to 35 percent in conventional development), staff believed that the 4,000-square-foot and 4,500-square-foot lots that were required adequately accommodated dwelling units and provided a sufficient amount of usable outdoor area on each lot. Increased maximum lot coverage also allowed developers to design dwelling units that were not drastically downsized and, in some cases, to build ZLL units that were comparable in size to conventionally sized units, especially on the 4,500-square-foot lot. Using the larger unit on the smaller lots, however, required units to be specifically designed for the ZLL lot and to be properly sited.

Just as there was concern about setting minimum lot sizes too low because of design constraints, there was equal concern about setting minimum lot sizes too high and thereby discouraging developers from using the ZLL option. Staff believed that the minimum lot size requirements that they had settled on were low enough to provide an incentive to developers without resulting in undesirable development. They found that the lot sizes permitted under ZLL, which were 40 to 47 percent smaller than those required by conventional standards, resulted in substantial savings in development costs. (See below.)

Frontage. To allow for an adequate degree of flexibility in building siting and lot layout, no minimum quantitative requirement was established in the provisions for lot frontage. Staff believed that it was not possible to set a specific standard that would accommodate every site, because site characteristics could vary substantially. A specification for frontage that might have worked well in one development might have severely limited what could be done in another and might not have allowed for the most efficient use of the site. When the frontage requirement was set in advance of development, flexibility was limited. Therefore, the provisions stated only that, "each lot shall have a clear, direct frontage on public streets or to accessways complying with private street requirements." The appropriate frontage standard was determined by the site planner on a case-by-case basis through site plan review. This performance-oriented approach let the review staff examine proposed frontage in relation to the design and placement of the buildings on the lots. If staff had a problem with a proposed frontage, the developer had the opportunity to justify his or her design.

There were, however, some exceptions. To help ensure that zero lot line development was compatible with existing or proposed conventional

single-family development, it was the policy of the county to require ZLL development occurring in an RU-1 zoning district to have a minimum frontage of 45 feet and perimeter lots to have a frontage of 50 feet. This policy was enacted in response to early opposition to ZLL development from homeowners in nearby neighborhoods who feared that these new small-lot developments would adversely affect the character of their neighborhoods. These minimums, however, were well below the 75-foot minimum frontage requirement for conventional single-family detached development.

Allowing less frontage resulted in substantial savings in development costs. The relationship between frontage requirements and costs has been well documented. The cost of providing streets, sidewalks, and utilities is proportionate to the amount of required frontage. According to developers, a considerable portion of the savings in development costs that they realized by using the ZLL option in Dade County was attributable to reduced frontage.

Setbacks. Past experience and consultation with engineers from the county's public works department convinced staff that at least five feet of dwelling unit setback from the right-of-way was needed. This minimum setback allowed for an adequate view of pedestrians and vehicular traffic when backing a car from the lot into the right-of-way. Staff understood, however, that this minimum requirement, like any other specification standard, might not prove to be adequate for all situations. Cases where increased front setback was called for could be identified under site plan review and appropriate modifications could be made a condition of approval.

Like lot frontage requirements, front setback was important to development costs. The amount of front setback determines the length of utility hook-ups from the utility easement in the right-of-way to the dwelling unit. The five-foot requirement meant a substantial reduction in materials used for making utility connections compared to the 25-foot minimum that was required in conventional single-family detached development.

The county went a step further in its handling of rear-yard setback and did not establish a minimum standard. Once again, for the sake of flexibility, this decision was left up to the developer. The appropriateness of what the developer proposed was, in turn, determined under site plan review.

Allowing only one side yard on each lot is, of course, what the ZLL concept is all about. This side-yard setback was set at a minimum of 10 feet to allow for a usable area. This minimum was also chosen because it was found to be the most commonly used standard in ZLL development in other communities. In conventional development in Dade County, 7.5-foot minimum side-yard setbacks were required, which created at least 15 feet of separation between buildings. It was the staff's belief that building separations could be reduced to 10 feet in ZLL projects because each building would face a blank wall on one side. The blank wall provided for

as much and, in some cases, more privacy than was allowed under the minimum requirements for conventional single-family development.

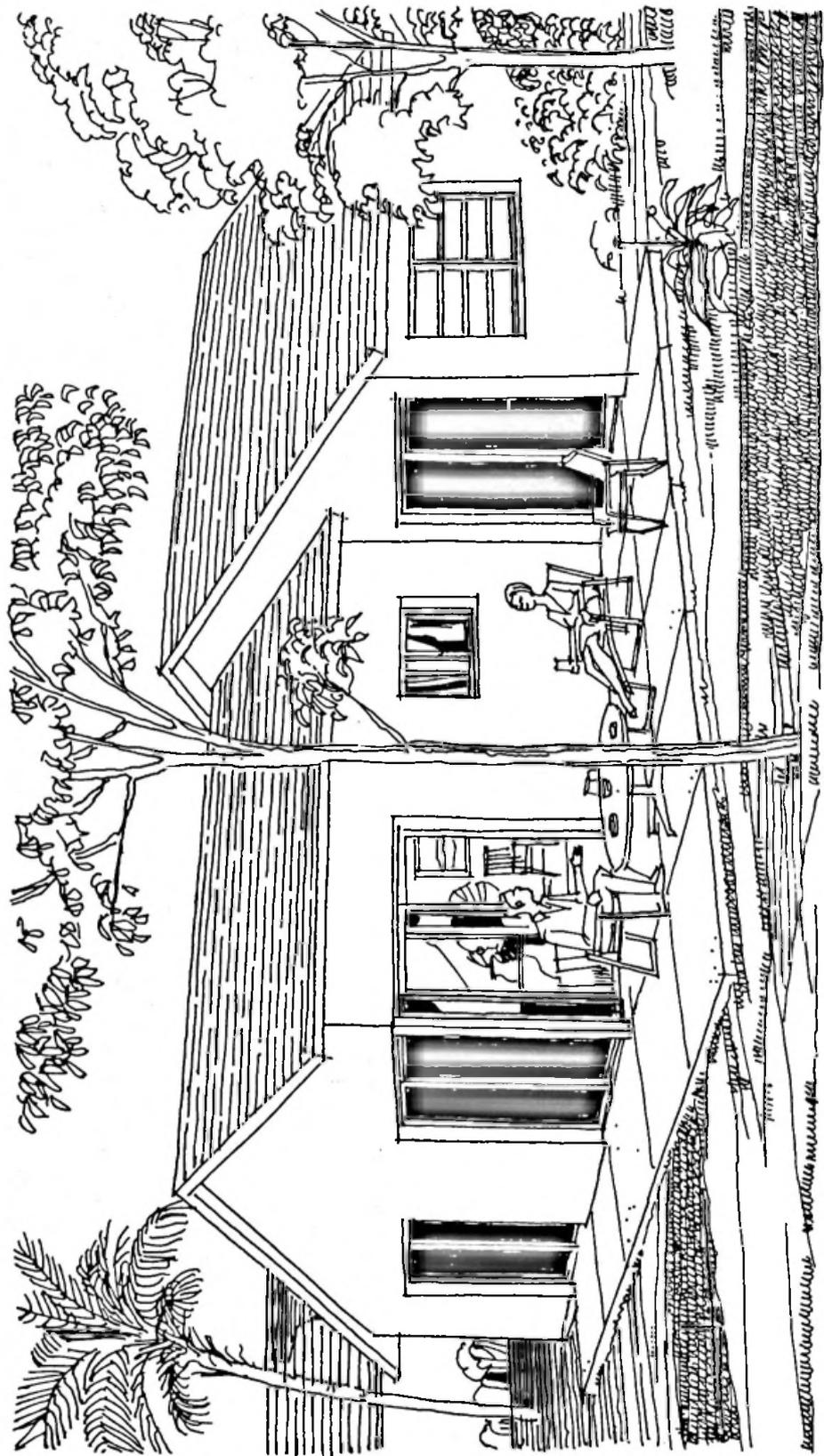
Special Provisions for Zero Lot Line Development

Several other standards were established for ZLL development in order to eliminate or minimize problems. These building and site design standards were design safeguards. Their primary purpose was to help ensure that ZLL development retained the most important advantages of conventional single-family detached development—privacy, usable outdoor space on each lot, and better use of limited indoor space—without compromising the health, safety, and welfare of occupants. These requirements were viewed by staff as necessary trade-offs in return for smaller lots, reduced frontage and setbacks, and increased building coverage, as well as the overall level of flexibility allowed when the ZLL option was used. Included were provisions that encouraged better integration of indoor and outdoor areas; ensured adequate exterior maintenance of dwelling units, proper drainage, and off-street parking; and protected units from the spread of fire. Special landscaping and buffering requirements were also established to enhance the design of ZLL development and to make it compatible with more conventional single-family detached development when it was located near or adjacent to such development.

Visual and physical access to exterior/patio court areas. Fifteen percent of the lineal length of the total perimeter wall area of dwelling units had to contain penetrable openings. The primary purpose of this requirement was to help ensure that interior and exterior spaces were well integrated, allowing for maximum use of limited private outdoor area on the smaller ZLL lots and better use of limited indoor area, especially when small dwelling units (1,000 square feet or less) were used. In effect, 15 percent of the lineal length of perimeter wall area had to contain penetrable openings such as sliding glass doors that opened out into usable, private open space. (See Figure 16.) As will be explained in greater detail later, satisfying the requirement that the open space involved must be "usable" and "private" required a patio slab or comparable improvement to the outdoor area. In addition, this area had to be either positioned in such a manner so that it was private or a wall or fence had to be installed to make it so.

The "15 percent" requirement was established as a result of field inspection and detailed analysis of ZLL projects that had been built prior to enactment of the current provisions. Staff found that in most of these projects interior and exterior spaces were poorly integrated. They believed this was due to the fact that conventionally designed dwelling units were used on narrow, deep ZLL lots, rather than units specifically designed to be sited on the lot line. In the projects that did a better job of integrating interior and exterior spaces, limited indoor space

Figure 16. Bilbao Development, Dade County, Florida.



This view from the side, and concerned areas...

was designed to open out from sliding glass doors into outdoor areas. A staff report on the results of the field inspections explained:

A major observation made from comparing the different projects was that most were developed with units that were not appropriate for the ZLL concept. One exception, however, was the Hefler project that used standard 75- by 100-foot lots. Many of the units were designed with good indoor/outdoor relationships. However, the large lots do not require the degree of design sophistication required of smaller lots. Another was the California Club project [see Figure 15], the best example of the ZLL concept. The units and site are designed with the total integration of interior and exterior spaces, allowing for maximum use of outdoor space on a relatively small lot of 3,500 square feet. The plan actually creates "outdoor rooms."

The report went on to say:

Our review of the various projects indicates that standards will need to be developed that ensure the integration of outdoor/indoor spaces in all ZLL projects. It is suggested that a requirement be developed that specifically provides for visual and physical access to outdoor spaces from several rooms within the house and that the definition of outdoor spaces be made by the exterior shape of the unit.

Some staff members believed so strongly in the need for this requirement that they argued for a 25 percent requirement for open wall area, pointing out that the better-designed projects, like the California Club, contained at least this amount of open wall area. In the end the 15 percent requirement was agreed upon. The belief was that a higher minimum could discourage ZLL development because it would add substantially to both construction and site development costs.

Prohibition of openings in walls sited on the lot line. This provision allowed for more privacy within units that may be sited as close as 10 feet apart at the side lot line. It also created more private, usable side-yard areas. Because no windows or other openings were permitted in the wall that was sited on the lot line, some protection from the spread of fire was also provided.

Maintenance and drainage easements. Requiring a perpetual four-foot easement, adjacent to the wall sited on the lot line on each lot, permitted maintenance of this solid wall from the adjacent lot. However, the solid wall had to be maintained in its original color and treatment unless otherwise agreed to in writing by the two affected lot owners. Roof overhangs could also penetrate up to 24 inches of the easement area and water runoff from the dwelling unit was allowed within the easement area.

Off-street parking. To help ensure adequate parking in ZLL development, two off-street parking spaces, exclusive of garages, were required on each lot. This requirement recognized that there will usually be limited on-street parking in ZLL development because of reduced frontages—and especially where narrower, private streets were used. Garages were not required in ZLL projects, however, because they limit design flexibility and may be difficult to provide on the small lots.

Trees. Requiring three trees on each ZLL lot and one street shade tree along the roadway at a minimum spacing of forty feet was aimed at satisfying both aesthetic and technical considerations. This requirement for trees not only gave some visual order to ZLL developments, it helped conserve energy by shading and cooling the site and the roadway surface.

Buffers. Specific requirements for buffers were not established in the provisions, but were called for in the site plan review section of the provisions "to provide a logical transition to adjoining, existing, or permitted uses. . . ." It was the policy of the county, however, to set a minimum frontage requirement as a buffer when ZLL development occurred in more restrictive single-family detached districts. In these districts, a minimum frontage of 45 feet was required, and a greater frontage (50 feet) on perimeter lots was required to serve as a buffer between existing or proposed conventional single-family detached development and ZLL development. In some cases, conventional 75' x 100' lots were required as buffers between ZLL lots and existing conventional single-family development.

Alleys. Alleys were not required in ZLL development, but were permitted to allow for auto access to individual lots and access for trash collection and other services. They were not to be used, however, for storage or parking.

Improvement Requirements

With few exceptions, zero lot line development had to adhere to the same improvement standards—streets, sidewalks, drainage, sewer, and so on—that were required for conventional subdivisions. When ZLL developments were built to the minimum standards contained in the provisions, however, more stringent improvement requirements were imposed by the county. For example, when the lots in a ZLL development were built to the minimum front setback of five feet, it was the policy of the Public Works Department to require valley gutters, which were not required in larger-lot development. The Public Works Department found that when the minimum or near minimum front setback was used rather than a setback at or near the 25-foot requirement for conventional development, cars were often parked beyond the lot's parking apron or strip and into the drainage swale area. This can cause damage to the swale area and hamper proper drainage of the lot. The valley gutters, placed at the edge of the street pavement within the right-of-way and constructed of concrete, protect the swale and the pavement edge while allowing drainage from the lot to flow into the drainage inlet. When enough setback was used to allow for parking outside of the swale area, these gutters were not required.

Although the use of valley gutters increased initial development costs, public works officials pointed out that long-term maintenance costs are reduced because these gutters will last much longer than unprotected swale areas and street pavement. It is worth pointing out that the cost of this necessary

addition was believed to be more than balanced by savings in other areas.

Street standards also received special attention in the ZLL requirements. When public streets were used in ZLL development they had to adhere to the same requirements as streets in conventional development; the minimum right-of-way for a local access street was 50 feet and minimum pavement width was typically 22 feet. When private streets were used in ZLL development, both right-of-way and pavement width were reduced in relation to expected daily traffic. However, private streets were usually discouraged by staff. Staff found that maintenance of private streets by homeowners associations can be a problem. Because ZLL developments usually did not provide common amenities like open space or active recreational facilities, it had been difficult to organize effective homeowners associations for the sole purpose of maintaining streets. Staff also doubted that homeowners associations of developments with fewer than 40 to 50 units would be able to adequately finance the maintenance of streets.

Another reason given for discouraging the use of private streets in ZLL development was that most families moving into these projects had expressed a preference for public streets. Developers had indicated to the planning department that many of their buyers were moving out of townhouses and condominium developments with homeowners associations. In many cases, dissatisfaction with the association concept had been identified as an important reason for moving into a single-family detached development where residents owned their own lot and did not have to be concerned with the maintenance of common areas. Staff strongly believed that although private streets could lower development costs, their long-term maintenance costs to the homebuyer would ultimately far outweigh the initial savings.

Projects

In this section, three projects that were built under Dade County's ZLL provisions are examined. These projects were selected from several inspected in the field because they were among the better designed, more successful, and more affordable ZLL developments built since enactment of these provisions. It is significant to note, however, that these projects did not differ greatly from other ZLL development that had occurred in Dade County.

Bilbao Estates

International Development and Investment Corporation, the developer of Bilbao Estates, was a mid-sized development firm that had been in the land development and home building business since 1978. The firm had specialized in developing single-family detached homes priced at under \$100,000. In the early 1980s, however, rising land and other development costs had made it difficult for this firm to build for this market.

Background. Located in a substantially undeveloped fringe area of the county, the 25-acre

Project Profile

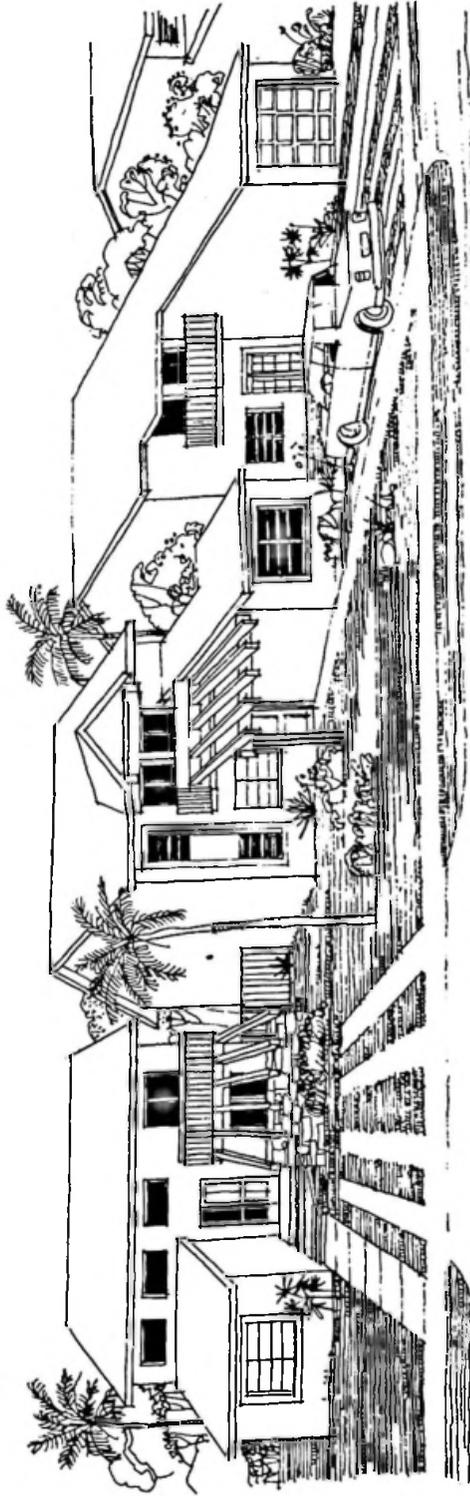
BILBAO ESTATES DADE COUNTY, FLORIDA	
Site Area:	25 acres
Total Dwelling Units:	198 ZLL lots
Gross Density:	7.9 units/acre (approximate)
Average Lot Size:	4,400 sq. ft.
Average Unit Size:	1,720 sq. ft.
Average Price:	\$92,000
Developer:	International Development and Investment Corp. Miami, Florida

site was originally planned by the developer for a duplex development. Although the developer had hoped to develop this parcel for conventional single-family detached homes, land costs of about \$180,000 per acre made higher-density duplex development the only economically feasible approach—until the ZLL option became available. Shortly after enactment of the ZLL provisions, the developer altered his original plans to allow for a ZLL development and was granted a rezoning from RU-TH (townhouse) to RU-3M (multifamily) to accommodate 198 ZLL homes at a proposed net density of 11.49 units per acre. The developer estimated that, under conventional standards for single-family detached development, land development and improvement costs would have increased the selling price of the average unit by approximately \$25,000. The final cost of a unit would have been too high for his market—couples moving from townhouses and other attached units looking for homes under \$100,000.

Site Plan. To avoid the visual monotony that can occur in small-lot development, front-yard setbacks were varied, from 20 to 25 feet, and no two identical units were sited side by side on the lots, which ranged in size from 4,000 square feet to 4,400 square feet. The use of front-yard setbacks that were substantially greater than the permitted minimum five-foot setback and lot frontages that averaged 44 feet made this ZLL development look very much like conventional development in Dade County. (See Figures 17 and 18.) Building coverage was limited to 32 percent of the lot, about the same maximum permitted in conventional development. The standard 50-foot right-of-way was used throughout and all streets were public. Public water and sewer were provided and drainage was handled by a system of valley gutters, which were usually required when front-yard setback was less than 25 feet.

Units. Twelve different floor plans were offered this development; the units were one- and two-story with three or four bedrooms. Units ranged in size from 1,440 square feet to 1,945 square feet, and were priced from \$84,300 to \$96,500. (See Figure 19.) The most popular type was a 1,463-square-foot, one-story, three-bedroom unit, priced at \$85,500. A one-car garage was included with some of the units

Figure 17. Bilbao Development, Dade County, Florida.



The developer of this project provided 20- to 25-foot front-yard setbacks to allow for a more conventional and spacious appearance. The use of parking

strips, rather than parking pads or aprons (see Figure 23), tended to minimize the impact of parking on these small, narrow lots.

Figure 18. Site Plan, Bilbao Development, Dade County, Florida.

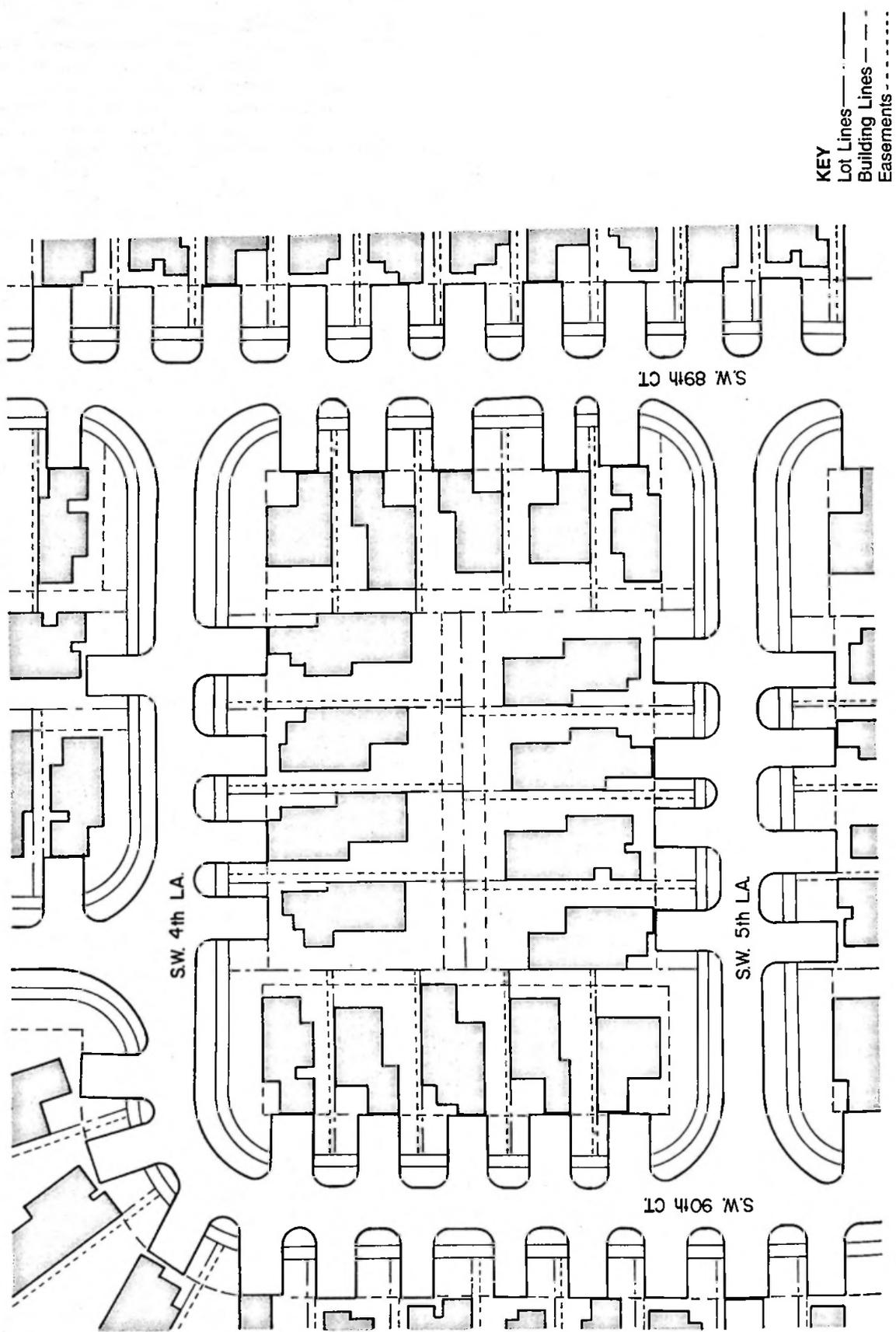
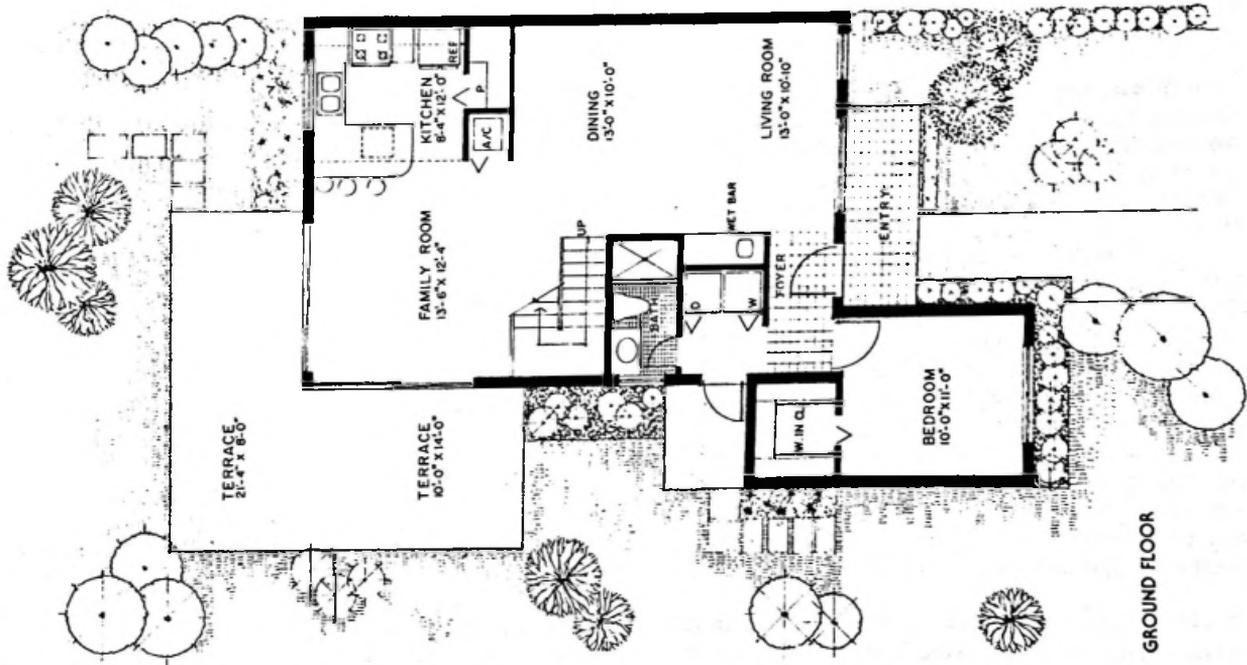
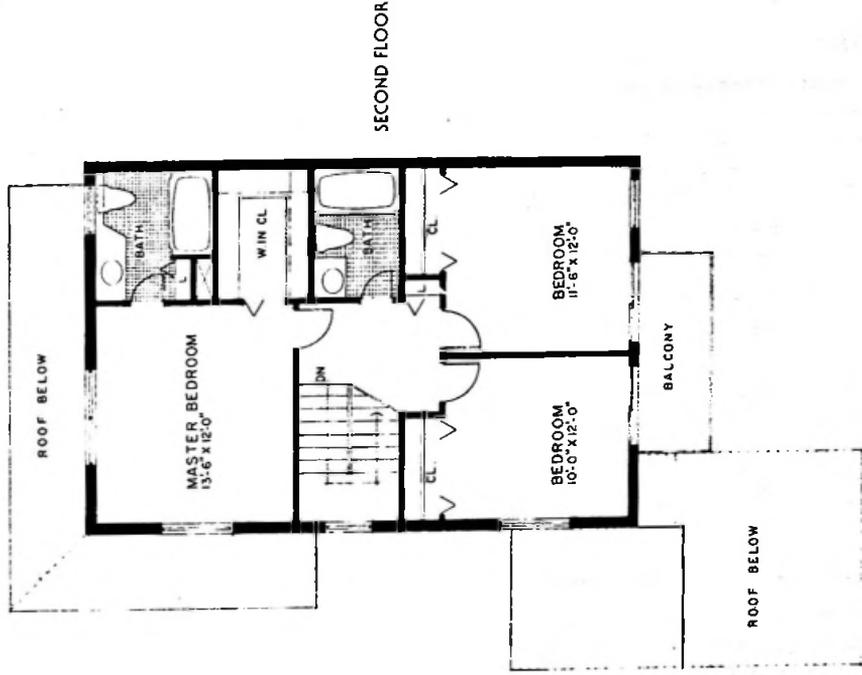


Figure 19. Floor Plan, Bilbao Development, Dade County, Florida.



GROUND FLOOR



SECOND FLOOR

- 4 Bedrooms
- 3 Baths
- 1,768 Square Feet

This floor plan is for the unit at the center of Figure 17.

above 1,700 square feet. Each house was equipped with standard appliances, except refrigerators, and included central air conditioning, heat, and wall-to-wall carpeting in most rooms.

Bird Road Estates

Project Profile

BIRD ROAD ESTATES DADE COUNTY, FLORIDA	
Site Area:	24 acres
Total Dwelling Units:	64 ZLL lots 44 Conventional lots
Gross Density: (approximate)	59 units/acre (ZLL) 4.5 units/acre (total)
Average Lot Size:	5,699 sq. ft. (ZLL lots) 7,500 sq. ft. (Conventional lots)
Average Unit Size:	1,502 sq. ft. (ZLL)
Average Price:	\$82,700 (ZLL units)
Developer:	Village Development, Inc. Miami, Florida

Prior to its involvement in the Bird Road Estates development, Village Development, Inc., specialized in conventional single-family development.

Background. Bird Road Estates was built in a partially developed, fringe area of the county that was zoned for RU-1 single-family detached development. The 24-acre site was originally planned for 86 standard single-family lots (75' x 100'). Slow market response to this development, however, prompted the developer to modify plans so that 44 lots would be developed as standard lots and 64 lots as ZLL. The developer was able to offer the ZLL units for about \$11,000 less than the conventional homes in this development.

Site Plan. The 64 ZLL lots in this development, averaging 5,699 square feet, were surrounded by 44 standard-sized lots that served as a buffer between the smaller ZLL lots and existing standard lots in adjacent development. (See Figure 20.) The minimum frontage of the ZLL lots abutting standard-sized lots was 50 feet and the minimum lot frontage of the other ZLL lots was 45 feet. The site plan limited lot coverage to 26 percent, well below the maximum of 50 percent allowed in ZLL development and the maximum coverage of 35 percent permitted in conventional development. This gave the lots an open and roomy appearance.

The standard 50-foot public right-of-way was provided as well as public water and sewer. Minimal front-yard setback, which averaged 10 feet, required the installation of valley gutters to protect the pavement edge and swale area.

Units. There were five floor plans offered in this development, ranging in size from 1,193 square feet up to 1,713 square feet. The smaller units contained two bedrooms and two baths, and the larger units

contained three bedrooms and two baths. The design of each unit created an "outdoor room" in the side yard area that was surrounded by three walls. (See Figure 21.) This plan, according to local officials, represented one of the best applications of building design to the ZLL concept by allowing for maximum use of outdoor and indoor spaces.

Both one- and two-story units were included and a one-car garage was offered in some floor plans. Each unit came with central air conditioning and heating, wall-to-wall carpeting, and all standard kitchen appliances, except a refrigerator.

Oak Park

Project Profile

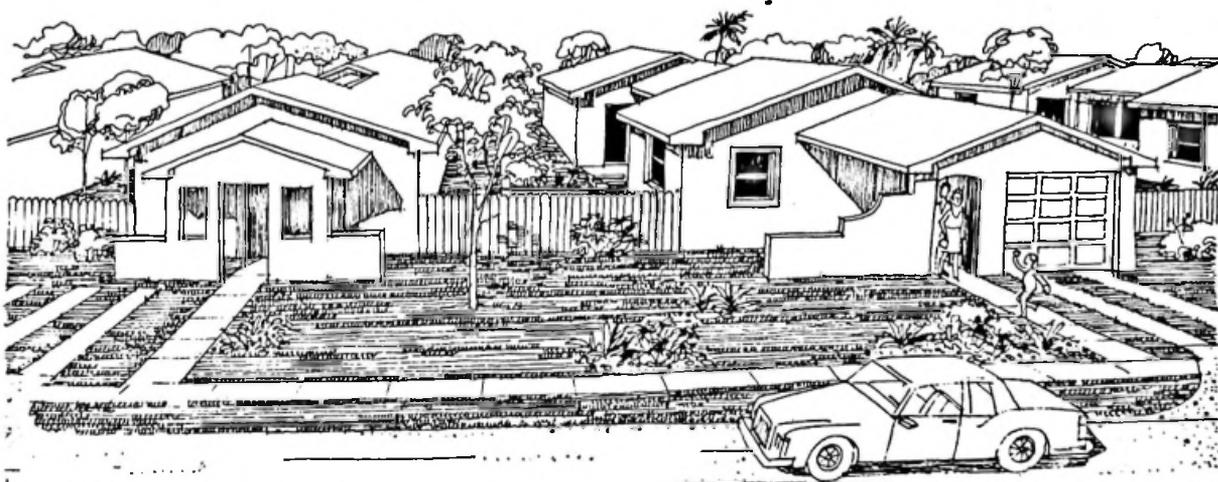
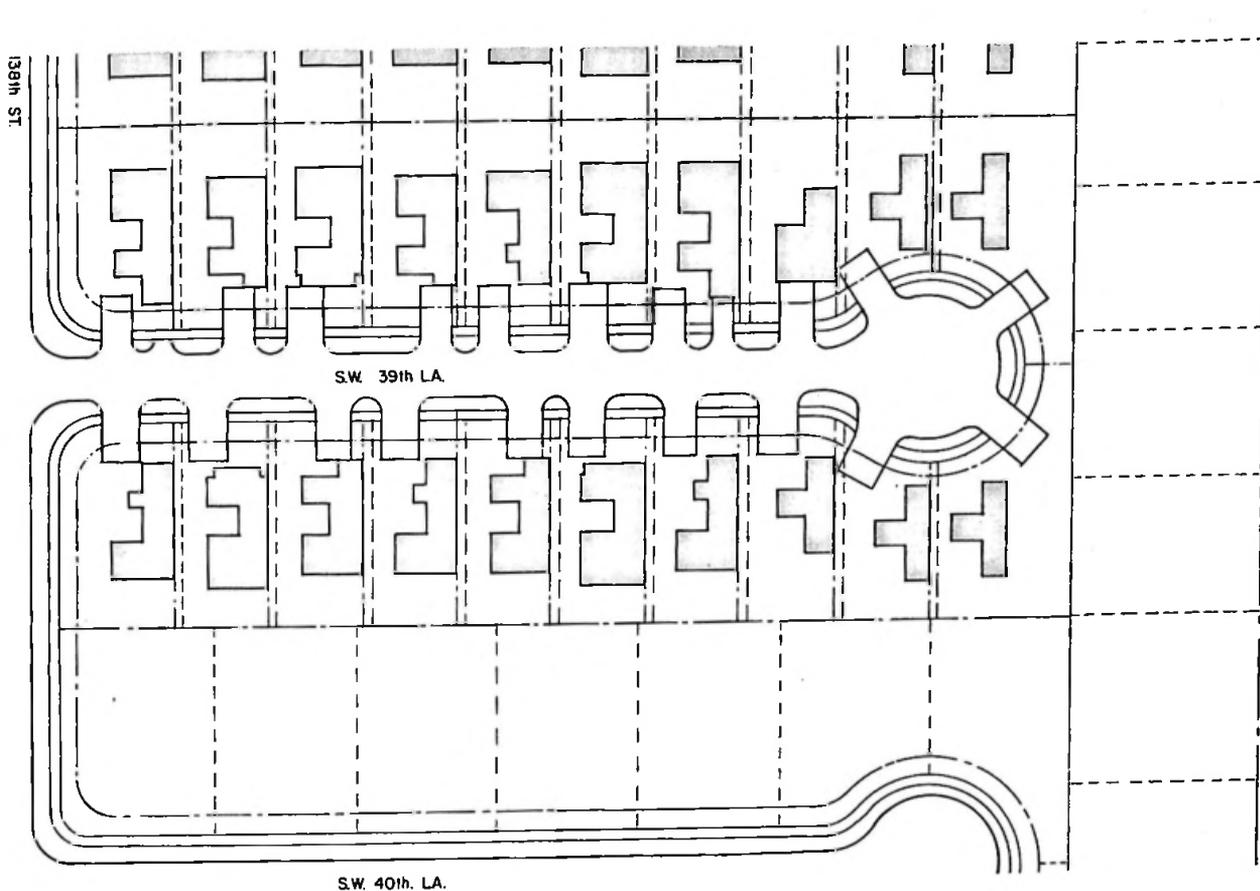
OAK PARK DADE COUNTY, FLORIDA	
Site Area:	60.48 acres (total)
Total Dwelling Units:	247 ZLL lots 15 EU-M lots (15,000 sq. ft.)
Gross Density: (approximate)	4.74 units/acre (ZLL) 4.33 units/acre (total)
Average Lot Size:	5,400 sq. ft. (ZLL lots) 15,000 sq. ft. (EU-M lots)
Average Unit Size:	1,103 sq. ft. (ZLL)
Average Price:	\$65,240
Developer:	Weitzer Corporation Miami, Florida

The Oak Park Development was the largest undertaken by the Weitzer Corporation, which previously averaged about 90 units per year.

Background. Located in a predominantly undeveloped southwest corner of the county, the Oak Park development covered more than 60 acres with a mix of 247 ZLL lots and 15 large lots that were left over from a previous plan for the parcel. The current developer was required to retain these larger lots, which averaged 15,000 square feet, as a transition along the site's northwest and western boundaries, where partially developed adjacent land was zoned for RU-1 and EU-M uses (conventional single-family and large-lot estates development). The size of this development (over 259 units) required that it be reviewed by the county's Development Impact Committee to determine its impact on the environment, the economy of the area, and essential services; it was also reviewed for compliance with applicable county plans. The committee approved the project but required that the developer help improve a proposed new park for the area.

Site Plan. Other than the siting of units on the side lot line, this development's layout closely resembled conventional subdivision design. Like the Bird Road development, lots were significantly larger than the minimum 4,500-square-foot lots permitted in ZLL development occurring in RU-1 districts. Frontages, averaging 60 feet, and average lot

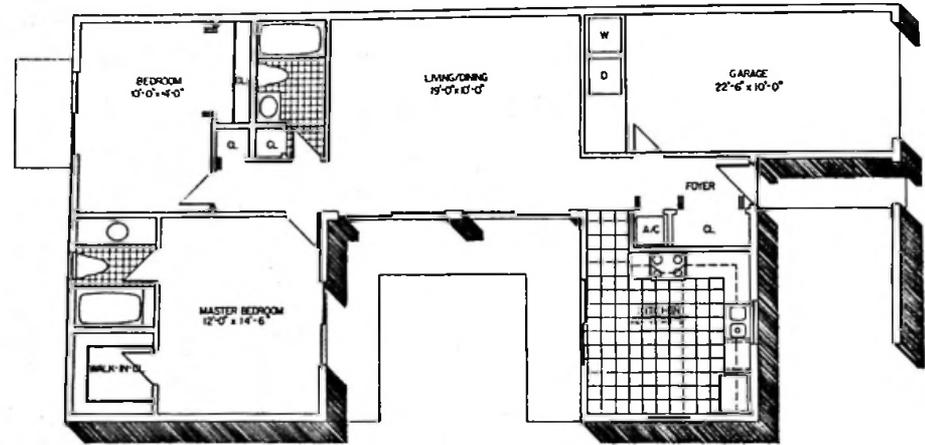
Figure 20. Bird Road Development, Dade County, Florida.



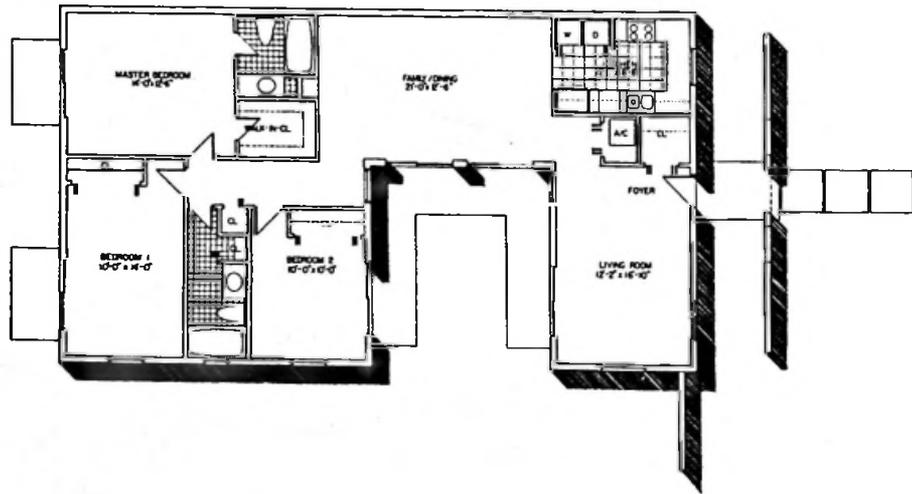
As shown in the portion of the site plan, the design of most units created "outdoor rooms" in side yards. Note also the standard-sized lots that surround ZLL lots and

serve as a buffer between the small ZLL lots and existing standard lots in adjacent development.

Figure 21. Floor Plans, Bird Road Development, Dade County, Florida.

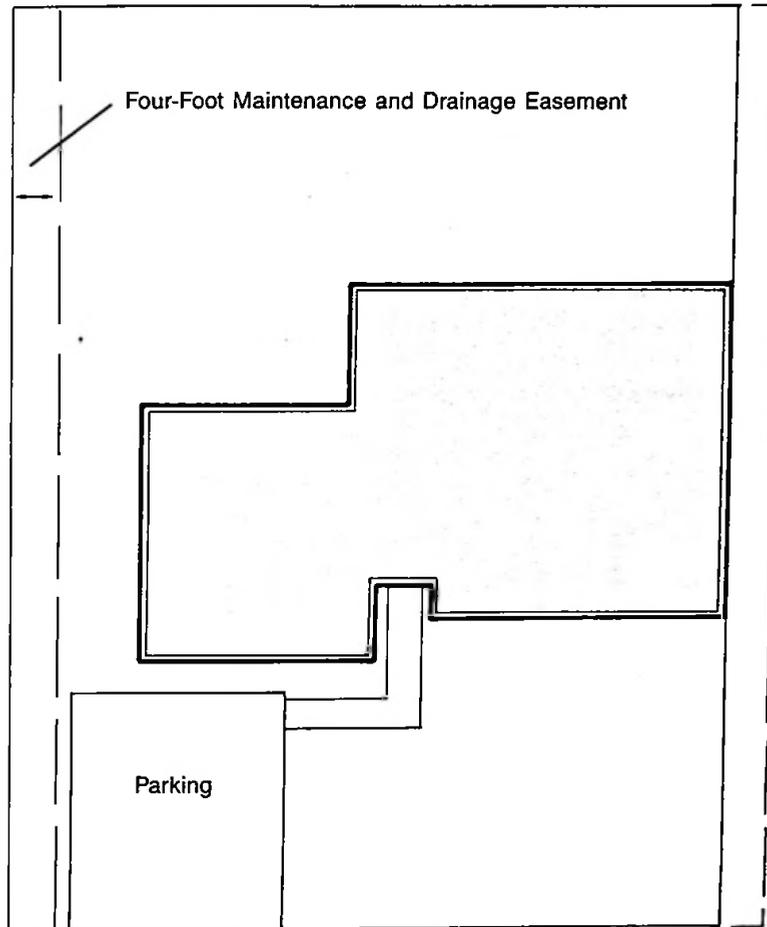


- 2 Bedrooms
- 2 Baths
- 1,372 Square Feet



- 3 Bedrooms
- 2 Baths
- 1,517 Square Feet

Figure 22. Typical Siting of Units, Oak Park Development, Dade County, Florida.



coverage at 25 percent were also similar to conventional standards. Front-yard setbacks averaged 25 feet—the same as required in conventional development. Most units were oriented to the front of the lot—like more conventional development—rather than to the side of the lot, which was more common in ZLL development. (See Figures 22 and 23.) The result of this layout was a development that looked very much like a conventional one with standard 75' x 100' lots. The interior street system consisted of standard 50-foot rights-of-way. Unlike the other two developments, discussed above, valley gutters were not required because standard front-yard setbacks were used.

Units. The 247 ZLL units ranged in size from 870 square feet (three bedrooms and one bath) up to 1,335 square feet (four bedrooms and two baths) and four floor plans were offered, two with vaulted ceilings. (See Figure 24.) Units were priced from \$55,990 to \$66,990. According to the developer, the average price of units was about \$10,000 less than it would have been if this project had been developed under conventional standards rather than ZLL provisions.

How the Zero Lot Line Provisions Performed

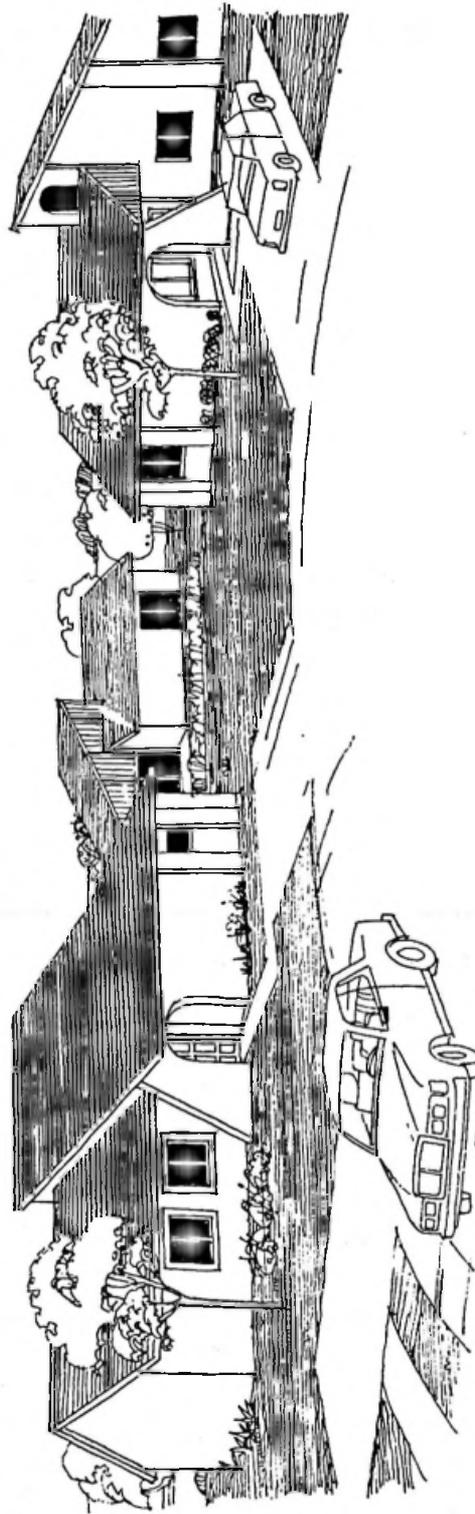
A closer examination of the three projects provides some indication of how Dade County's provisions for ZLL performed. This section examines the extent to which the primary objectives of the ZLL development option were achieved in the projects.

Achieving the Objectives of the ZLL Option. Dade County's provisions for ZLL development contained a clear statement of purpose. The statement not only provided a convenient set of criteria for assessing the overall performance of the provisions, but more importantly, it gave some guidance to developers who planned a project under these provisions. It told developers what local officials expected to accomplish by allowing such development.

The statement of purpose made it clear that the county wished to achieve more than merely small-lot ZLL projects. The county also wanted more affordable housing with well-integrated indoor and outdoor areas that allowed maximum use of space.

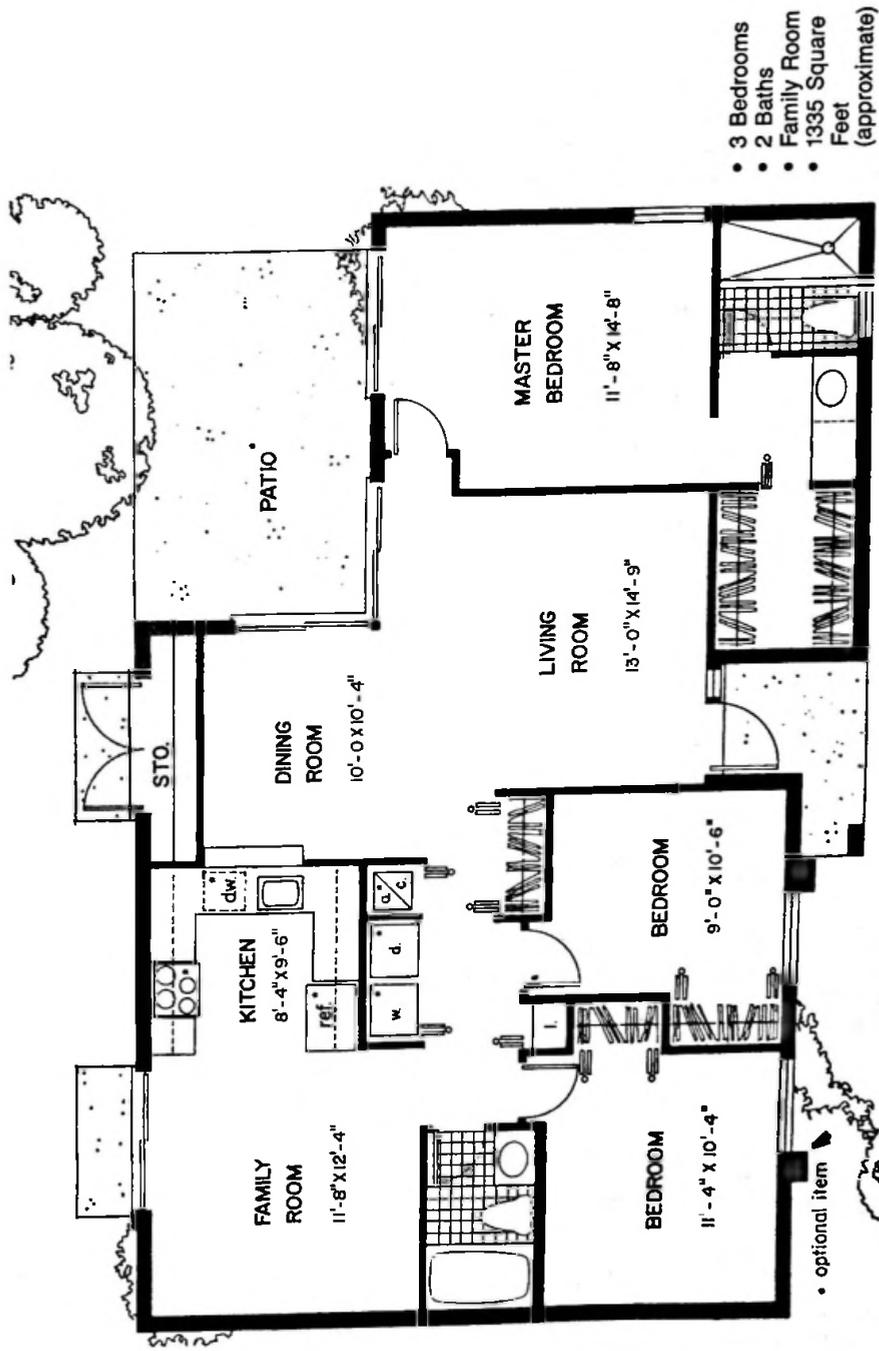
The primary objectives of Dade County's ZLL provisions were:

Figure 23. Oak Park Development, Dade County, Florida.



Most lots in this development have 60 feet of frontage and 25 feet of front-yard setback. These dimensions make the model look more like conventional

Figure 24. Floor Plan, Oak Park Development, Dade County, Florida.



This floor plan is for the unit at the left in Figure 23.

Table 17. Selected Standards from ZLL Projects, Dade County, Florida.

	Bilbao 25 acres 198 units ZD-RU-3M*	Bird Road 11 acres 64 units ZD-RU-1*	Oak Park 52 acres 247 units ZD-RU-1*
Lot Area for ZLL Lots Permitted (Minimum) Provided (Typical)	4,000 sq. ft. 4,400 sq. ft.	4,500 sq. ft. 5,699 sq. ft.	4,500 sq. ft. 5,400 sq. ft.
Coverage Permitted (Maximum) Provided	50% 32%	50% 26%	50% 22%
Frontage Permitted (Minimum) Provided	No. req. 44 ft.	45 ft. 50 ft.	45 ft. 60 ft.
Setbacks			
Front			
Permitted (Minimum)	5 ft.	5 ft.	5 ft.
Provided	22.5 ft.	10 ft.	25 ft.
Rear			
Permitted (Minimum)	No req.	No req.	No req.
Provided	10 ft.	15 ft.	17 ft.
Side			
Permitted (Minimum)	0/10 ft.	0/10 ft.	0/10 ft.
Provided	0/10 ft.	0/10 ft.	0/10 ft.
Unit Size			
Smallest	1,440 sq. ft.	1,193 sq. ft.	870 sq. ft.
Average	1,720 sq. ft.	1,502 sq. ft.	1,103 sq. ft.
Largest	1,945 sq. ft.	1,713 sq. ft.	1,335 sq. ft.
Selling Price			
Average/Unit	\$ 92,000	\$82,700	\$65,240
If Conventional on 75' x 100' lot.**	120,000	94,000	75,000
* Zoning District			
** Estimates provided by developer.			

1. To allow for more efficient use of land, as compared with the typical single-family development, making available more affordable housing.

2. To encourage the design of dwelling units that integrate and relate internal-external living areas, and outdoor spaces that can be used to their maximum benefit, resulting in more pleasant and enjoyable living facilities.

More efficient use of land, resulting in more affordable housing. This objective was achieved in each of the projects. As shown in Table 17, each of the projects took advantage of the higher densities and/or smaller lot sizes permitted when the ZLL option was used. This was especially the case in the Bilbao Estates development where lots averaged 4,400 square feet and the gross density was nearly eight units per acre, which was about twice the density achieved in conventional development. It is significant to note, however, that while the average lot size in each ZLL development was considerably smaller than the conventional 7,500-square-foot lot, the average lot size in each was considerably greater than the minimum lot size that could have been used. In two developments—Bird Road and Oak

Park—lots averaged about 1,000 square feet more than the minimum allowed. In order to produce a more conventional site design, the developers of these projects chose not to build to the minimum standards for lot size, setbacks, and frontage, nor to the maximum lot coverage allowed.

The ZLL option also resulted in substantial savings in development cost and, consequently, in savings to the consumer. The Bilbao Estate development is worthy of special mention. Under conventional requirements, fewer than 100 units could have been built, while 198 units were allowed under the zero lot line provisions. The developer estimated that developing the project at this density allowed for savings of about \$18,000 per lot in land and improvement costs, which helped to reduce the average selling price of homes to \$92,000. According to the developer, building the same project under conventional standards would have resulted in homes with an average price of approximately \$120,000. The developer also claimed that without these savings in development costs this project would not have been economically feasible and the houses could not have been priced for the intended market interested in homes priced under \$100,000. At current prices the project did well, with over 70 percent of the homes sold within eight months.

The developers of the Oak Park and Bird Road developments noted comparable savings in development costs that can be attributed to the zero lot line provisions. In these projects the average savings per lot were less, in part, due to lower land costs. For example, the land cost in the Bilbao development was about \$108,000 per acre; land costs were \$30,000 per acre in the Oak Park development and \$50,000 per acre in the Bird Road development. As shown in Table 17, the developer of the Bird Road development estimated that if this project had been developed under conventional standards, units would have cost about \$11,000 more; the Oak Park developer estimated that savings passed on to homebuyers amounted to nearly \$10,000 per unit.

As was the case in the Bilbao project, ZLL provisions not only allowed for substantial savings in development cost and the subsequent selling price of homes, but also made the projects feasible. For example, the Bird Road development began as a conventional single-family detached development with conventional 75' x 100' lots. After developing about 40 conventional lots, the developer found that there was little market for them. Since this development occurred in an RU-1 district, the developer was finally required to retain the conventional-sized lots at the perimeter of the development to serve as a buffer to existing conventional development, but was allowed to develop interior lots under the ZLL provisions.

According to the developer of the Oak Park development, the ZLL provisions were essential to his project. This developer wanted to build to a market consisting of families with children that could afford homes in the \$60,000 to \$70,000 range. Low land costs helped keep down the cost of units, but the targeted price range would have been impossible to reach if conventional-sized lots, setbacks, and frontage were used.

The fact that each of these projects sold well, according to their developers, can be attributed to their affordability; houses in these projects cost less than the average conventional single-family unit in Dade county. This was especially true of the Oak Park development that offered one three-bedroom model priced at under \$60,000. All but 58 of the 262 units in this development were sold within a year, and the remaining houses were sold during the following six months. Developers in the county believed that it was impossible to build a single-family detached house in most parts of the county under conventional standards for a selling price of under \$100,000.

Integration and design of indoor and outdoor areas. How well these projects integrated interior and exterior living areas was, in part, a measure of how well they met the 15 percent requirement—that is, whether 15 percent of the lineal length of the perimeter wall area of each unit provided both visual and physical access to the yard areas. In addition, how well indoor and outdoor areas were integrated had to do with how side- and rear-yard areas were handled, as well as the design

and siting of the dwelling units. Beyond technically satisfying the 15 percent requirement and other standards meant to encourage units designed in ways that would result in “pleasant and enjoyable living facilities,” performance here was largely an aesthetic matter that could best be measured by homeowner satisfaction. Because each of these projects is relatively new, little data on homeowner satisfaction exists. The staff, however, recorded their opinions concerning the effectiveness of the design criteria.

From a technical standpoint each of the projects met the 15 percent requirement by allowing for at least 15 percent of the lineal length of the perimeter wall area of each dwelling unit to open out into yard areas from sliding glass doors. Each development also included at least 10 feet of improved side-yard area on each lot. Staff believed, however, that the developments had varying degrees of success in integrating indoor and outdoor spaces and in maximizing use of outdoor space. Of the three projects featured in Table 17, staff believed that the Bird Road development did the best job of integrating indoor and outdoor areas and designing outdoor spaces. Local officials pointed out that the chief reason this development appeared to fare better than the others in these respects was the design of the dwelling units. Most units were designed to include an outdoor “room” in the side-yard area that was surrounded by three walls. As shown in Figure 21, four living areas—the living and dining rooms, kitchen, and one bedroom—opened out from glass sliding doors to this outdoor “room.” This area, which faced the blank wall of the adjacent unit, was private and served as an extension of the indoor areas.

Integrating indoor and outdoor areas in this fashion, however, was not without cost. The developer of Bird Road notes that this design increased the exterior wall area substantially. For example, a 1,500-square-foot home designed in this manner had as much exterior wall area as a 2,000-square-foot home. A less costly and more conventional design might have satisfied the 15 percent requirement. The developer pointed out, however, that his design was used not only to satisfy requirements, but also to increase the market appeal of the development. According to the developer, this design feature was well received by homebuyers and was an important selling point.

The other two projects were not as successful as the Bird Road development in maximizing the usefulness of the side-yard areas and in designing a unit that took full advantage of the zero lot line concept. Both the Bilbao and Oak Park developments, however, were designed to look more like conventional development than the zero lot line development. In each case, the developer found that their buyers preferred front-yard setbacks comparable to those found in conventional development. These developments also provided greater lot frontage than the minimum permitted in ZLL development. This was especially true in the Oak Park development where frontage averaged about 60 feet—only 15 feet less than the 75-foot minimum required in conventional development—

and average front-yard setbacks met the minimum requirement for conventional subdivisions. As in conventional development, this siting arrangement placed the greatest amount of usable open space at the rear of the lot, rather than in the side-yard area. The larger frontage allowed units to be sited lengthwise, along the width of the lot, and oriented the house to the front and rear of the lot. (See Figure 22.)

The Bilbao development provided a narrower lot than the Oak Park development. The average front-yard setback of 22.5 feet and the average rear-yard setback of 10 feet, however, gave it a conventional look. Like the Bird Road units, the one-story units in the Bilbao development were designed and sited with more usable open space in the side-yard areas. In most of the larger two-story floor plans, the units were oriented to the front and rear of the lot with the greatest amount of usable open space located in these areas. (See Figure 17.) According to the developer, the larger two-story units on narrow ZLL lots had to be sited this way to ensure residents' privacy, especially in second-floor rooms.

There are both advantages and disadvantages to the site plan that the Oak Park and Bilbao developments chose. One advantage to allowing greater front-yard setback was that it better accommodated off-street parking. When less setback was provided at the front of the lot, cars parked on the two required spaces dominated the streetscape and gave the development a crowded appearance. Greater setback in the front of the unit tended to ease the visual impact of parking. But an obvious disadvantage to large front-yard setbacks was that the area in the front yard that was not used for parking was often of little use.

A problem in orienting these units to the rear of the lot and placing the bulk of the open space in the rear occurred when the rear lot line abutted the rear property line of another lot. If the rear yard was to be private and usable, a privacy fence or wall had to be used. This was the case in the Oak Park development, where homebuyers found it necessary to install rear-yard fencing. In time, under site plan review, the county began to require that the developer install fencing or walls when building design and siting does not ensure outdoor privacy.

Although local officials were not entirely pleased with the design of the Bilbao and Oak Park developments, they did feel that both developments provided good living environments. Staff pointed out that while the developers may not have taken full advantage of the zero lot line concept, they were able to achieve aesthetically pleasing and affordable projects that would not have been possible under conventional development requirements.

Overall Performance of ZLL Standards

Local officials were generally satisfied with the way the standards for ZLL development worked. They noted that minimum lot area, setback, frontage, building coverage, and various other design requirements allowed for the flexibility that

developers sought in single-family development. At the same time, the standards did not sacrifice the more important advantages of single-family detached housing or jeopardize public health, safety, and welfare. These results were evident in the three projects examined. In each of these projects the minimum standards for ZLL development appeared to be more than adequate. The developers also noted that for the most part they were able to achieve the level of density and the overall site design that they desired.

There were several areas, however, where local officials found the need for some fine tuning of the ZLL provisions. One major concern was the regulation of density. In some cases, choosing to regulate density by minimum lot size requirements rather than by putting a cap on the number of units per acre resulted in ZLL proposals that were too dense in the opinion of planning staff. This was not a problem in development occurring in the RU-1 zone districts, where lots averaged 4,500 square feet and the maximum number of units per gross acre was limited by the county's comprehensive plan to six units per acre. In less restrictive zoning districts, however, where the average minimum lot size can be 4,000 square feet and considerably higher density was allowed in the comprehensive plan, some developers proposed ZLL projects at densities that staff believed were better suited to attached projects. Some projects were not able to achieve the level of design demanded when minimum lot size and maximum density requirements were used. At the time of publication, officials were considering what constitutes an appropriate density cap and how density may be better regulated in the provisions without severely compromising the flexibility that the ZLL option offers.

Staff also had to reconsider provisions regarding privacy and usable outdoor areas. Local officials found that the design of some projects did not do a good job of making outdoor areas private. In 1983, therefore, the county developed design criteria for privacy fencing and walls in zero lot line development. (See Exhibit A.) At that time, the county planned to translate these criteria into specific standards that would require fencing and walls in all ZLL development. Patio areas would also be required to be improved by adding either a concrete slab, wooden decking, or similar man-made surfacing to make these areas more usable. In most of the projects built under ZLL provisions, improved patio areas were provided. In a few, improvements other than sod were offered as an option. One final area where some change occurred was in the amount of required open-wall area—the "15 percent" requirement. This was the one standard that most developers felt was unreasonable. Developers found that most homebuyers preferred less open wall area for greater security. The requirement also added to the cost of housing. Staff had in the past responded to such complaints by pointing out that savings realized through the use of smaller lots and downsized units more than offset any increases in construction costs due to the requirement. Local officials also suggested that if security were a

concern, inexpensive, additional hardware could be used to secure the sliding glass doors.

State energy requirements, however, finally forced the officials to review the 15 percent provision. Pressure from the Florida Power and Light Company caused local officials to modify this requirement in 1983. The utility contended that the requirement increased energy costs and that developers could not comply with new energy standards. Under the amended requirement, only the non-ZLL walls were used in the calculation of required open wall area. This allowed for a slight reduction in the amount of wall area that must contain sliding glass doors. While some developers believed that even less open wall area was necessary, all agreed that the revised requirement was an improvement.

Local officials did not believe that the reduction in open wall area would significantly diminish the effectiveness of the requirement. This is important, because the staff was convinced that the 15 percent requirement, although modified, was still the heart of the provisions. They believed that this requirement "forced" better design, and that if they

did not require that some percent of the wall area be open, small "boxy" units with very limited private usable outdoor space would result. In effect, this requirement forced the developer to use units designed specifically for ZLL lots—usually deep and narrow when the site planner took full advantage of the flexibility offered by this concept—rather than merely downsized conventional floor plans. This design standard also encouraged the staggering of units to achieve privacy, usable side-yard areas, and an interesting and imaginative site plan.

Perhaps the most significant finding from the examination of the projects built under the ZLL provisions was that, with few exceptions, developers did not build to the minimum standards permitted, but rather to their markets. This was not only the case in the three projects examined in this section, but in most other ZLL projects that were built in Dade County. This trend clearly suggested that the county's provisions were adequate, and in most cases, allowed developers to build both marketable and affordable single-family detached housing.

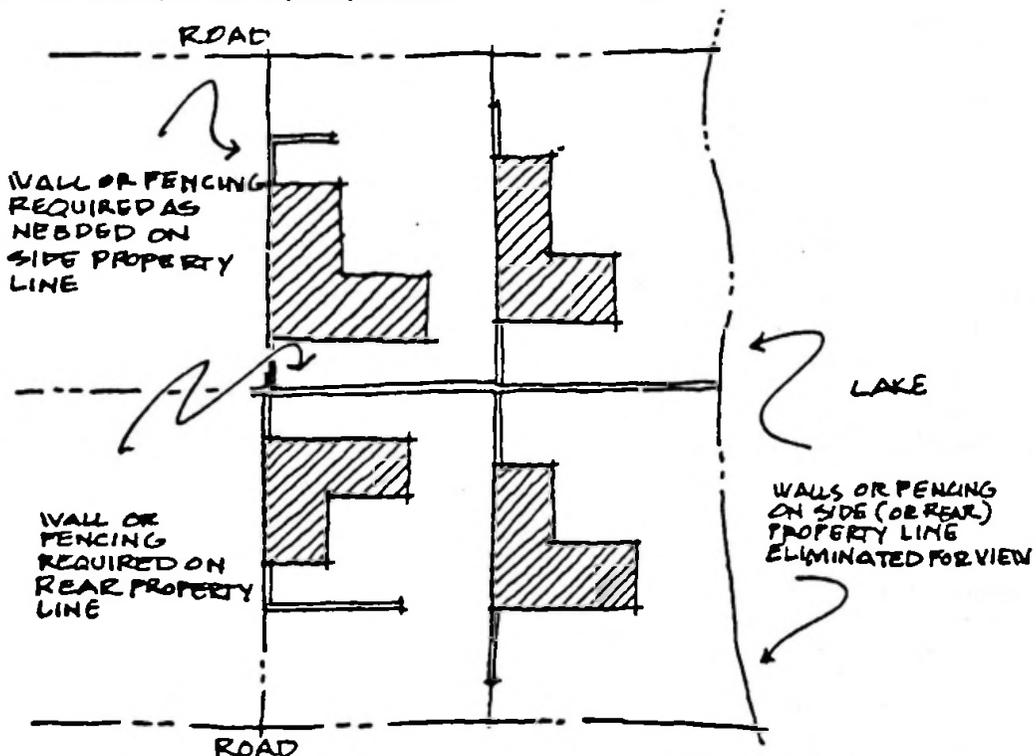
Exhibit A. Design Criteria for Walls and Fencing; Dade County, Florida.

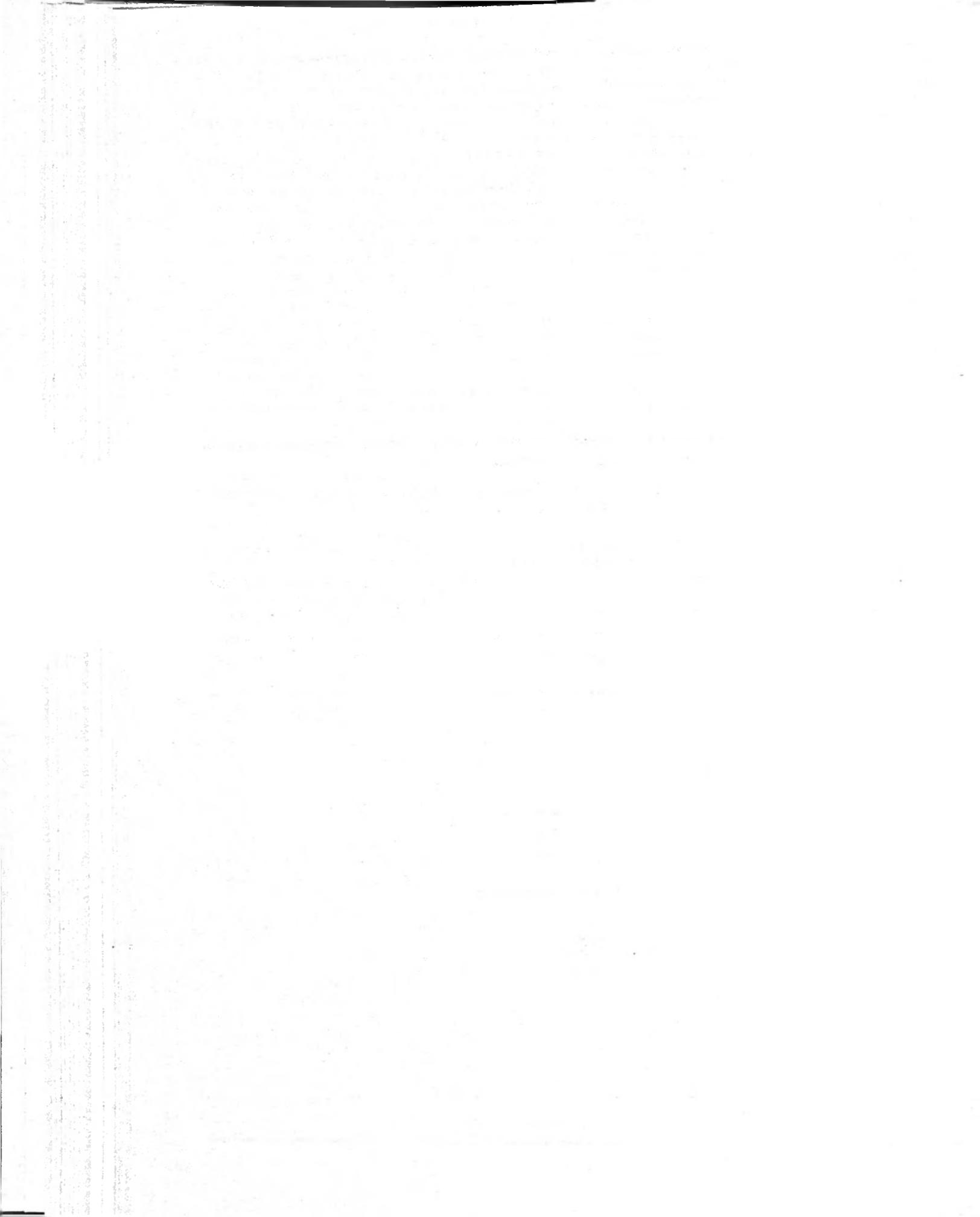
Privacy walls and/or fencing shall be provided by the developer along the rear lot lines between zero lot line units where any part of the lot(s) abuts another lot(s). Said walls and/or fencing shall be a minimum of six feet in height.

Walls, fencing or a combination thereof, shall be required along side lot lines where the adjoining buildings do not provide the necessary screening. The extent of the privacy element will depend on the design and layout of the units relative to providing adequate privacy as determined by site plan review.

When open fencing, such as chain link is used, shrubbery shall be planted in conjunction with the chain link fence. Said shrubs shall be placed at a minimum of two-and-one-half feet on center with a minimum height of two-and-one-half feet at the time of planting. The approval of the selection of the type of shrub shall be as determined by the site plan review.

Where a unit views a golf course, water body, canal or other similar amenity, such walls and fencing may not be required provided there is adequate visual privacy between the units as determined by the site plan review.





Fort Collins' New Approach to Planned Unit Development

Fort Collins, Colorado, a city of 72,000 located 65 miles north of Denver, nearly doubled its population in the decade of the 1970s. In response to its rapid growth, local officials in the late 1970s enacted a Land Use Policies Plan that called for a new system of regulating land use. What was eventually devised was the Land Development Guidance System, which received APA's Outstanding Planning Program Award in 1982. The Guidance System was an approach to planned unit development (PUD) that encouraged more concentrated mixed-use and higher-density residential development. The new system also contained provisions to ensure that new development was compatible with existing development, while still allowing for imaginative design and unconventional housing. Implementation of this system resulted in substantial reductions in land development costs and higher-density residential development in areas of the city that were previously reserved for low-density development. According to the planning department, these changes led to an increase in affordable housing.

The Fort Collins system offered a new approach to the review and approval of PUD. Although no single-family detached development had been built under its provisions at the time of APA's visit to the city (one single-family project had been approved for subsequent construction), the multifamily developments that were built can be used to evaluate the system. It was evident that Fort Collins' approach offered great potential for the provision of affordable housing. The flexibility the system permitted in building siting, lot size, frontage, setbacks, and density can accommodate innovative small-lot projects. While other communities may not wish to borrow all of Fort Collins' system, the city's experience should be instructive to communities that wish to provide greater opportunities for affordable housing under PUD.

The history of the system and its standards are discussed below. Two projects completed under the system's guidelines—Cottonwood and The Gables—as well as two projects that have been approved—Redwood Village and Overlook—are examined.

The Land Development Guidance System

The Land Development Guidance System grew out of the city's Land Use Policies Plan—the land use element of Fort Collins' comprehensive plan. Adopted in 1979, the Policies Plan was a response to both rapid growth in the '70s and to the inability of the city's 1967 land use plan and conventional zoning to effectively manage growth. Rezoning was occurring on a site-by-site basis. The compatibility of proposed land uses with the surrounding neighborhood was seldom considered. In addition, some uses were not being allowed in districts where similar uses had been permitted in the past, without any rational basis for such decisions.

The new Land Use Policies Plan refined the general goals and objectives of the city's ongoing comprehensive planning efforts and required that specific steps be taken to devise a new system of land use regulation. The Policies Plan was not intended to control, but rather to guide new development in a rational manner. The plan did not predetermine the location of land uses, nor did it attempt to identify specific areas where residential development of varying densities should be located. Instead, it established policies that encouraged more intense residential development near particular facilities.

The Policies Plan called for the development of new "land use, site planning, and urban design criteria" that could help ensure that new development and redevelopment proposals were well planned and compatible with adjacent land uses. The plan also recommended that density bonuses be incorporated into land use regulations to encourage the development of more affordable housing, especially for low- and moderate-income groups. In addition, the plan called for a point system to evaluate industrial development proposals and a project evaluation system for residential, commercial, and other non-industrial development and redevelopment proposals. In each case, the evaluation system was to use specific criteria to determine the positive and negative aspects of development proposals.

At the outset, the development of criteria for the review of industrial projects was, for the most part, independent of efforts to develop criteria for the review of non-industrial developments. Early work on each of these review systems, however, suggested that it would be better to bring them together and devise a system of land management that encompassed all types of development. This approach was also consistent with a major objective of the Land Use Policies Plan—the development of “more specific policies and criteria . . . to deal with the interrelationships of and between potentially incompatible land uses.”

The city began to develop the new system by examining the adopted and proposed performance-oriented development regulations of other communities, including Lake County, Illinois’ proposed performance zoning ordinance to replace conventional zoning; Boulder, Colorado’s point system for the allocation of building permits as part of the city’s growth control program; and Breckenridge, Colorado’s “Permit System”—a point system approach that replaced its zoning ordinance. Local officials settled on a system similar to the Breckenridge point system. Unlike the Breckenridge approach, Fort Collins’ Guidance System did not replace the zoning ordinance; it applied only to PUDs. However, because over 95 percent of all new development in Fort Collins was done as PUD, the Guidance System effectively replaced conventional zoning.

Like the Breckenridge system, the Guidance System established site design and development criteria for all types of development and assigned multipliers to some criteria. This feature of the Guidance System, which Fort Collins officials believed was essential to its overall effectiveness, recognized that certain policies and criteria were more important than others when planning new development.

The development of the system was guided by several assumptions and conclusions about land development in Fort Collins. Some of the more important ones were:

- *Any land use likely to occur in Fort Collins could in most cases be made compatible with any other neighboring land use through careful design and buffering.* This premise served as the rationale behind the system’s flexibility in respect to the location of various land uses; namely, under the Guidance System, no proposed land use was automatically excluded from a particular site, provided it could satisfy the criteria for such development.
- *Some land use decisions were better made by the private sector, while others required more input and guidance from public officials.* Local officials found that in many cases the private sector was in a better position to determine the appropriate location of new development and had, for the most part, made good internal design decisions, such as those governing building siting, the arrangement of open space, and parking. On the other hand, local officials believed that in many instances developers did not

do as good a job in making their developments compatible with existing development. Thus, the Guidance System contained specific criteria to ensure that new development was compatible with adjacent development, but allowed much more flexibility in respect to the location and the internal design of new development.

- *Increasing the opportunity for higher-density residential development and mixed land uses was good for the community.* This premise, a key assumption made in the Land Use Policies Plan, accounted for the flexibility that the system permitted in respect to the density of residential development.
- *Higher density could be an incentive for residential developers to incorporate measures that address larger community needs that otherwise might be ignored.* This concept originated in the Policies Plan and was implemented in the system by density bonuses given for the inclusion of housing for groups like low- and moderate-income families or the handicapped. A density bonus was also given when the development employed energy-conserving building design or siting and when it contained usable, common open space, and other features that address larger community needs.
- *Both the public and the development industry could benefit from a more predictable regulatory process.* The text of the Land Development Guidance System explained that:

Nothing is more predictable than a specific zoning district for a specific use. Unfortunately, the criteria for changing a specific zoning on a parcel of land are vague enough that the likely outcome of a rezoning request is difficult to predict. As a result, the general public loses faith in the process, and the developer is forced to take substantial financial risk. A system which makes the criteria for approval more explicit and predictable is of benefit to all parties. (p. vii)

This was a key objective of the Guidance System—to establish a predictable regulatory process through the use of explicit criteria for the review and approval of PUD proposals.

Guidance System Standards. Under the Guidance System, no proposed land use was automatically excluded from a particular site. Although the city’s prior requirements for PUD had permitted developers some siting flexibility, Fort Collins officials believed that developers were still hampered by certain rigid and arbitrary requirements. For example, the density limits and use restrictions imposed in the old PUD ordinance had not always reflected the capacity of the site or the neighborhood. The new system specified that a minimum density of three units per acre be required for residential development to allow for efficient delivery of services, and that the maximum density permitted be determined by market conditions, the performance of the site plan, and its location. Specific criteria that rated the importance of location relative to neighborhood capacity and overall community form, among other factors, determined

final maximum density. Under the old PUD requirements, the allowable density and floor area ratio had been set by zoning district; for instance, no more than 12 units per gross acre had been allowed in the medium-density residential zone "provided that the lot area shall be at least (3) times the total floor area of residential development." With the exception of fire lane and parking capacity requirements, the developer could now vary any given site design feature required in conventional development including, but not limited to, lot size, setbacks, frontage, and street width. In addition, there was no minimum common open space requirement and projects could be of any size. Under the old requirements for PUD, at least 30 percent of the total gross area of the site had to be devoted to common open space and the total site area had to be at least two acres.

The specific criteria contained in the new Guidance System also encouraged greater consistency in the review of PUD proposals. In the past, developers had thought that the planning staff was sometimes inconsistent or unclear in their review of PUD proposals. The new criteria made it possible for the city to require that review staff be able to explain clearly why a proposal was rejected or accepted.

The Review Criteria. The Guidance System used two types of criteria to evaluate development proposals—"absolute" criteria that each development had to satisfy before approval could be granted and "variable" criteria that regulated specific types of development.

There were six categories of absolute criteria that were used to determine the following:

1. Compatibility with existing development;
2. Compliance with adopted plans;
3. Compliance with minimum engineering and public service requirements;
4. Compliance with resource protection standards established by the city;
5. Conformance with established environmental standards; and
6. Appropriateness of building and site design proposed.

In each category the criteria were stated as questions. These questions had to receive a "yes" answer for a project to gain approval. For example, the questions that review staff had to consider to ensure that a proposed development was compatible with existing development were:

1. Have all differences between the applicant and the affected neighborhood as to social compatibility of the project been resolved, or have the processes outlined in "Administrative Guidelines for Identifying the Impacts on Social Compatibility" been followed?

2. Is the development compatible with and sensitive to the immediate environment of the site and neighborhood relative to architectural design; scale, bulk, and building height; identity and historical character; disposition and orientation of buildings on the lot; and visual integrity?

3. Have the conflicts that are presumed to exist between the proposed development and the surrounding land uses, as examined in "Administrative Guidelines Pertaining to Land Use Conflicts," been effectively mitigated in the planned unit development?

4. Is the project designed so that the additional traffic generated does not have significant adverse impact on surrounding development?

All the criteria that had to be considered in the review of a proposal were listed in the Land Development Guidance System manual. To facilitate the review, the manual also contained a chart that listed each category and the corresponding absolute criteria. (See Exhibit B.)

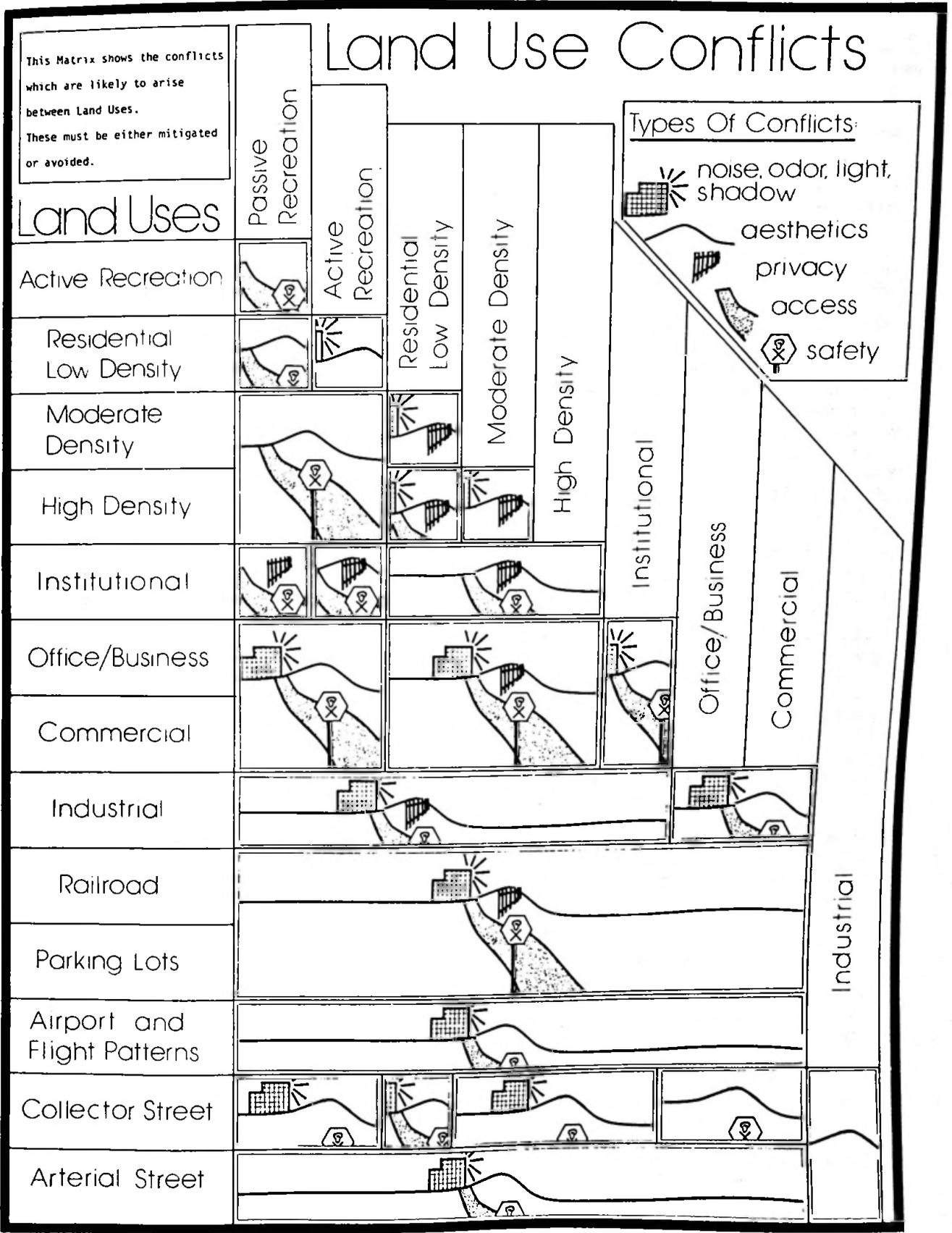
Criteria related to neighborhood compatibility were placed at the top of the list for all new development and redevelopment proposals in order to emphasize the importance of this factor in the Guidance System. Adherence to these standards was especially important because, under the Guidance System, any land use could be located adjacent to any other land use, provided the development's negative impacts, if any, were effectively mitigated. In addition, placing this requirement first mirrored the sequence of events that occurred in the review of development proposals under the Guidance System. Before a developer could proceed beyond the conceptual review stage, he or she had to meet with citizens that were affected by the development. Any other potential land use conflicts identified by staff also had to be resolved at this stage of the review process. This procedure had not always been in effect, however. In the original design of the Guidance System, neighborhood compatibility had not been as strongly stressed. The new requirement was enacted one year after adoption of the Guidance System to accommodate citizens' concerns that the system had not allowed for adequate input from the public early in the review process. A citizens group was allowed to rewrite the neighborhood compatibility section of the Guidance System to their satisfaction.

The importance of neighborhood compatibility was further emphasized by including "Administrative Guidelines for Identifying Impacts on Social Compatibility" and guidelines for the identification and resolution of land use conflicts in the appendix of the Guidance System manual. These guidelines clarified the intent of various criteria and suggested ways in which proposals could satisfy system requirements. For example, the "Administrative Guidelines for Identifying Impacts on Social Compatibility" explained the procedure that developers had to follow to ensure that citizens could voice their opinions about projects that affect their neighborhood. The "Administrative Guidelines for Land Use Conflicts" included a table listing the conflicts that were likely to occur between widely differing land uses. (See Exhibit C.) The text of the land use conflicts guidelines also included suggestions about ways to avoid or mitigate these conflicts.

Guidelines were also established to clarify other absolute criteria, including the following:

ALL DEVELOPMENT: NUMBERED CRITERIA CHART						
ALL CRITERIA				APPLICABLE CRITERIA ONLY		
CRITERION	Is the criterion applicable?			All the criteria listed?		If no, please explain
	Preliminary	Final	Not Applicable	Yes	No	
NEIGHBORHOOD COMPATABILITY						
1. Social Compatibility						
2. Neighborhood Character						
3. Land Use Conflicts						
4. Adverse Traffic Impact						
PLANS AND POLICIES						
5. Comprehensive Plan						
PUBLIC FACILITIES & SAFETY						
6. Street Capacity						
7. Utility Capacity						
8. Design Standards						
9. Emergency Access						
10. Security Lighting						
11. Water Hazards						
RESOURCE PROTECTION						
12. Soils & Slope Hazard						
13. Significant Vegetation						
14. Wildlife Habitat						
15. Historical Landmark						
16. Mineral Deposit						
17. Eco-Sensitive Areas						
18. Agricultural Lands						
ENVIRONMENTAL STANDARDS						
19. Air Quality						
20. Water Quality						
21. Noise						
22. Glare & Heat						
23. Vibrations						
24. Exterior Lighting						
25. Sewage & Wastes						
SITE DESIGN						
26. Community Organization						
27. Site Organization						
28. Natural Features						
29. Energy Conservation						
30. Privacy						
31. Open Space Arrangement						
32. Building Height						
33. Vehicular Movement						
34. Vehicular Design						
35. Parking						
36. Active Recreational Areas						
37. Private Outdoor Areas						
38. Pedestrian Convenience						
39. Pedestrian Conflicts						
40. Landscaping/Open Areas						
41. Landscaping/Buildings						
42. Landscaping/Screening						
43. Public Access						
44. Signs						

Source: Fort Collins, Colorado, Land Development Guidance System for Planned Unit Developments, April, 1982, p. 12.



Source: Fort Collins, Colorado, Land Development Guidance System for Planned Unit Developments, April, 1982, p. C-3.

- **Building Height Review Criteria.** This document established a framework for the review of buildings with heights in excess of 40 feet. It explained why such buildings required special review; gave a description of the type of information that the developer must submit when proposing such buildings; suggested appropriate locations; and discussed how to mitigate the potentially negative impacts of taller buildings.
- **Access for Fire Vehicles and Apparatus.** These illustrated guidelines were designed to interpret system criteria that ensured adequate fire protection. In addition, they were provided because fire lane width and minimum distance between fire lanes and buildings were requirements that the Fire Marshall under no circumstances would allow to vary under the Guidance System or otherwise.
- **Determining Shadow Patterns for a Building or a Tree.** These illustrated guidelines (Reprinted from *Protecting Solar Access for Residential Development: A Guidebook for Planning Officials*, The American Planning Association, 1980) explained how a shadow analysis could be done to meet both building height review and compatibility requirements.

Fort Collins developed other documents that explained how various system criteria could be met including: *Parking Lot Development Guide*; *Design Criteria and Standards for Streets*; *Landscaping Requirements*; and *Off Street Parking Supply: Peak Demands, Prevailing Standards and Recommended Guidelines for Commercial and Industrial Uses*. Guidelines were also developed for two other areas, *Housing for the Handicapped*, which established requirements for housing in this category if a density bonus were to be given; and *Housing for Low-Income Families*, which defined low-income housing, and also established requirements for obtaining a density bonus. Density bonuses are discussed in more detail below.

If the development proposal satisfied each absolute criterion, it was then reviewed to determine if it complied with the variable criteria—those criteria that regulated specific types of development. Although some design factors were addressed by the variable criteria, these criteria focused primarily on locational factors, such as the proposed project's access to transit routes and arterial or collector streets, or proximity to other types of development. A set of variable criteria was established for each of the following land use categories: neighborhood service center; community/regional shopping center; auto-related and roadside commercial uses; business service uses; industrial uses; extraction, salvage, and junk yard uses; and residential uses.

To determine if a proposed development should be allowed, review staff awarded points to a project on the basis of its ability to satisfy the requirements set forth by the system's variable criteria. For non-residential development one point was given for each criterion that the proposal implemented adequately. Two points were awarded if the staff believed the proposal did an excellent job of implementing a criterion or did the best possible job of implementing, given the constraints and opportunities of the site. Each variable criterion was also assigned a multiplier from 1 to 5 that signified the importance of that criterion relative to other

criteria. To facilitate the calculation of points that a project could receive for satisfying variable criteria, a Point Chart was developed for each category. (See Exhibit D.) To gain approval, nonresidential proposals had to achieve a specified minimum number of points.

The variable criteria that were established for residential development were outlined in a density chart that was used to calculate the maximum level of permitted density. (See Exhibit E.) There were two types of variable criteria governing density—"base" criteria that set density according to the locational attributes of the proposed development (i.e., the development's proximity to certain existing or planned developments or facilities), and "bonus" or optional criteria that could be satisfied to gain approval for more density than would be permitted based on the project's location alone.

Each base criterion in the Density Chart (criteria a-j) was assigned a maximum number of percentage points that could be achieved when every proposed dwelling unit was located within a specified distance of a planned or existing facility or land use. For example, a 20 percent credit toward the total number of permitted dwelling units was given if all the units were located within 2,000 feet of an existing or approved neighborhood shopping center. A 20 percent credit was also awarded when all units were located within 3,000 feet of a major employment center. If only a portion of the proposed units were within the specified distance, the credit awarded was reduced proportionately. Thus, the total credit a project could achieve by satisfying the criteria in this section of the density chart was determined entirely by its location.

The distances used in these standards were based on reasonable walking distances between developments and other uses or facilities. Of course, minimum distances in some cases—for example, between a proposed development and regional shopping or an employment center—might have exceeded reasonable walking distances, but were calculated to require only short automobile trips.

The number of allowed dwelling units per acre was determined by totaling up the credits awarded for each base criterion that was satisfied. Earning 30 to 40 percentage points, for instance, allowed for 3 to 4 dwelling units per acre; 40 to 50 percentage points permitted 4 to 5 dwelling units per acre; and so on, up to 100 or more percentage points, which allowed a proposed density of 10 or more dwelling units per acre. However, if the total number of credits awarded for location did not support the proposed level of density, the development could make up the difference by satisfying various bonus criteria. For example, bonus credit was given for including low-income housing in residential development (criterion q) and for including housing for the handicapped (criterion r). Additional points could also be earned when the development covered 50 acres or more and when it could be demonstrated that the design of the project reduced the use of nonrenewable energy.

The Guidance System's use of variable criteria to

Exhibit D. Point Chart for Variable Criteria; Fort Collins, Colorado.

NEIGHBORHOOD SERVICE CENTER				POINT CHART B			
For All Criteria				Applicable Criteria Only			
Criterion	Is The Criterion Applicable		Circle The Correct Score		Multiplier	Points Earned 1x11	Maximum Applicable Points
	Yes	No	Yes	VW* No			
	a. Transit route	X		X			
b. At collector/arterial	X		X	2 0	3		6
c. "North" Fort Collins	X		X	2 0	2		4
d. From regional center	X		X	2 0	1		2
e. From neighborhood center	X		X	2 0	2		4
f. S. College corridor	X		X	2 0	4		8
g. Non-arterial access	X		X	2 0	3		6
h. Joint parking			1	2 0	3		
i. Grocery store	X		X	2 0	3		6
j. Energy conservation	X		1	2 0	4		8
k. Contiguity	X		X	2 0	5		10
l. Historic preservation			1	2 0	2		
*VW — Very Well Done						Totals	
						V	VI
Percentage Earned of Maximum Applicable Points						$\frac{VI}{VII} = \frac{VI}{VII} \%$	

Source: Fort Collins, Colorado, Land Development Guidance System for Planned Unit Developments, April, 1982, p. 15.

Exhibit E. Variable Criteria to Determine Maximum Density; Fort Collins, Colorado.

DENSITY CHART					
BASE	Criterion	Maximum Credit	If All Dwelling Units Are Within:	Earned Credit	
	a	20%	2000 feet of an existing or approved neighborhood shopping center.		
b	10%	650 feet of an existing transit stop.			
c	10%	4000 feet of an existing or approved regional shopping center.			
d	20%	3500 feet of an existing or reserved neighborhood park, community park or community facility.			
e	10%	1000 feet of a school, meeting all the requirements of the compulsory education laws of the State of Colorado.			
f	20%	3000 feet of a major employment center.			
g	5%	1000 feet of a child care center.			
h	20%	"North" Fort Collins.			
i	20%	The Central Business District.			
j	30%	A project whose boundary is contiguous to existing urban development. Credit may be earned as follows: 0% — For projects whose property boundary has 0 to 10% contiguity. 10 to 15% — For projects whose property boundary has 10 to 20% contiguity. 15 to 20% — For projects whose property boundary has 20 to 30% contiguity. 20 to 25% — For projects whose property boundary has 30 to 40% contiguity. 25 to 30% — For projects whose property boundary has 40 to 50% contiguity.			
BONUS	k	If it can be demonstrated that the project will reduce non-renewable energy usage either through the application of alternative energy systems or through committed energy conservation measures beyond that normally required by City Code, a 5% bonus may be earned for every 5% reduction in energy use.			
	l	Calculate a 1% bonus for every 50 acres included in the project.			
	m	Calculate the percentage of the total acres in the project that are devoted to recreational use, enter 1/2 of that percentage as a bonus.			
	n	If the applicant commits to preserving permanent off-site open space that meets the City's minimum requirements, calculate the percentage of this open space acreage to the total development acreage, enter this percentage as a bonus.			
	o	If part of the total development budget is to be spent on neighborhood public transit facilities which are not otherwise required by City Code, enter 2% bonus for every \$100 per dwelling unit invested.			
	p	If part of the total development budget is to be spent on neighborhood facilities and services which are not otherwise required by City Code, enter a 1% bonus for every \$100 per dwelling unit invested.			
	q	If a commitment is being made to develop a specified percentage of the total number of dwelling units for low income families, enter that percentage as a bonus, up to a maximum of 30%.			
	r	If a commitment is being made to develop a specified percentage of the total number of dwelling units for Type "A" and Type "B" handicapped housing as defined by the City of Fort Collins, calculate the bonus as follows: Type "A" — 5 times $\frac{\text{Type "A" units}}{\text{Total units}}$ Type "B" — 1.0 times $\frac{\text{Type "B" units}}{\text{Total units}}$ In no case shall the combined bonus be greater than 30%.			
	s	If the site or adjacent property contains an historic building or place, a bonus may be earned for the following: 3% — For preventing or mitigating outside influences (e.g. environmental, land use, aesthetic, economic and social factors) adverse to its preservation. 3% — For assuring that new structures will be in keeping with the character of the building or place, while avoiding total units. 3% — For proposing adaptive use of the building or place that will lead to its continuance, preservation and improvement in an appropriate manner.			
	t	If a portion or all of the required parking in the multiple family project is provided underground, within the building, or in an elevated parking structure as an accessory use to the primary structure, a bonus may be earned as follows: 9% — For providing 75% or more of the parking in a structure, 6% — For providing 50-74% of the parking in a structure, 3% — For providing 25-49% of the parking in a structure.			
	u	If a commitment is being made to provide approved automatic fire extinguishing systems for the dwelling units, enter a bonus of 10%.			
TOTAL					

Source: Fort Collins, Colorado, Land Development Guidance System for Planned Unit Developments, April, 1982, p. 30.

regulate density allowed for much higher density than had been permitted under the former requirements for PUD. For example, in some areas of the city where only six dwelling units per acre had been allowed under the old requirements, projects of 14 to 19 dwelling units per acre were approved under the Guidance System. Some of these higher density projects were built in single-family detached districts, adjacent to large-lot single-family homes. Under the Guidance System, residential development was also occurring near or adjacent to uses that had once been considered incompatible with residential development.

Fine-Tuning the Guidance System. In addition to providing for greater citizen participation early in the review process, one other significant revision has occurred since enactment of the system in 1981. In the original design of the system, some of the criteria that were later categorized as absolute criteria had been classified as variable criteria. For example, criteria relating to site design, resource protection, and some public services and facilities had been variable criteria. Development proposals had not been required to fully satisfy each and every criterion, but rather had to earn only a specified total number of points based on the overall performance of the proposal. For example, under the 1981 review process, a project could have done a poor job of providing either private outdoor areas or an adequate pedestrian circulation system and still would have been approved if other features of the project were better designed. The reason for originally making these criteria variable, which let the developer decide how much attention would be devoted to each criterion, had been to allow design flexibility.

Under the revised provisions, however, all criteria related to building and site design, resource protection, and public services and facilities had to be fully satisfied to gain approval. According to staff, this change did not have a significant impact on the overall flexibility of the system. The developer still decided how each criterion would be met. The key concern of review staff was whether the developer's proposed arrangement of buildings, open space, and circulation systems adequately satisfied the established criteria.

Projects

An examination of several of the projects approved or built under the Guidance System revealed that the system allowed for substantial reductions in development costs and, consequently, provided for more affordable housing. In most cases the system permitted densities considerably higher than what had been allowed under prior requirements for PUD. This was especially the case in two of the multifamily developments that are examined below—the Cottonwood development, built at nearly 15 units per acre or more than twice the density allowed under the old standards, and the Gables development, which was built at 15.2 units per acre. The new density bonuses allowed the developer of the Gables to build 86 more units than

had been permitted under the city's conventional PUD requirements. One single-family detached project—Redwood Village—that had been approved at the time of the study is also briefly discussed, along with another multifamily project—Overlook—that took advantage of the density bonuses allowed by the system.

Cottonwood

This mixed-use development, by T. D. Murphy, Inc., of Fort Collins, contained 188 multifamily rental units. When completed it will also include about 14,000 square feet of office and retail space. (See Figures 25 and 26.) It was located in a substantially built-up section of the city, which was surrounded by a mix of development, including industrial, commercial, multifamily, and single-family detached development. The land to the north of the development was planned for single-family detached development.

The project was developed at nearly 15 units per gross acre. Under the old PUD requirements, this parcel would have been limited to a density of six units per gross acre, or about 112 fewer units. The project's developer noted that at six units per gross acre, the project would not have been economically feasible. The developer estimated that the increased density resulted in about a 40 percent savings in land and site development costs. Additional savings were realized by the use of 24-foot private driveways. The developer noted that the use of conventional curbs, gutters, and public rights-of-way in this development would not only have increased development costs considerably, but would have called for a vastly different site plan and resulted in much lower density.

One of the first projects approved under the Guidance System, Cottonwood was allowed 255 units based on staff analysis of the proposal. The developer, however, chose to remain with fewer units because he believed that a lower density was best suited to this site and would appeal to the market that he was trying to reach. Once again, as was the case in several other projects examined in this study, the developer opted to build to his perception of what the market wanted, rather than to minimum standards.

The developer of Cottonwood was able to gain approval of the density he desired because of the favorable location of the project. This project received a nearly perfect score for location. Staff review of the proposal found that this development was located within 2,000 feet of a neighborhood shopping center; 650 feet of an existing transit stop; 4,000 feet of an existing regional shopping center; 3,500 feet of an existing neighborhood park without crossing an arterial street; 3,000 feet of a major employment center; and within 1,000 feet of a child care center. The project also received bonus points for containing common open space for active recreational use.

While in most respects the location of this development was ideal, local residents had some concerns. Some existing property owners, for example, believed that this project, given the type of

Figure 25. Cottonwood Development, Fort Collins, Colorado.

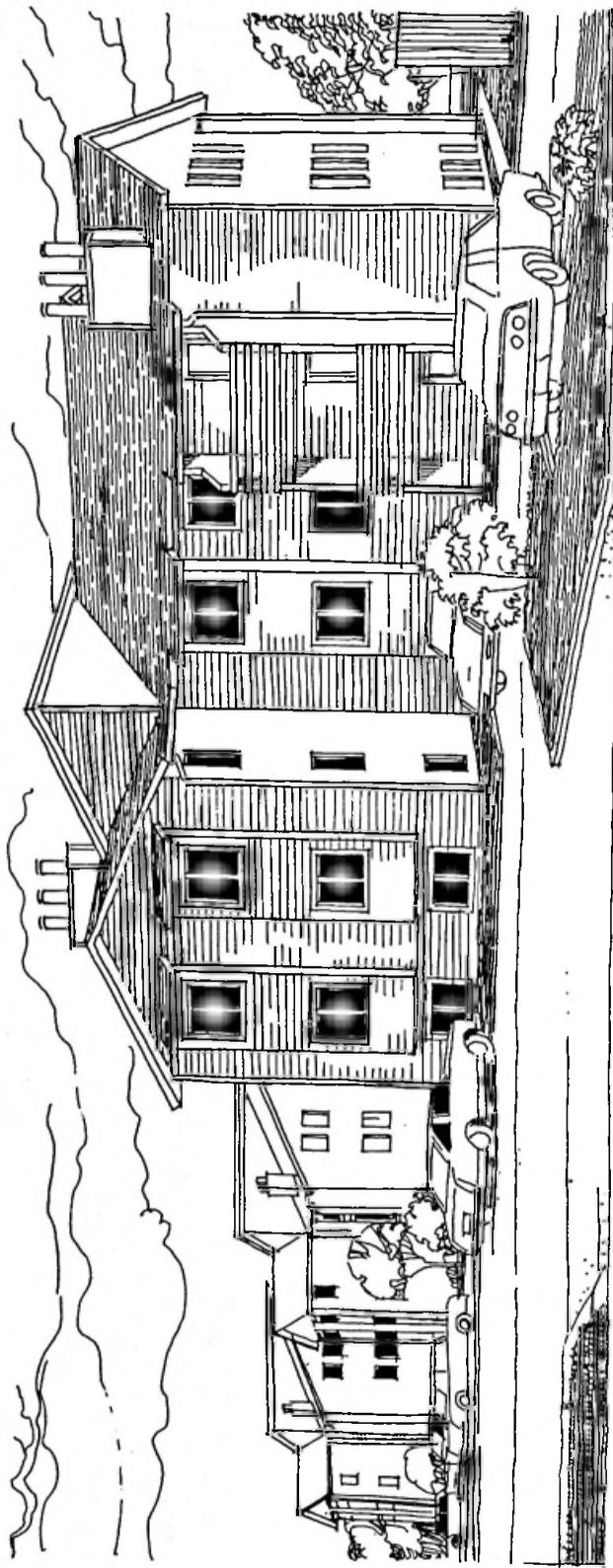
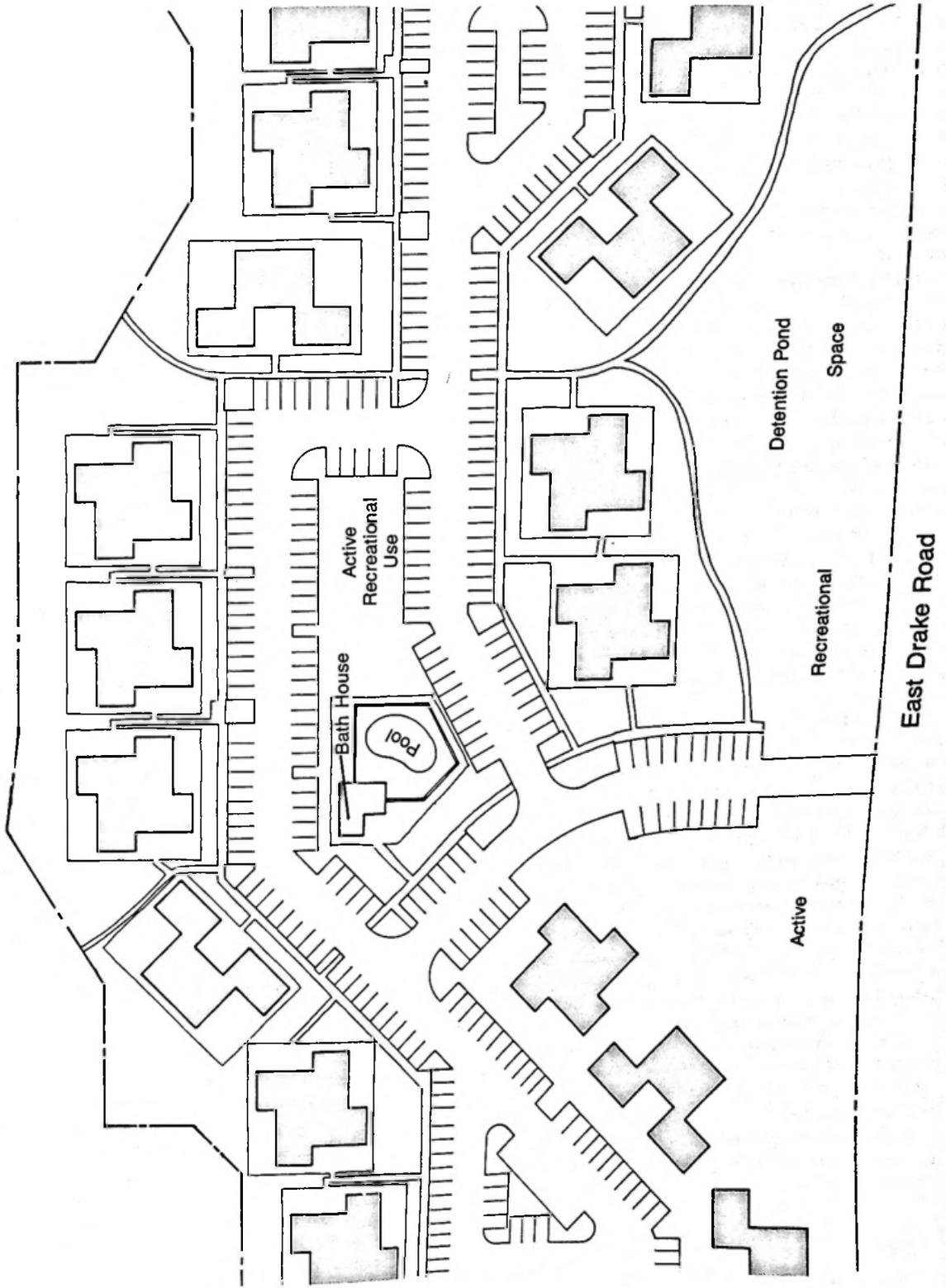


Figure 26. Portion of Site Plan (Residential Phase), Cottonwood Development, Fort Collins, Colorado.



housing and the level of density proposed, would adversely affect traffic in the area. They also questioned the compatibility of the two-and-one-half-story multifamily buildings with nearby existing and planned single-family detached units. Since this development had been approved before the system was revised, an informal meeting with residents of the immediate neighborhood had not been required at the conceptual review stage. These concerns were not considered until after the plans for the project were reviewed at a public hearing. Under the revised provisions of the Guidance System, these differences would have to be resolved at the outset of the development proposal or the developer would not be allowed to proceed with the project. In response to the property owners, the developer was required to modify the traffic circulation pattern proposed in his site plan.

To address the concerns about compatibility, a shadow analysis was conducted by the developer. This study indicated that either the height of the buildings nearest the single-family development had to be reduced or greater setback had to be allowed between the two uses. The developer opted to reduce the height of the buildings near the single-family development from two-and-one-half stories to two stories, the same height limit as that of the adjacent single-family development. By reducing the height of the multifamily buildings to that of the single-family units, the developer was able to use a 35-foot setback between existing and planned single-family development, thus meeting the standard for building separation that was typical in single-family development. Some units were lost by reducing height, but if a greater setback had been used, more units would have been lost, and possibly a few buildings.

In spite of the compromises that had to be made, the developer of Cottonwood expressed great satisfaction with staff review and approval of this project. He noted that considerable time had been saved because rezoning was not required under the Guidance System. More importantly, he pointed out that the system forced review staff to evaluate a proposed project in a manner similar to the way a developer evaluates or should evaluate a piece of land before it is purchased for a specific use. Like the developer, the review staff, using Guidance System criteria, evaluated the proposal in respect to its location relative to what existed in the immediate area—its proximity to shopping, transit, recreation, and so on—rather than its location relative to a rigid and often arbitrary classification on a zoning map. The developer also noted that the system's criteria made it possible for a developer to submit a proposal that had a good chance of approval as long as the development site was carefully selected and near these facilities.

The Gables

This project was the final phase of a PUD that was being built under the old PUD requirements. After enactment of the Guidance System, the developer, Jensen and Associates, Inc., of Fort Collins,

requested, and was granted, an amendment to the final PUD plan to allow this phase to be developed under the Guidance System. The original plan for the 14.2-acre site consisted of 94 units—20 single-family detached units and 74 townhouses. Under the Guidance System, this same parcel could be developed at nearly twice the original density—that is, at over 15 units per gross acre. This multifamily development finally contained 180 units for sale, averaging 1,080 square feet each in eighteen 10-plex buildings. (See Figures 27 and 28.) The development also contained 36 "carriage house" units that averaged 552 square feet and were placed over garage clusters. (See Figure 29.) These for-sale units were similar to coach houses.

The developer estimated that increased density allowed for a savings in the land and development costs of nearly \$2,000 per unit. He also pointed out that, under the Guidance System, staff review only took three months, rather than the six to nine months that had been typical in the past for PUD reviews. The developer believed that this reduction in review time could be attributed, in part, to the specific review criteria that the Guidance System used to evaluate projects. The review criteria served to expedite negotiations between developer and staff, and in turn, reduced the time it took to gain approval. While the developer could not place any exact dollar amounts on what was saved, he believed that his carrying costs were substantially reduced by the shorter review period. Given his savings, the developer pointed out that he could have set unit prices even lower than the \$41,000 to \$70,000 range he settled on. He opted instead to use some of the money saved for more landscaping and amenities than were usually not found in developments at this price range.

Unlike the Cottonwood development, The Gables was reviewed under the revised Guidance System that required the developer to meet with citizens early in the review process. This, in the opinion of the developer, turned out to be a better way of handling neighborhood concerns. Meeting with citizens before the final plans had been drawn allowed for a more expedient review process, and permitted the developer to demonstrate that his site plan accommodated most of the concerns of local residents.

One issue that may not have been resolved to the satisfaction of some residents, however, was the inclusion of the small carriage house units in this project. These units sold for about \$30,000 less than the standard two-bedroom units in the 10-plex buildings and were about half the size of the larger units. Nearby residents feared that these less expensive units would make the project have an adverse impact on the value of existing property. In defense of the lower-priced units, the developer argued that they allowed individuals who were otherwise priced out of the development to buy a home there. Staff sided with the developer, arguing that the inclusion of these units was clearly consistent with the objectives of the city's Land Use Policies Plan. In their report on the review of the project, staff noted that in spite of the lower cost of

Figure 27. Gables Development, Fort Collins, Colorado.

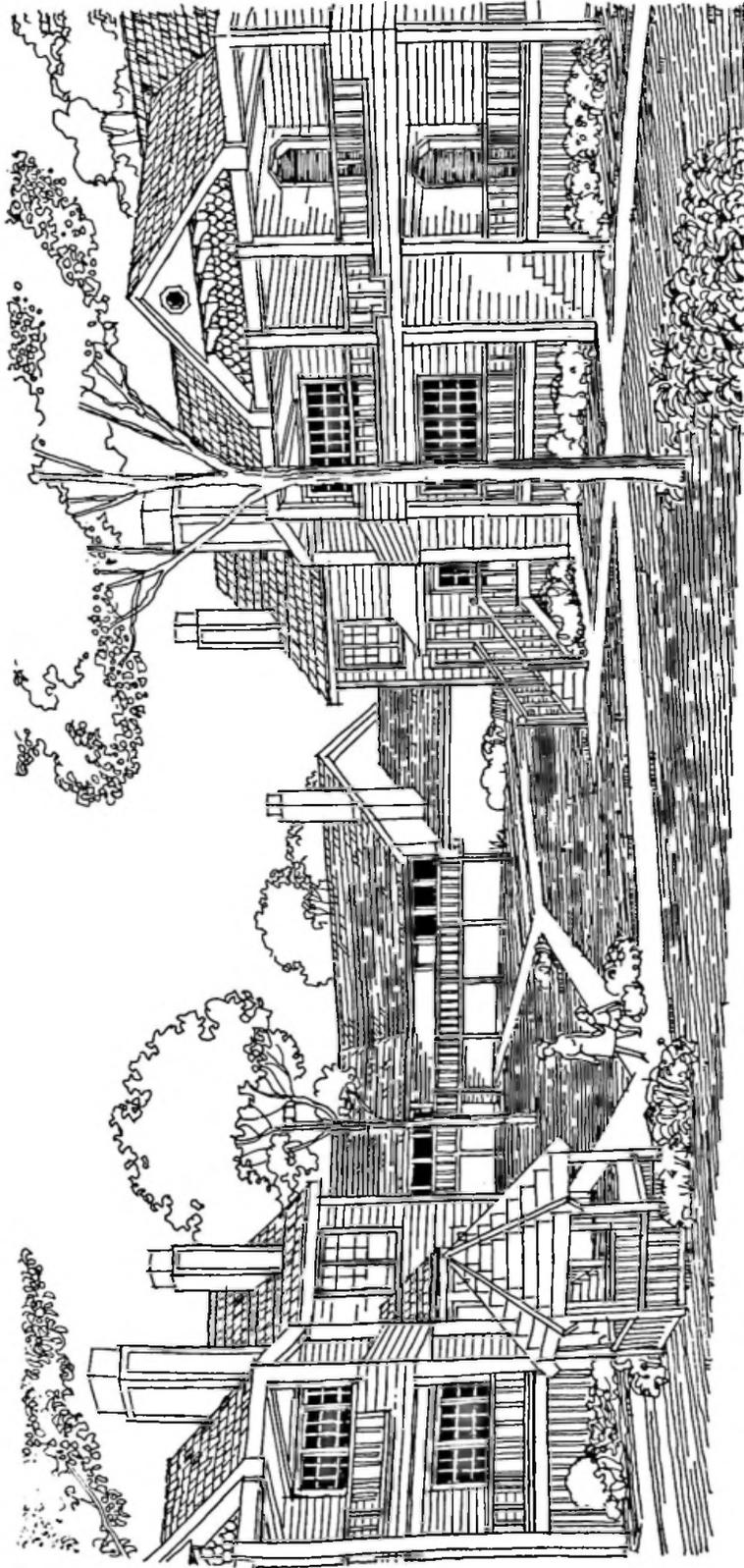


Figure 28. Portion of Site Plan, Gables Development, Fort Collins, Colorado.

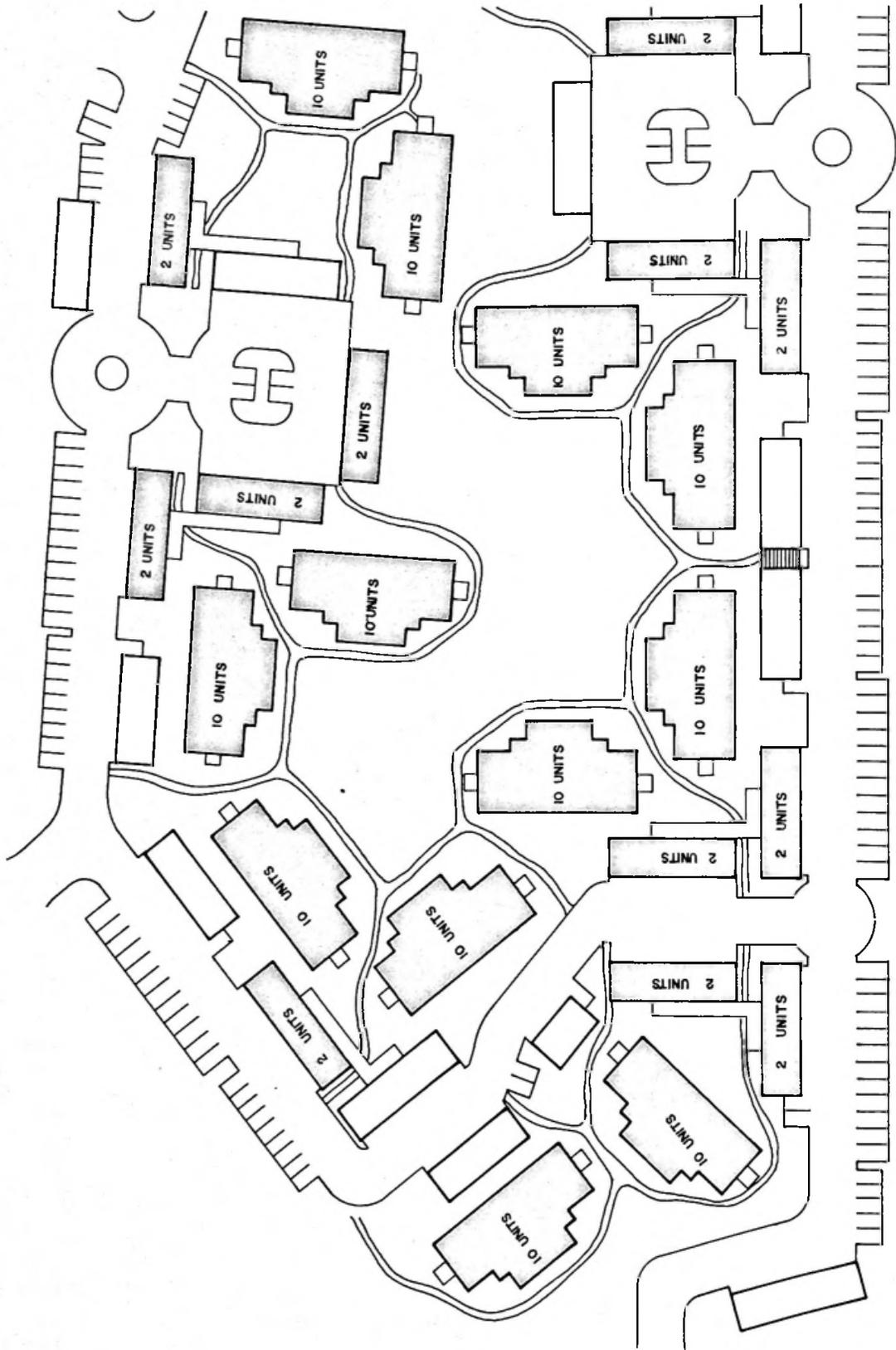
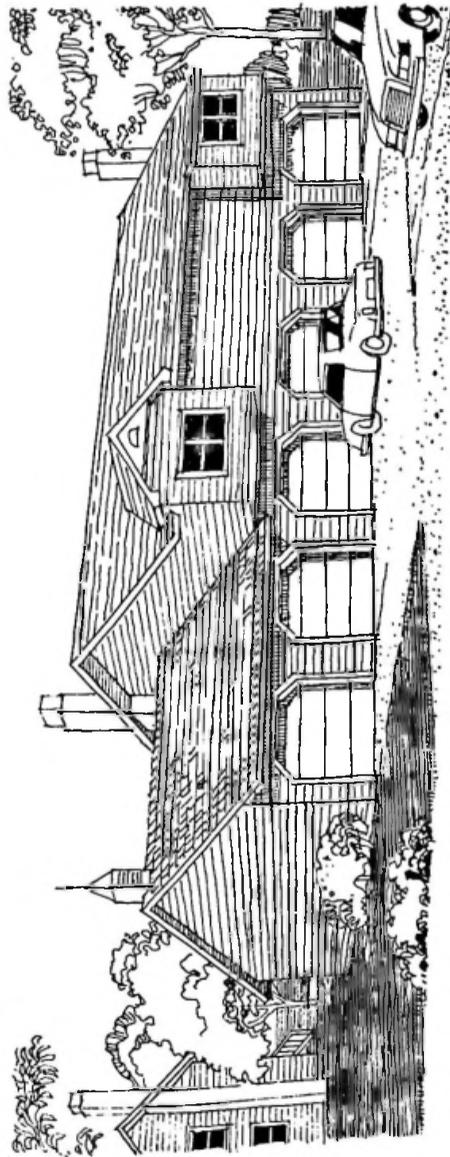
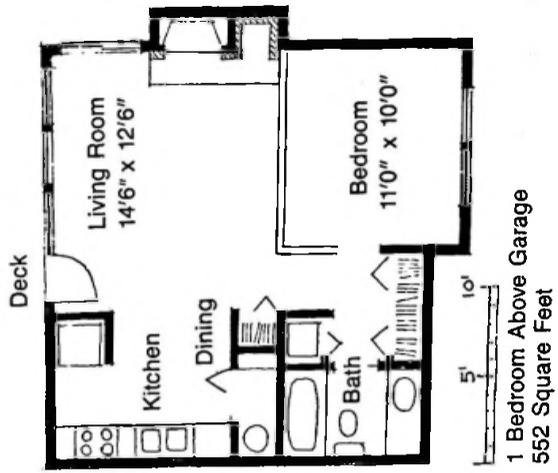


Figure 29. Carriage House, Gables Development, Fort Collins, Colorado.



the units, the style and design of the units were compatible with the previously built units in this PUD, which had been quite popular.

Location again was the chief factor in the developer's ability to gain approval for the level of density he desired. The Gables received the maximum credit allowed for its proximity to a transit stop, a neighborhood park, a school, a major employment center, a child care center, and existing urban development. The project also received partial credit for its location near a neighborhood shopping facility.

Redwood Village and Overlook

The Guidance System's ability to allow for more affordable housing was also evident in other projects; two are worth noting here. Construction had not begun on these projects at the time of APA's field visit to Fort Collins; nevertheless, they deserve attention because they illustrate further what can be developed under the system's requirements. One approved project, Redwood Village, was a manufactured housing project, and the other, Overlook, would contain conventionally built units for low-income families and the handicapped.

Redwood Village was a 235-unit single-family detached housing development on a 43-acre site. This site had originally been approved in 1978 under conventional development standards for 102 single-family detached homes. As approved subsequently under the Guidance System, the project's density more than doubled from 2.4 units per gross acre to over five units per acre, and the type of homes planned for inclusion in the project was changed from stick-built to prefabricated units that ranged in size from 960 square feet to 1,680 square feet. This increase in density and use of a less expensive building technique meant substantial reductions in land development costs and more affordable housing. Local officials pointed out that under previous development requirements it had been difficult to approve this level of density. Similarly, the use of prefabricated housing would probably not have been allowed in this predominantly single-family detached housing area.

The Overlook development, a 72-unit multifamily project, was to include 12 units for low-income families and three units that were designed for handicapped individuals. Including these 15 units in this rental project gave it nearly a fourth of the total credits needed to receive approval for a density of over 30 units per acre. Under conventional PUD requirements, the maximum density allowed had been only 12 units per acre. This project was a good example of how density can be substantially increased under the Guidance System and how the incentives in the system encouraged the inclusion of special types of housing in projects that were otherwise not provided.

How the Guidance System Performed

Local officials and nearly every developer that APA interviewed agreed that the Guidance System, at the very least, was an improvement over the way PUDs

had been regulated in the past. Some developers believed that the system was too complex, but most felt that the complexity was manageable. Administrative guidelines were prepared to clarify those criteria that developers had difficulty understanding. As problem areas were identified in the system, local officials planned to develop further guidelines for proposal review and approval. For example, staff, at the time of the APA visit, were developing guidelines to clarify the city's requirements for public streets.

Both local officials and developers agreed, however, that the Guidance System provided considerably more flexibility and significantly higher densities than what had been offered under the old requirements, and resulted in substantial reductions in land development costs and more affordable housing. High-density residential development was also occurring under the Guidance System in areas where it had not been allowed under the old standards.

It is clear that the density bonuses built into the Guidance System encouraged the inclusion of certain desirable types of facilities and housing in new development. Local officials noted that developers included facilities like day care centers, housing for the handicapped, and low- and moderate-income families in developments that would not have been likely to include them under the previous development system. In addition, the bonus system encouraged development near facilities like shopping and transportation, thus minimizing automobile use and saving energy.

Although only one single-family detached housing project had been proposed and approved under the Guidance System at the time of APA's visit to Fort Collins in the summer of 1983, local staff believed that as developers became more aware of the opportunities that existed under the system for innovative, small-lot single-family detached housing, they would make greater use of the system to build this type of housing. Local officials, however, also believed that their conventional requirements for single-family detached housing were reasonable and allowed most developers that specialize in this type of housing to build to their markets without severe constraints. Under conventional development standards in Fort Collins, the minimum lot size permitted was 6,000 square feet and minimum frontage was 60 feet. These minimums were not much greater than those used in a number of the small-lot projects discussed in other sections of this report.

According to staff, another reason why all but one of the projects proposed under the Guidance System were multifamily was because this type of housing allowed the developer to take full advantage of the high density that the system permitted. They also noted that the attached and multifamily housing markets in Fort Collins were very strong. This was due primarily to the city's large number of young couples and single people.

What kind of community is best suited for the Guidance System approach? At first glance, the Guidance System may appear to be too complex for most communities. Under the Guidance System, a

residential project had to satisfy 44 different criteria related to building and site design plus a number of other criteria to achieve its proposed density. However, it is apparent that many of these same criteria are used in development review in order to make an intelligent decision for approval or rejection. Most communities already consider many of these aspects of a development proposal under PUD provisions, but do not spell them out in their ordinance. The Guidance System, on the other hand, attempted to list nearly every possible criterion that staff used in reviewing a development proposal. The idea of spelling out the criteria that were used in Fort Collins' review and approval process appears to be a good one, and may make the development review process in other communities more consistent and more predictable.

The Guidance System differed greatly, however,

from more conventional approaches to PUD in the way it handled density and the location of new development; the system did not place a cap on density or predetermine the location of new development. These were the two features of the Guidance System that most communities still believe should be strictly regulated.

If a community's sole objective for changing its development standards is to allow for more affordable single-family housing, one of the approaches outlined in the other sections of this report may be sufficient. If, on the other hand, a major overhaul of the system is in order and the community has the political support to try something new, then a flexible, performance-oriented system like the Fort Collins Guidance System will offer many ideas.



Appendix A.

Excerpts of Provisions for Small-Lot Development from Local Zoning Ordinances

San Antonio, Texas
Section 42-68.2

R-7 District—Small-Lot Home District

SECTION 42-68.2. R-7 DISTRICTS, SMALL-LOT HOME DISTRICTS.

A. The R-7 small-lot home district is comprised of single-family dwellings which reflect a somewhat different character from that found in R-1 and R-5 zones. Small-lot homes are constructed in a manner which allows attachment of no more than two (2) dwelling units. Further, small-lot homes may be sited on smaller lots than those permitted under the R-1 and R-5 classifications. R-7 developments shall, however, be placed so as to be compatible with adjoining lot sizes and densities, and not create an anomaly in the area. Each dwelling in the R-7 district shall be located on a separate lot, front onto a public street, and comply with the following specifications:

(1) *Front Yard.*

- a. Off-street parking provided to the front of the dwelling (front vehicular access). Where off-street parking is provided to the front of the structure, the minimum front-yard setback shall be twenty (20) feet, unless the developer elects to stagger the setback. Should that option be chosen, then within any ten consecutive lots at least one-third are set back between fifteen (15) feet and seventeen (17) feet; another one-third between eighteen (18) feet and twenty (20) feet; and the remaining one-third between twenty-one (21) feet and twenty-three (23) feet. A development of less than ten (10) lots would maintain the same setback proportions. Regardless of the setback, however, a front entry garage shall have a minimum of twenty (20) feet between the private garage/carport and the front property line.

- b. Off-street parking provided to the rear of the structure (rear vehicular access). Where all off-street parking and access is provided to the rear of the structure, the minimum front-yard setback shall be fifteen (15) feet unless staggered setbacks are used. In the latter instance, setbacks should be staggered such that within any ten consecutive lots at least one-third are set back between ten (10) feet and twelve (12) feet; another one-third between thirteen (13) feet and fifteen (15) feet; and another one-third between sixteen (16) feet and eighteen (18) feet. Again, a development of less than ten lots should maintain the same setback proportions. When off-street parking is provided to the rear of the residence, vehicular access to the property must be through a twenty-four-foot (24') paved alley.

(2) *Side Yard.*

Side-yard setbacks shall be a minimum of zero (0) feet on one side and ten (10) feet on the other, or five (5) feet on each side. No more than 25% of the lots on any block shall be permitted five-foot side-yard setbacks. Each corner lot shall have a side-yard setback of at least five (5), or ten (10) feet if the dwelling has a zero setback on the other side; except that in the case of reversed frontage, a side-yard equal, at least, to the depth of the front-yard setback of a structure fronting the side street shall be required. In no case, however, shall a combination of setbacks (i.e., 0'+10' and 5'+5') be allowed which would create a separation of less than ten (10) feet between nonattached structures. Excepting public utility equipment, such setbacks must be kept free of permanent aboveground man-made obstructions. Where small-lot home development abuts a lot not in an R-7

district, the side yard shall be at least five (5) feet (e.g., the zero setback shall not be in the side adjoining the non R-7 district). Provision shall be made for continuing maintenance easements on the lots adjacent to the zero lot line. This will allow property owners access to the adjacent property for the purposes of maintaining their structure on the zero lot line.

(3) *Rear Yard.*

- a. Where off-street parking is located in the front of the structure the minimum rear-yard setback shall be twelve (12) feet, with a minimum of one thousand two hundred (1,200) square feet of contiguous open space between the front building setback line and the rear property line.
 - b. Where all vehicular access and off-street parking is provided to the rear of the structure the minimum rear-yard setback shall be five (5) feet from the property line, with a minimum of one thousand (1,000) square feet of contiguous open space between the front building setback line and the rear property line.
 - c. Where rear loading is utilized, all rear- and side-yard fences shall be flared if necessary to eliminate visual obstructions for vehicles entering the alley from a private garage/carport.
- B. *Minimum Area Requirements:* Four thousand two hundred (4,200) square feet.
- C. *Maximum Height:* Two (2) stories or twenty (20) feet.
- D. *Parking:* A minimum of two (2) off-street parking spaces, excluding the private garage/carport, shall be required for each dwelling unit.
- E. *Firewalls:* All dwellings constructed on zero (0) lot lines must be provided with a firewall as set out in the building code of the City of San Antonio.
- F. *Setback Restrictions:* At the time of the application for the building permit the permit applicant shall indicate on the application what the front-, side-, and rear-yard setbacks shall be. If staggered front setbacks, or five (5) foot side-yard setbacks, are used, the applicant shall note on the application form that they do not exceed the limitations established within this section.

SECTION 36-19.2.

SMALL-LOT HOME SUBDIVISIONS.

Small-lot home subdivisions are allowed with a minimum lot area of four thousand two hundred (4,200) square feet, and a minimum width of forty-two (42) feet. Each lot shall front onto a public street and shall meet the setback requirements found in section 42-68.2 of the City Code. These subdivisions should be compatible with adjacent lots and subdivisions, and should be located with consideration given to the densities of neighboring

areas in accordance with good planning principles. The description "Small-Lot Subdivision" shall be prominently indicated on the subdivision plat.

If zero lot lines are utilized adjacent to a ten-foot side-yard setback, a minimum five (5) foot wide maintenance easement shall be provided through deed restrictions on the adjacent lot. This easement shall be kept free of permanent above ground obstructions such as portable toolsheds or a fence without a gate.

When small-lot home subdivisions are platted, the subdivider shall provide the city with two (2) copies of the deed restrictions establishing the maintenance easement(s). If the development is in the extraterritorial jurisdiction (ETJ), the deed restrictions shall further include provisions for setback specifications which shall be the same as those set out in section 42-68.2 of the City Code. One copy of these deed restrictions shall be recorded by the city at the time of plat recordation. A fee, apart from the plat recording fee, shall be provided to the city by the subdivider to cover the costs of recording the deed restrictions. When area lot lines are being utilized, and maintenance easements are required by this section, the following annotation shall appear on the plat:

"_____foot wide maintenance easement(s) are established within the lots adjacent to all nonattached zero lot lines. Such easements shall extend for the depth of the lot and are included in the deed restrictions for all affected properties."

For lots platted within the ETJ of the City of San Antonio, the following annotation shall also appear on the plat:

"A copy of the required restrictions will be filed in the Plat and Deed Records of _____ County on the same date as this plat."

Riverside County, California
Article VIII(f)
R-6 Zone (Residential Incentive)

SECTION 1. INTENT. The Housing Element of the Riverside County General Plan has identified the need for affordable housing as one of the most significant housing problems in the County of Riverside. It is the intent of the Board of Supervisors in enacting the R-6 Zone to establish a specialized zone that will, through incentives and consideration of a specific housing proposal in connection with a proposed zone change, facilitate construction of affordable housing. Pursuant to the Housing Element, the density of a project shall be determined by the physical and service constraints of the parcel being considered, during the hearing process, and may exceed the density permitted for standard projects by the Land Use Element.

The Board finds and determines and declares that it is its intent that the R-6 Zone classification be used and applied in areas where basic services such as water, sewer, other utilities, and adequate road

circulation already exist or can be reasonably extended. The Board further determines that the R-6 Zone classification shall be applied to a specific geographic area only in conjunction with an approved plan for development, including any necessary land division maps, plot plans or other approvals, as required by the County, and that applications for the R-6 Zone and related projects are to receive priority processing by all County departments involved in the review and issuance of permits for the development.

The Board further determines that when the R-6 Zone classification is applied to a specific area, it shall be used only for the construction of the project approved in connection with the granting of the zone classification, or for a project that is thereafter specifically approved by the Board as an affordable housing project to replace the previously approved project. This requirement shall not prohibit the County from allowing nonsubstantial changes in an approved development plan that becomes necessary in the actual engineering of a project, provided that such changes shall not increase the density of an approved project.

SECTION 2. USES PERMITTED. The following uses are permitted upon approval of a project in accordance with the provisions of this Article:

- (a) One-family dwellings, including mobile homes on permanent foundations;
- (b) Two-family dwellings and multiple family dwellings;
- (c) Planned residential developments;
- (d) Apartment houses;
- (e) Accessory buildings, provided there is a main building on the lot;
- (f) Home occupations;
- (g) Temporary real estate offices located within a subdivision, to be used only for and during the original sale of the subdivision;
- (h) Community recreation facilities as part of a development.

SECTION 3. BASIC REQUIREMENTS FOR SALES UNITS. All developments shall comply with one of the following requirements in subsection (a), (b), or (c), and with subsection (d):

- (a) The average selling price of the dwelling units shall not exceed 80% of the average home sales price in a market area. The market area and average home sales price shall be determined by the Board of Supervisors, or
- (b) The selling price of 25% of the dwelling units shall be at an amount affordable to families earning no greater than 120% of the County median income, as determined by the Board of Supervisors, or
- (c) The selling price of 15% of the dwelling units shall be at an amount affordable to families earning no greater than 80% of the County median income, as determined by the Board of Supervisors.
- (d) If a development is benefitted, directly or

indirectly, through the use of governmental funds for site acquisition, extension of basic services or roads, or other expenditures that assist the development, the sales price determined pursuant to subsections (a), (b), or (c) of this section may be reduced by the Board of Supervisors.

SECTION 4. DEVELOPMENT STANDARDS. The following standards of development shall apply in the R-6 Zone.

- (a) The allowable density of a project will be determined by the physical and service constraints of the property and the area in which the property is located; however, the density of each approved development must exceed four units per gross area.
- (b) The minimum lot area for single-family detached developments shall be 3,600 square feet, except that minimum lot areas may be reduced to 2,500 square feet as part of a zero lot line attached unit project.
- (c) Lots shall have a minimum frontage of 30 feet except that minimum frontage may be reduced on knuckles and cul-de-sacs or as part of an approved zero lot line attached unit housing project.
- (d) A minimum of 30% of each lot's net area in a single-family development shall be designed for usable open space. Usable open space shall be defined as those portions of the site not encumbered by a structure. The net lot area is defined as the total area contained within the property lines. Side-yard setbacks shall be approved as part of the design of the project. Setbacks for garages that open parallel with the access way shall not be less than 20 feet.
- (e) A minimum of 20% of the net lot area for apartment developments shall be in usable open space. Minimum front- and rear-yard setbacks shall be 10 feet. Additional setbacks, including side yards, may be required depending on the height of the structure and adjacent land uses. All apartment projects shall contain at least four dwelling units. No application for conversion of an apartment building to condominiums or any other form of cooperative or units that may be sold individually, shall be accepted by the Planning Director, unless the matter has first been presented to and approved by the Board of Supervisors as being consistent with the intent and purpose of the original approval of the project to provide affordable housing.
- (f) One-family residences shall not exceed 35 feet in height. All other uses shall not exceed 50 feet in height.
- (g) One off-street parking space shall be required for each dwelling unit, notwithstanding the apartment building

parking standards contained in Section 18.12 of this ordinance.

- (h) Open space or recreational facilities proposed in a project shall be subject to approval of the County.
- (i) Streets providing a circulation within a development shall be constructed to a minimum width of 36 feet within a 56-foot right-of-way for major interior streets and a minimum width of 32 feet of improvements within a 50-foot right-of-way for minor interior streets and cul-de-sac streets. All improvements to be in accordance with the improvement standards of Ordinance 461.
- (j) Design standards, dedications, and improvements will be in conformance with the requirements of Ordinances No. 460 and 461, and as approved by the Road Commissioner, for all streets other than interior streets.

SECTION 5. APPLICATIONS.

- (a) Applications for the R-6 Zone shall be filed only in conjunction with an application for a land division pursuant to Ordinance No. 460, or an application for a plot plan pursuant to the provisions of this ordinance. Notwithstanding the provisions of State Law or County ordinance providing for different processing or time requirements for processing the various applications, an applicant, by filing an application for the R-6 Zone, shall agree that the two or more applications shall be considered together and that approval of a land division or plot plan shall not be final until the zone change has been granted and shall not be used until the zone change has gone into effect.
- (b) All applications shall include floor plans and elevations for each type of unit that is proposed to be constructed, and such additional information related to design or market area as may be required by the Planning Director.

SECTION 6. SPECIAL PROVISIONS.

- (a) The market area for a project and a tentative sales price or median income determination shall be made by the Board of Supervisors during the processing of the applications for the project.
- (b) The County, from time to time, by resolution of the Board of Supervisors, shall publish information relating to home sales price, market areas, and median income in the County of Riverside, which information shall be available to prospective applicants prior to filing an application for a project.
- (c) The final determination of the home sales price or median income for a specific project shall be made at the time of issuance of building permits for the project, provided, however, that amount shall not be less than

the tentative amount determined during the processing of the applications. The determination shall be made by the Board of Supervisors upon the recommendation of the Planning Director, which shall be initiated by application of the developer coordinated with the request for building permits.

- (d) At the time of recordation of the final map, a Declaration of Covenants, Conditions, and Restrictions approved by the County, shall be recorded that establish the affordability criteria for the development, including, but not limited to, structure size and type, and reference to the method for fixing the sales price for units in the development.
- (e) In the furtherance of the intent that the R-6 Zone be used only for the construction of affordable housing, the Declaration of Covenants, Conditions, and Restrictions shall prohibit the sale of lots without dwelling units sold on or constructed thereon in conjunction with the sale of the lot; provided, however, this shall not prohibit the sale of an entire tract, or an approved unit thereof, for construction of the units by the purchaser thereof.

REQUIRED FOR R-6 ZONE APPLICATION:

1. Complete tract map, parcel map or plot plan application, as appropriate.
2. Completed zone change application.
3. Completed Environmental Assessment.
4. Identification of location of all basic services (water, sewer, all utilities and roads) in relationship to site.
5. Expected selling prices of units, and pricing option selected. If pricing option (a) is selected, the relevant market area and average home sales price therein should be stated and documented.
6. Statement of direct or indirect benefits obtained or expected through the use of government funds.
7. Clear identification of the following:
 - a. Type of development proposed;
 - b. Density per gross acre;
 - c. Average lot size and minimum lot size;
 - d. Average front footage and minimum front footage;
 - e. Average percent of usable open space per lot, and minimum percent of usable open space;
 - f. Maximum height of highest building in the development;
 - g. Total number of dwelling units;
 - h. Total number of parking spaces;
 - i. Street widths.
8. Floor plans, elevations, and renderings for each type of unit proposed for construction.
9. Pre-application conference with Assistant Planning Director and Planning Staff.

AVERAGE SELLING PRICES

AREA	MAR.-SEPT.		JAN.-FEB.	
	1980		1981	
1	Average Selling Price:	\$ 70,703	\$	80,206
	80% Target:	56,562		64,165
2	Average Selling Price:	71,200		76,633
	80% Target:	56,960		61,306
3	Average Selling Price:	54,761		62,996
	80% Target:	43,809		50,397
4	Average Selling Price:	113,831		123,307
	80% Target:	91,045		98,646
5	Average Selling Price:	44,727		41,449
	80% Target:	35,782		33,159
COUNTYWIDE				
	Average Selling Price:	\$ 81,450	\$	88,231
	80% Target:	65,160		70,585
WESTERN COUNTY				
	Average Selling Price:	\$ 66,568	\$	75,488
	80% Target:	53,254		60,391

*Riverside County, California
Ordinance No. 348.2342
Restricted Single-Family
Subdivisions*

AN ORDINANCE OF THE COUNTY OF RIVERSIDE AMENDING ORDINANCE NO. 348 RELATING TO ZONING.

SECTION 2. Article VII of Ordinance No. 348 is amended by adding thereto a new section 7.11 to read as follows:

SECTION 7.11. RESTRICTED SINGLE-FAMILY RESIDENTIAL SUBDIVISIONS.

a. *Development Objective.* The development objective of this Section is to facilitate single-family residential subdivision projects which exhibit excellence in design and in the provision of housing opportunities through an integration of site planning, subdivision design, and housing development. It is envisioned that the site plans for these developments will be determined through a thorough analysis of a project site in terms of its constraints, opportunities, grading requirements, area characteristics, the requirements of the Riverside County General Plan, and other County ordinances governing the development of land.

Projects developed pursuant to this Section are expected to:

- (1) provide for placement of dwellings on individual lots so as to create variety in the street scene and to balance the distribution of height and bulk of individual dwellings relative to other dwellings and their location in the subdivision, and to provide for superior subdivision design and livability through the location and arrangement of lots, and in the

design of streets through the use of short cul-de-sac and/or curvilinear streets in preference to straight or rectangular grid interior street patterns;

- (2) provide for a basic level of usable and total open space, both on individual lots and throughout a subdivision, so as to meet the needs of project residents;
- (3) result in residential communities which offer a variety of housing opportunities and provide for diversity in design through careful attention to house designs, floor plans, street scenes, architecture, including the visual impact of garages and placement of mechanical equipment, fencing, and landscaping.

b. *Allowable Density.* The allowable density of a project will be determined by the physical and service constraints of the property and the area in which the property is located; the planning goals, objectives, policies, and standards of the Riverside County General Plan; and the development standards of this Section and other County ordinances.

c. *Design Guidelines.*

- (1) Wherever development objectives are identified in this Section, or wherever design-oriented objectives are specified under minimum development standards, those objectives shall be implemented in conjunction with design guidelines adopted by the Board of Supervisors.
- (2) The Planning Director shall develop, prepare, and keep current a Design Guidelines Manual for adoption by resolution of the Board of Supervisors and shall, when appropriate, recommend amendments to the manual for adoption by the Board.

d. *Filing Requirements.*

- (1) The following information shall be filed in conjunction with a Restricted Single-Family Development filed pursuant to this Section:
 - (a) An application for a land division pursuant to Ordinance 460.
 - (b) If the application is intended to implement an adopted specific plan of land use, a statement shall be filed specifying how the specific plan is being implemented through the project.
 - (c) A comprehensive site plan, conceptual grading plan, and tentative subdivision map, based upon a contour interval no greater than four feet, showing the following in addition to the requirements of Ordinance 460:
 - (i) proposed lots including lot lines and proposed easement lines, if any.
 - (ii) building footprints.
 - (iii) floor plan assignments.
 - (iv) proposed setbacks.
 - (v) pad elevations, street grades, and all cut and fill slopes in excess of one foot in vertical height.

(d) The following separate tabulations shall be provided:

- (i) the mix of floor plans.
- (ii) the lot area, pad area, percentage lot coverage, lot width, front setback, the area defined pursuant to Section 7.11 f(2)(f), usable rear-yard area, usable rear-oriented side-yard areas where the side yards are no less than 10' usable feet in width, total rear-yard area, and total rear-oriented side-yard areas where the side yards are no less than 10 feet in width, for each lot in the project.
- (iii) the total gross project area, total net project area, net area devoted to streets and net area devoted to lot purposes.

- (e) A fencing plan including details of proposed materials to be used.
- (f) Dimensioned conceptual floor plans and elevations, including details of proposed materials for elevations, and square-footages and heights of individual units.
- (g) Proposed phasing plan showing the planned sequence of subdivision map recordation and development.

(2) The following additional requirements shall apply to applications filed pursuant to this Section:

- (a) All necessary information shall be filed in order for the project to be environmentally evaluated in accordance with the Riverside County General Plan, the California Environmental Quality Act (CEQA), and the Riverside County Rules to Implement CEQA.
- (b) 8-1/2" x 11" reduction transparencies of all exhibits and maps shall be provided.
- (c) The scale of the site plan and all supporting exhibits and maps shall be the same with a minimum scale of 1" = 40'. In situations where the required 40' scale maps would involve preparation of multiple sheets to accommodate an entire project, composite reductions on a single sheet may be submitted in order to facilitate distribution to affected agencies.
- (d) A pre-application conference with the Planning Department shall be encouraged to be held to review a proposed application prior to actual filing.

e. *Complete Application.*

- (1) An application shall not be deemed complete until a determination is made by the Planning Director that all necessary information has been submitted.
- (2) The Planning Director may waive the filing of any information determined to be unnecessary or not applicable with the exception of the required land division application.

f. *Minimum Development Standards.*

One-family dwellings developed as Restricted Single-family Residential Subdivisions shall

comply with the following minimum development standards.

(1) *Site Development Standards.*

- (a) Lots shall have a minimum width of 40 feet measured along the 22-foot average building setback line; provided, however, that lots situated along street knuckles and cul-de-sac bulbs shall have not less than 20 feet of frontage measured along the face of curb.
- (b) Lots situated along collector roadways shall have a minimum width of 50 feet measured along the 22-foot average building setback line.
- (c) New property lines shall be located at the tops of slopes except along street rights-of-way where the standards of Ordinance 461 shall apply and in zero lot line situations.
- (d) Side-yard manufactured slopes shall not exceed a maximum of 10 feet in vertical height in side-yard areas between dwelling units; provided, however, dwellings may be set back from the toes of slopes which exceed 10 feet in vertical height by one foot for each foot of vertical slope height, and from the tops of such slopes by one-half foot for each foot of vertical slope height. In no case shall the setbacks from a toes and tops slope be less than that required by Ordinance 457.
- (e) Front yards shall have a minimum average depth of 22 feet throughout the project. Dwellings may be located no closer than 18 feet to the front property line in order to achieve variety in front-yard setbacks provided the minimum average setback is maintained and further provided that no garages are situated closer than 30 feet to the face of the curb.
- (f) Side yards shall not be less than 5 feet except that street side yards of corner lots shall be a minimum of 10 feet for single-story dwellings and 15 feet for multistory dwellings.
- (g) Building separation between dwelling units shall not be less than 10 feet for dwellings up to 28 feet in overall height. Building separation shall be increased by one foot for each foot by which any adjoining building exceeds 28 feet in overall height. Attached garages may encroach a maximum of 5 feet into the required building separation provided no living portions of adjoining dwellings encroach into the required building separation and provided building separation between structures is not reduced below 10 feet.
- (h) Side yards shall be a minimum of 25 feet for lots which have side yards adjacent to streets with a planned width of 110 feet or greater, state highways, or freeways.
- (i) Rear yards shall be a minimum of 40 feet for lots which have rear yards adjacent to streets with a planned width of 110 feet or greater, state highways, or freeways.

- (j) Interior side yards may be reduced to accommodate zero lot line or common wall situations, except that, in no case shall the reduction in side yard areas reduce the required separation between detached structures.
- (2) Open Space Development Standards.
- (a) Lot coverage by all main buildings and accessory apartments shall not exceed 40% of the net area of a lot.
- (b) Rear yards throughout the project shall have a minimum average depth of 25 feet to the rear property line or toe of any manufactured slope, whichever is closer to the rear of the dwelling, but not less than 20 feet in any case.
- (c) Each rear yard shall contain a minimum of 1,000 square feet of usable area where usable area is defined as lot pad area exclusive of any manufactured slopes.
- (d) Total usable project open space contained within rear yards and rear-oriented portions of side yards of no less than 10 usable feet in width shall average not less than 2,000 square feet per lot. For purposes of this Section, a rear-oriented side yard is a side yard which is either substantially a continuation of the rear yard by virtue of irregularly shaped rear and side yards, or which by virtue of the floor plan of the dwelling is designed to be an integral part of the indoor and outdoor living environment of the dwelling and lot.
- (e) Total usable project open space contained within rear yards and rear-oriented portions of side yards of no less than 10 feet in width may be reduced to an average of not less than 1,600 square feet per lot if total project open space contained within the rear yards of individual lots and rear-oriented side yards of no less than 10 feet in width is not less than 40 percent of the net area of a project devoted to residential lot purposes.
- (f) In all cases where the front-yard setback of a dwelling exceeds 22 feet, the area defined by the product of the footage by which the setback exceeds 22 feet and the width of the lot may be counted toward the project's open space requirements specified in (d) and (e) above.
- (g) The requirements in parts (d) and (e) above shall be satisfied for the project as a whole and each phase of the project if the project is to be recorded in phases. Nothing in parts (d) and (e) above, however, shall prohibit individual homeowners from constructing structural additions or accessory structures on individual lots.
- (3) Housing Development Standards.
- (a) Two enclosed off-street parking spaces shall be required for each dwelling unit, notwithstanding the provisions of Section 18.12. All driveways shall be concrete paved.
- (b) All dwellings shall comply with the requirements of Section 18.11, except that no multistory dwellings shall contain less than 1,100 square feet of total living area.
- (c) Projects shall provide a range of dwelling unit sizes and floor plans developed in concert with the scale of the project. A minimum of one floor plan shall be provided for each 60 dwelling units, or fraction thereof, in a proposed project, except that in no case shall less than 3 floor plans be provided for any individual project.
- (d) Projects shall provide a variety of dwelling elevations developed in concert with the scale of the project. A minimum of one elevation shall be provided for each 15 dwelling units, or fraction thereof, in a proposed project, except that in no case shall less than 6 elevations be provided for any individual project.
- (e) Dwellings situated on lots which take access from a collector roadway (66-foot right-of-way) shall either have garages setback deeper from the street than the front of the dwelling, but not less than 30 feet from the face of the curb, or be designed with swing in (side-oriented) garage entries.
- (f) Fencing shall be provided in all side-yard areas between dwelling units.
- (g) The heights and construction of all reverse frontage walls shall be determined through an acoustical study of the forecasted noise environment, but shall not be less than 6 feet in height from the finished grade of the lot in any case.
- (h) Dwellings and structures shall not exceed 40 feet in overall height.
- (i) The number of dwelling units in one residential building shall not exceed two.
- g. *Final Plan of Development.*
- (1) No final subdivision map shall be recorded pursuant to this Section until such time as a final site plan has been submitted to and approved by the Planning Director. The final site plan shall show all lots, building footprints, setbacks, yard spaces, floor plans, and elevations, and such additional information as deemed necessary by the Planning Director to determine that the final site plan conforms to this Section and the final site plan approved in conjunction with the tentative subdivision map for the property.
- (2) Nonsubstantial adjustments to an approved project's design, including setbacks, floor plans, and elevations, are permitted subject to the approval of the Planning Director or the approval of a minor change pursuant to Ordinance 460. Changes determined to be substantial by the Planning Director including changes in concept and product type, shall be submitted for review in accordance with the

provisions of Ordinance 460 governing minor changes and revised tentative maps.

SECTION 3. Section 18.9 of Ordinance No. 348 is amended to read as follows:

SECTION 18.9. DIVISION OF LAND. Whenever a division of land is proposed, the total number of lots or density permitted shall be determined pursuant to the General Plan for Riverside County, any applicable adopted specific plan and Section 66474 of the Government Code. In any event, no parcel shall be created that is below the minimum size allowed by the zoning classification that has been applied to the parcel of land unless a variance has been granted that allows smaller parcel sizes, or a planned residential development has been approved that allows smaller lot sizes as part of an overall development.

SECTION 4. Paragraph (5) of Subsection (b) of Section 18.12 of Ordinance No. 348 is amended to read as follows:

(5) Walls. All paved parking areas, other than those required for residential uses, which adjoin property zoned R-1, R-1A, R-2, R-2A, R-3, R-4, R-6, R-A, R-T, or R-T-R, shall have a six-foot high solid masonry wall installed in such a manner as to preclude a view of the parking area from such adjoining property, except that any walls within 10 feet of any street or alley shall be 30 inches high.

SECTION 5. Section 18.15 of Ordinance No. 348 is amended to read as follows:

SECTION 18.15. YARD REQUIREMENTS. No required yard or other open space around an existing building, or any building hereafter erected, shall be considered as providing a yard or open space for any other building on an adjoining lot or building site, except in the case of zero lot line residential projects pursuant to an overall development.

SECTION 6. Section 18.21 of Ordinance No. 348 is amended to read as follows:

SECTION 18.21. THROUGH LOTS, REGULATIONS. On through lots, either lot line separating such lots from a street may be designated as the front lot line. In such cases, the minimum rear yard shall not be less than a required front yard in the zone in which such lot is located.

Metropolitan Dade County, Florida *Article XXXIII F* *Zero Lot Line Developments*

SECTION 33-284.41. LEGISLATIVE PURPOSES. The principal purposes of the Zero Lot Line concept are: (1) the more efficient use of land, as compared with the typical single-family development, making available needed housing at a more affordable cost;

(2) the design of dwellings that integrate and relate internal-external living areas resulting in more pleasant and enjoyable living facilities; (3) by placing the dwelling against one of the property lines, permitting the outdoor space to be grouped and utilized to its maximum benefit.

SECTION 33-284.42. DISTRICTS IN WHICH PERMITTED.

A Zero Lot Line development for one-family dwellings only may be permitted in the RU-1, RU-2, RU-TH, RU-3, and RU-3M districts, if approved at public hearing. Where the regulations included herein conflict with regulations included in the individual districts or other sections of Chapter 33, the regulations included herein shall apply.

SECTION 33-284.43 DEVELOPMENT PARAMETERS.

All applications for a Zero Lot Line development shall comply with the following applicable development parameters.

- A. *Uses Permitted.* Detached one-family dwellings on individually platted lots, including every customary accessory use not inconsistent therewith, shall be permitted. Fencing, walls, trellises, and other similar uses can be used as connecting elements between one-family dwellings on adjacent lots, subject to site plan review. Garages, carports, and utility storage structures shall be permitted accessory uses; however, said structures shall not be used as connecting elements.
- B. *Minimum Lot Sizes.* The minimum average net lot size shall be four thousand, five hundred (4,500) square feet for sites zoned RU-1 and four thousand (4,000) square feet for sites zoned RU-2, RU-TH, RU-3, and RU-3M; this shall not include any credited for streets, recreation areas, common open space, or water bodies. The minimum net lot size shall be three thousand (3,000) square feet. Private roads shall not be used in calculating the net lot area.
- C. *Dwelling Unit Setback.*
 - Interior side yard.* The dwelling unit shall be placed on one interior side property line with a zero (0) setback, and the dwelling unit setback on the other interior side property line shall be a minimum of ten (10) feet, excluding the connecting elements such as fences, walls, and trellises. Patios, pools, garden features, and other similar elements shall be permitted within the ten (10) foot setback area, provided, however, no structure, with the exception of fences or walls, shall be placed within easements required by Section K.
 - Front setback.* All dwelling structures shall be set back a minimum of five (5) feet from the front property line.
 - Rear setback.* There shall be no minimum rear setback.

Side street setback. The dwelling setback shall be a minimum of fifteen (15) feet from the side street property line.

Accessory buildings and structures shall observe setback requirements as otherwise provided in the Code.

- D. *Alleys.* Alleys shall be permitted in Zero Lot Line developments. Said alleys shall provide auto access to individual units and service access for trash collection and other public and private services. Alleys shall not be used as storage or parking areas.
- E. *Street Frontage.* Each lot shall have a clear, direct frontage on public streets or to accessways complying with private street requirements.
- F. *Maximum Lot Coverage Permitted.* The total lot coverage permitted for all buildings on the site shall not exceed fifty (50) percent of the lot area.
- G. *Platting Requirements.* Each dwelling shall be located on its own individual platted lot. If areas for common use of occupants of the development are shown on the plat, satisfactory arrangements shall be made for the maintenance of the common open space and facilities as provided in Section N of this Article. The plat shall indicate the zero lot lines and easements appurtenant thereto.
- H. *Building Heights.* The maximum building height shall not exceed two (2) stories and thirty-five (35) feet in height.
- I. *Integration of Interior/Exterior Areas.* Access of a total of fifteen (15) percent of the lineal length of the total perimeter wall area of the dwelling unit as measured in plan form shall be provided to exterior/patio court area(s); said access shall be totally visual and physically passable. (See Figure below.)
- J. *Openings Prohibited on the Zero Lot Line Side.* The wall of the dwellings located on the lot line shall have no windows, doors, air conditioning units, or any other type of openings, provided, however, that atriums on the courts shall be permitted on the zero lot line side when the court or atrium is enclosed by three (3) walls of the dwelling unit and a solid wall of at least eight (8) feet in height is provided on the zero lot line. Said wall shall be constructed of the same material as exterior walls of the unit.
- K. *Maintenance and Drainage Easements.* A perpetual four (4) foot wall-maintenance easement shall be provided on the lot adjacent to the zero lot line property line, which, with the exception of walls and/or fences, shall be kept clear of structures. This easement shall be shown on the plat and incorporated into each deed transferring title to the property. The wall shall be maintained in its original color and treatment unless otherwise agreed to in writing by the two affected lot owners. Roof overhangs may penetrate the easement on the adjacent lot a maximum of twenty-four (24) inches, but the

roof shall be so designed that water runoff from the dwelling placed on the lot line is limited to the easement area.

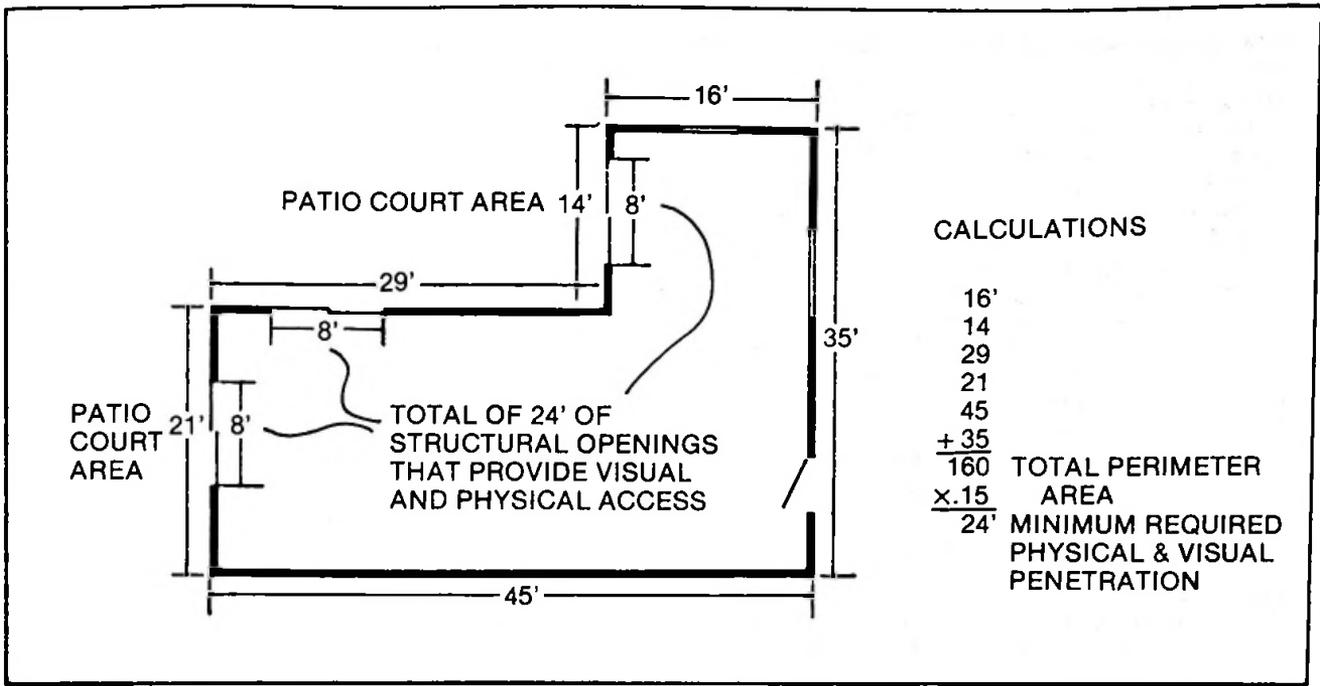
- L. *Parking.* A minimum of two (2) off-street parking spaces shall be provided on each platted lot. Except for parallel parking on public roads, tandem parking is permitted only on individual lots and in the driveways connecting such lots with the adjacent roads, provided said driveways are for the exclusive use of each individual lot; however, tandem parking shall be limited to no more than one (1) such tandem parking space for each individual lot. Parking shall be prohibited on sidewalks. Garages shall not be credited toward the parking requirement.
- M. *Trees.* Trees as defined in Chapter 18A, Landscaping, shall be provided on the basis of three (3) trees for each platted lot. In addition, street shade trees shall be provided along each side of the roadway(s) at a minimum spacing of forty (40) feet on center for private roads. In case of developments with public roads, the trees may be placed on private lots in lieu of the public right-of-way provided the forty (40) foot spacing and the rowing of trees are maintained. This shall be in addition to the three (3) trees required for each platted lot. Existing trees, excluding those trees exempt from the protection provisions within Chapter 26B, Tree Preservation, shall be preserved to the maximum extent practical and shall count towards meeting the total tree requirements. Removal of any existing trees shall be in accordance with the provisions within Chapter 26B, Tree Preservation.
- N. *Common Open Space and Maintenance of Facilities.* Common open space is not required but may be permitted. If common open space is provided, provisions satisfactory to the Zoning Appeals Board shall be made to assure that nonpublic areas and facilities for the common use of occupants of Zero Lot Line development shall be maintained in a satisfactory manner, without expense to the general taxpayer of Dade County. Such may be provided by the incorporation of an automatic-membership home association for the purpose of continually holding title to such nonpublic areas and facilities and levying assessments against each lot, whether improved or not, for the purpose of paying the taxes and maintaining such common open space. Such assessments shall be a lien superior to all other liens save and except tax liens and first mortgage liens, which are amortized in monthly or quarter-annual payments over a period of not less than ten (10) years. Other methods may be acceptable if the same positively provide for the proper and continuous payment of taxes and maintenance without expense to the general taxpayers. The instrument incorporating such provisions shall be approved by the County Attorney, as to form and legal sufficiency, before submission to the

Board of County Commissioners and shall be recorded in the public records of Dade County, if satisfactory to the Board of County Commissioners.

SECTION 33-284.44. SITE PLAN REVIEW.

- A. The purpose of the site plan review is to encourage logic, imagination, innovation, and variety in the design process and ensure the congruity of the proposed development and its compatibility with the surrounding area. The Building and Zoning Department and Planning Department shall review plans for compliance with zoning regulations and for compliance with the site plan review criteria. The recommendations of both the Planning Department and Building and Zoning Department shall be transmitted to the appropriate board for their consideration.
- B. *Required Exhibits.* The following exhibits shall be prepared by design professionals, such as architects and landscape architects, and submitted to the Building and Zoning Department:
1. A location map indicating existing zoning on the site and adjacent areas.
 2. Site plan at no less than one (1) inch equals one hundred (100) feet, including the following information:
 - (a) Lot lines and setbacks;
 - (b) Location, shape, size, and height of existing and proposed buildings, decorative walls and elements, and entrance features;
 - (c) Existing and proposed landscaping;
 - (d) Recreation facilities (if applicable);
 - (e) Stages of development, if any;
 - (f) Location of off-street parking;
 - (g) Indication of exterior graphics;
 - (h) Indication of design methods used to conserve energy.
 3. Floor plans and elevations of all typical units and any other structures such as recreation buildings. The total amount of lineal exterior wall area and that portion which has visual and physical access to outside patio/court areas shall be indicated for each typical unit.
 4. Information indicating the following:
 - (a) Gross and net acreage;
 - (b) Lot sizes (dimensions and square footage);
 - (c) Building heights and stories;
 - (d) Building coverage for each lot;
 - (e) Amount of common open space in square feet (if applicable);
 - (f) Total trees provided and total trees required;
 - (g) Parking required and provided;
 - (h) Such other architectural and engineering data as may be required to evaluate the project.
- C. *Plan Review Standards.* The following criteria shall be utilized in the plan review process:

1. *Planning studies.* Planning studies approved by the Board of County Commissioners that include development patterns or environmental and other design criteria shall be utilized in the plan review process.
2. *Definition of private outdoor living spaces.* The Zero Lot Line unit shall be designed to integrate interior and exterior living areas. The configuration of the exterior walls of the unit shall define and enclose, and/or partially enclose outdoor living areas.
3. *Visual monotony created by excessive block lengths shall be avoided.*
4. *Landscape.* Landscape shall be preserved in its natural state insofar as is practicable by minimizing removal of existing vegetation. Landscape shall be used to shade and cool, direct wind movements, enhance architectural features, relate structure design to the site, visually screen noncompatible uses, and ameliorate the impact of noise.
5. *Buffers.* Architectural and/or landscape elements that provide a logical transition to adjoining, existing, or permitted uses shall be provided.
6. *Subtropical architectural characteristics.* Architecture and site development should incorporate consideration of the subtropical characteristics of the area. The provision of sun-control devices, shaded areas, vegetation, roof terraces, and similar features characteristic of subtropical design is encouraged.
7. *Energy conservation.* Design methods to reduce energy consumption is encouraged. Energy conservation methods may include, but not be limited to, natural ventilation of structures, siting of structures in relation to prevailing breezes and sun angles, insulation of structures, use of landscape materials for shade and transpiration, and orientation of breezes.
8. *Graphics.* Outdoor graphics shall be designed as an integral part of the overall design of the project.
9. *Visual access.* Visual access shall be provided for the driver of an automobile backing out of the individual lot into the adjacent roadway. Dwelling units on corner lots shall be so situated and set back as to provide unobstructed visual clearance at a roadway intersection.
10. *Private open space.* Open space intended for the private use of each individual dwelling unit should be so located and designed as to maximize its utility to the dwelling unit it serves and maximize its privacy, especially in relation to adjacent dwelling units.



11. *Trash containers.* Trash containers shall be screened and so designed as to be conveniently accessible to their users and collectors.

SECTION 33.284.45. COMMENCEMENT OF DEVELOPMENT.

If development is not commenced within twenty-four (24) months from the date of approval of a site development plan, the approval hereof shall become null and void and the same may not be developed in accordance with said plan; provided, if development is permitted in stages, subsequent stages may be connected within eighteen (18) months after the completion of the previous stage; otherwise, such subsequent stage may not be developed in accordance with the previously approved plan and such approval shall be null and void. Commencement of construction shall include, where necessary, substantial site improvement, which shall include but not be limited to active and continuous road improvement, excavation, grading and leveling, installation of utilities, and the like.

Arlington, Texas
Section 11-220
"R-1" Dwelling District
(Single-Family)

The "R-1" district is established to provide for detached single-family dwellings on smaller-sized lots. While standard side setback dwellings are permitted, the district is primarily intended to provided the maximum amount of usable private open space on each lot through the use of zero lot line construction and minimum front setback requirements. The required building separation and reduced lot area will result in a more dense project

while maintaining the general character of a low-density neighborhood. The "R-1" district is not intended to replace the "R" district as the primary district for single-family development but is rather designed for limited use in small, unified subdivisions at appropriate locations throughout the city.

SECTION 11-221. USE REGULATIONS. A building or premises in this zoning district shall be used only for the following purposes:

- (1) Any use permitted in the "R" district regulations.
- (2) Accessory buildings, including a private garage. Accessory buildings may be used for hobbies insofar as such activities are an accessory use only, and are not offensive by reason of odor, noise, or manner of operation.
- (3) A customarily incidental use.

SECTION 11-222. HEIGHT REGULATIONS.

- (1) The maximum height of any structure shall be thirty-five feet (35'); provided, the height of such structure may be increased to not more than forty-five feet (45') when, in addition to the side minimum requirement contained herein, each side yard shall be increased an additional foot for each foot such structure exceeds thirty-five feet (35') in height.
- (2) The maximum height of a permitted non-residential structure shall be seventy-five feet (75'); provided, that in addition to the front, side and rear setback minimum requirements contained herein, each of said setbacks shall be increased an additional foot for each foot such structure exceeds thirty-five feet (35') in height.

SECTION 11-223. AREA REGULATIONS.

Minimum Lot Area is 5,000 square feet. Minimum Lot Width is 50 feet.

SECTION 11-224. SETBACK REGULATIONS. The following setback requirements shall apply to all uses in this District:

- (1) The minimum front setback shall be:
 - (a) Twenty feet (20'), except where rear entry is obtained to property from a private drive or public alley and such lots are not adjacent to arterial or major collector streets, the front setback may be reduced to five feet (5').
 - (b) Any garage or carport shall be setback twenty feet (20').
- (2) For purposes of this District, a "zero lot line" shall signify a property line which does not require a special setback of structures from the said property line on one lot abutting said line. A structure erected on a zero lot line shall have its building face coincident with the property line. A zero lot line may be designated for any lot in this District when the lot adjacent to the zero lot line contains a maintenance easement as defined herein.
- (3) Any side lot line may be designated a zero lot line. When such designation is made on an interior lot, there shall be a maintenance easement established on the same lot coincident with the opposite side lot line.
- (4) When a side lot line is not designated a zero lot line or a maintenance easement, the minimum required side setback shall be five feet (5').
- (5) The minimum setback adjacent to any non-"R-1" district shall be five feet (5').
- (6) The minimum side setback on the street side of a corner lot shall be fifteen feet (15').
- (7) The rear lot line may be designated as a zero lot line only in conjunction with a zero side lot line. When the rear lot line is not designated a zero lot line or a maintenance easement, the minimum rear setback shall be five feet (5').
- (8) When a private access easement is provided at the rear of a lot, the minimum setback from such easement shall be three feet (3').
- (9) For purposes of this District, a "Maintenance Easement" shall signify an area of a lot not less than ten feet (10') in width extending along a property line of the lot where the adjacent property has designated a zero lot line at the side and/or rear. A maintenance easement shall be provided in conjunction with an adjacent zero lot line to ensure satisfactory clearance between structures on adjacent properties and to provide an area in which to repair and maintain a structure erected on a property line. The maintenance easement shall be maintained as an open space with no paved driving surface, no storage construction, or shrubbery except upon a finding by the Building Official that such does not impede the use of said easement for the maintenance of the adjoining structure.
- (10) All setback requirements and maintenance easements shall be noted on a filed plat of the property.
- (11) Every part of a required setback shall be maintained as an open space, with no principal or accessory structure occupying any portion, except that common overhead projections from

the building face (such as soffits) may project not more than three feet (3') into such space. Such limit of overhead projections applies to structures erected on a zero lot line in their relationships to the adjacent property.

SECTION 11-225. OFF-STREET PARKING REGULATIONS. In compliance with Section 15-200 and Table 11-105.

SECTION 11-226. SPECIAL CONDITIONS.

- (1) No openings for doors, windows, etc., shall be allowed along the zero lot line.
- (2) Building separation not less than ten feet (10') shall be maintained between structures on adjacent properties.
- (3) When a structure is erected on a zero lot line, there shall be no combustible material made a part of the building face for a height of seventy-six inches (76") above grade along the property line wall.

Las Vegas, Nevada
Section 11-1-11.C
R-CL, Single-Family, Compact-Lot
District

REGULATIONS. The R-CL zoning district is appropriate where a density between 6 to 10 dwelling units per gross acre (suburban residential areas), or the density permitted in the R-2 zoning district, is provided for in the general plan of the City of Las Vegas.

(A) *Uses Permitted:*

1. One (1) family dwelling of a permanent location, containing not more than one (1) kitchen and occupied by one (1) family.
2. Accessory buildings and uses incidental to the use of the property as a single family residence.
3. The following additional uses subject to the securing of a use permit and in each case as provided in Section 11-1-24 of this Chapter:
 - (a) Family-care home as defined in Chapter 5 of Title II of this Code, provided such facility is approved by the Child Welfare Board and meets all duly adopted standards for such facility.
 - (b) Home occupations as defined in Section 11-1-24 of this Chapter.

(B) *Building Height Limit:* No main building or structure shall have a height greater than two (2) stories, not to exceed 35 feet.

(C) *Building Site Area Required:* The minimum building site area for each one-family dwelling shall be 4,000 square feet with a minimum frontage of 40 feet. Notwithstanding the foregoing one-third of the lots in any block may range in size from less than 4,000 to 3,500 square feet with a minimum lot width of 35 feet; and one-third of the lots in any block may range in size

from less than 3,500 to 3,000 square feet with a minimum lot width of 30 feet. These smaller lots shall be dispersed throughout each block with the lots 4,000 square feet and over. The minimum size of a compact-lot development shall be five gross acres unless waived by the City Commission.

- (D) *Front Yard Required:* No building shall be erected closer than ten feet to either the front property line of the building site or the line of any future street as provided in the Major Street Section of the Master Plan or any official street plan.
- (E) *Side Yard Required:* There shall be a total minimum side yard of ten feet. One side yard may be reduced to zero feet if the other is a minimum of ten feet. (These setbacks shall be in accordance with the Uniform Building Code.) A corner lot shall have a side yard of not less than ten feet extending to the rear property line on the street side of the lot.

- (F) *Rear Yard Required:* There shall be a rear yard of not less than ten feet.
- (G) *Maximum Building Site Coverage:* The maximum building coverage for lots 4,000 square feet and over shall be fifty percent. Permitted lots containing less than 4,000, but 3,500 or more square feet, shall have a maximum building coverage of forty-five percent. Permitted lots containing less than 3,500, but 3,000 or more square feet, shall have a maximum building coverage of forty percent.
- (H) *Off-Street Parking:* A minimum of two off-street parking spaces, 9' x 16' in size, shall be required for each building site, including carport or garage area. Tandem parking shall be allowed on lots with 35 feet or less frontage, provided there is a 16-foot minimum front-yard setback. All parking shall be in accordance with the provisions of 11-1-6(H) of this Code.

Appendix B.

Selected Provisions from Planned Unit Development Ordinances

	Density	Open Space	Other Requirements
Coon Rapids, Minn.	"Density shall be governed by the standards of the zoning district most similar in function to the proposed use. [However,] a residential PUD may provide up to a 25 percent increase in the number of units per acre if the PUD provides substantially more site amenities than are found in a conventional residential development."	"At least 20 percent of the area of the residential portion of the PUD shall be usable open space."	"Deviation [from standards for lot area, coverage, setbacks, parking, and screening] may be permitted only if such deviation is consistent with the total design of the development, encourages a desirable living environment and is not detrimental to the welfare of the city." "No principal building shall be set back less than 25 feet or the height of the building, whichever is greater, from the exterior of a PUD or a public right-of-way." "Minimum PUD development areas [must be at least] 3 acres of land in single ownership or control." This requirement can be waived under certain conditions. "All land use shall abut on a public street or have adequate access to a public street by means of a private drive."
Elkhart County, Ind.	"The area of the tract [must] . . . provide the minimum lot area per family . . . which is required for the most intensive use normally permitted in the district in which such development is to be located."	No specific amount required, but some portion of the parcel must be devoted to open space.	Must be at least 4 acres in area.
Fort Collins, Colo.	Maximum density permitted is determined by how well the project satisfies established criteria. However, the average gross density of the PUD must be at least three dwelling units per acre.	No specific amount required, but when provided or if proposed project is located near existing open space, project is awarded points toward gaining approval.	City has developed an extensive list of criteria for the review and approval of PUD proposals. Private streets are permitted.
Geneva, Ill.	". . . the maximum number of dwelling units permitted shall be determined by dividing the net development area by the minimum lot area per dwelling unit required by the district or districts in which the area is located and then increasing this number by 25 percent."	"No plan for a planned unit development shall be approved unless such plan provides for permanent common space of appropriate size and location, as determined by the plan commission."	". . . along the periphery of . . . planned developments, yards shall be provided as required by the regulations of the district in which . . . development is located." "All improvements shall be of a construction quality in accordance with city ordinances. The plan commission shall recommend which streets shall be dedicated."

Appendix B (cont'd).

	Density	Open Space	Other Requirements
Thurston County, Wash.	<p>"The minimum lot size provisions of other sections of the zoning ordinance are waived in a Planned Residential Development (PRD), except that the minimum lot size requirements of the underlying zone shall serve as the criterion to determine the dwelling unit density of the total development. [However], . . . the Hearing Examiner may authorize a dwelling unit density not more than 20 percent greater than that permitted by the underlying zone . . . provided that the environmental amenities sought by this ordinance are met."</p>	<p>"Each Planned Residential Development shall provide not less than 30 percent of the gross land area for common open space. . ." This open space can be dedicated for public use or owned in common.</p>	<p>"Setbacks from the exterior boundary line of the PRD area shall be comparable to or compatible with those of the existing development of adjacent properties. . . In no event shall such setback be less than 20 ft."</p> <p>". . . yard requirements between buildings may be waived . . . [but] wherever buildings are separated, a minimum distance of 10 feet shall be maintained between such buildings."</p> <p>"The minimum site shall be two acres."</p> <p>"Off-street parking shall be provided . . . as required for the underlying zoning district . . . Building coverage . . . shall not exceed the percentage permitted by the underlying zone."</p>
San Marcos, Calif.	<p>". . . there shall be no minimum area requirement for individual lots or building sites. The number of dwelling units allowable . . . shall not exceed that set forth . . . [in the underlying zoning district.]"</p> <p>". . . no modification shall be granted from the density requirements nor from the total open space area requirements specified in [the ordinance.]"</p>	<p>"Required open space shall comprise at least 40 percent of the total area of the Planned Development At least one-half of the required open space . . . shall be suitably improved."</p>	<p>"A setback of at least 50 feet from the centerline [of the street] shall be maintained by any building or structure, except a wall or fence, from any street along an exterior boundary of the development. . . . Otherwise, a setback of not less than 25 feet from an exterior boundary shall be maintained."</p> <p>"No building . . . shall be located closer than 5 feet from any interior vehicular or pedestrian way. . . . No garage or carport having straight-in access from a public or private circulation street shall be located closer than 20 feet from the nearest edge of the sidewalk, or where no sidewalk exists, from the nearest edge of the street right-of-way or road easement."</p> <p>"Spacing between buildings shall be at least 10 feet."</p> <p>Private streets and pedestrian ways are permitted.</p>
Shreveport, La.	<p>". . . building site area requirements that are established by the district regulations for individual building sites [lots], may be varied so long as the aggregated total requirements that would be established for individual building sites are met over the entire planned unit development site."</p>	<p>No specific amount required. However, at least 20 percent of the site must be devoted to open space when density is increased. (See "density" provisions in column one.)</p>	<p>"On all external property lines residential planned unit developments shall be required to maintain front, side, and rear yard setbacks required for the district in which they are located."</p> <p>"For a development proposing only residential land uses the minimum size tract to be considered shall be three (3) acres."</p>

Appendix B (cont'd).

	Density	Open Space	Other Requirements
Shreveport, La. (Cont'd)	"...the planning commission may waive any of the standards set out in this section and related standards such as density requirements. . . . If an applicant proposes increased density the site plan must provide a minimum of 30 percent open area. . . ."		Private streets permitted. "Sidewalks . . . may be omitted if adequate pedestrian sidewalks are provided elsewhere in the development."
Phoenix, Ariz.	A maximum number of dwelling units per acre is established for each residential zoning district. The densities permitted are slightly higher than those allowed under conventional requirements. Increased density (up to 20 percent) is permitted when additional common area is provided—e.g., a one percent increase in density is allowed for each 4 percent of unimproved common area provided or 2 percent of improved common open space.	At least 5 percent of the gross area of the PUD must be devoted to common areas.	Specific setback standards have been established for perimeter lots. Structures on perimeter lots must maintain a minimum setback of 40 feet from public streets in the most restrictive zoning districts, and minimum setback of 20 feet from the property line. All structures must maintain a minimum front-yard setback of 25 feet in the most restrictive zoning districts, and a minimum front-yard setback of 10 feet in less restrictive districts.

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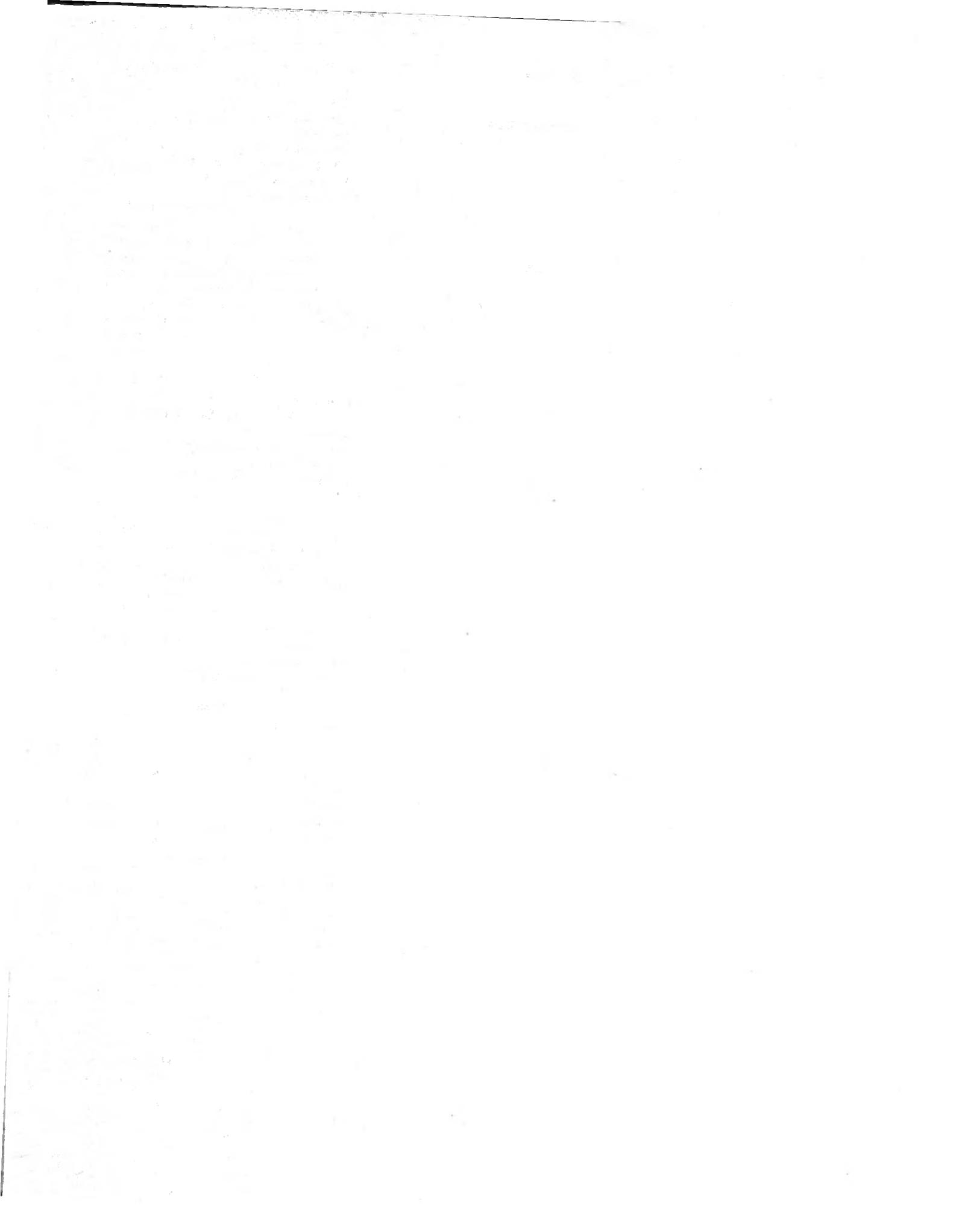
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Appendix C. Directory

Jurisdiction	Project	Developer
PHOENIX, AZ Richard Counts Planning Director Planning Department City of Phoenix 251 West Washington Phoenix, AZ 85004 602-262-6364	Cimarron	Thomas E. Knoell Knoell Homes P.O. Box 21287 Phoenix, AZ 85036 602-273-7101
RIVERSIDE COUNTY, CA Conrad Guzkowski Deputy Planning Director 4080 Lemon Street, 9th Fl Riverside, CA 92501 714-787-2279	Cobblestone	Barry D. Zimmerman Vice President Covington Technologies 2451 East Orangethorpe Avenue Fullerton, CA 92631 714-879-0111
	Woodhaven	Steve Weileman Vice President Woodhaven Developers, Inc. 6865 Airport Drive Riverside, CA 92504 714-687-0760
SAN MARCOS, CA Jim Uribe City of San Marcos 105 Richmar Avenue San Marcos, CA 92069 619-744-4020	Peacock Park	Bruce Mays The Ramos-Jenson Company P.O. Box 248 San Marcos, CA 92060-0102 619-744-2250
FORT COLLINS, CO Curt Smith, Director Planning and Development Department City of Fort Collins P.O. Box 580 Fort Collins, CO 80522 303-221-6500	Redwood	Gefroh Associates, Inc. 555 S. Howes Suite One Fort Collins, CO 80521 (Consultant to Developer of Redwood)
	Cottonwood	T.D. Murphy 2601 South Lemay Avenue, Suite 36 Fort Collins, CO 80525 303-226-0215

Jurisdiction	Project	Developer
	Gables	Dan Jensen Jensen & Associates 1525 Hull Street, A-1 P.O. Box 1007 Fort Collins, CO 80526 303-223-7070
DADE COUNTY, FL Walter F. Geiger, Chief Development Division Planning Department Metropolitan Dade County Suite 900, Brickell Plaza 909 S.E. First Avenue Miami, FL 33131 305-579-2880	Bird Road	Oswaldo Riveron Village Development, Inc. 4110 S.W. 135th Avenue Miami, FL 33175 305-221-0069
	Bilbao	Nelson Bellon International Development & Investment Corporation 2424 Coral Way Miami, FL 33145 305-858-5620
	Oak Park	Harry Weitzer 8925 S.W. 148th Street Miami, FL 33176 305-232-2522
GENEVA, IL Gregg Gabel, Director Community Development Department City of Geneva 22 First Street Geneva, IL 60134 312-232-0818	Geneva East	Thomas Kowalski Vice President Sho-Deen, Inc. 13 South Seventh Street Geneva, IL 60134 312-232-8570 Chris Lannert The Lannert Group One West Illinois Street St. Charles, IL 60174 312-377-6900 (Consultant for Geneva East)
ELKHART COUNTY, IN Steven F. Seifert Plan Administrator Department of Planning and Development Elkhart County 401 South Second Street Elkhart, IN 46516 219-294-1688	Mark VII West Simonton Lake	Dennis K. Harney Director of Marketing Realty Group Coachmen Industries, Inc. P.O. Box 30 Middlebury, IN 46540 219-825-5821
SHREVEPORT, LA Stephen H. Pitkin Executive Director Shreveport Metropolitan Planning Commission of Caddo Parish City Hall 1234 Texas Avenue P.O. Box 1109 Shreveport, LA 71130 318-226-6480	Cobblestone	Beal Locke Beal Locke & Associates 10100 Youree Drive Shreveport, LA 71115 318-797-0017

Jurisdiction	Project	Developer
<p>COON RAPIDS, MN Lee Starr Director of Planning Planning Department City of Coon Rapids 1313 Coon Rapids Boulevard Coon Rapids, MN 55433 612-755-2880</p>	Shannon Park	<p>James Stanton President Shamrock Builders 9531 Foley Boulevard Coon Rapids, MN 55433 612-755-6900</p>
<p>LAS VEGAS, NV Harold P. Foster, Director Department of Community Planning and Development City of Las Vegas 400 East Stewart Avenue Las Vegas, NV 89101 702-386-6011</p>	Pinecrest	<p>Lee Embry Collins Brothers Construction 3150 West Sahara Avenue Las Vegas, NV 89102 702-736-6151</p>
<p>ARLINGTON, TX Connie M. Hogan Urban Planner Planning Department City of Arlington P.O. Box 231 Arlington, TX 76010 817-275-3271</p>	Springridge	<p>Ron Morris Product Planning & Development Fox & Jacobs, Inc. 2800 Surveyor Boulevard P.O. Box 934 Carrollton, TX 75006 214-245-8511</p>
	Windmill	<p>J. Tom Shelton All American Homes 3609 West Pioneer Parkway Arlington, TX 76013 817-467-7561</p>
<p>SAN ANTONIO, TX Michael O'Neal, Chief Current Planning Planning Department City of San Antonio 115 Plaza De Armas P.O. Box 9066 San Antonio, TX 78285 512-299-7889</p>	Sunrise	<p>Herbert Quiroga Vice President Ray Ellison Industries 4800 Fredericksburg Road P.O. Box 5250 San Antonio, TX 78201 512-349-1111</p>
	Stone Ridge	<p>Kyle Saunders Vice President, Sales Nash Phillips-Copus, Inc. 13441 Blanco Road Austin, TX 78216 512-492-5122</p>
<p>OLYMPIA, WA Fred Knostman Assistant Director Thurston Regional Planning Council Building #1 Administration 2000 Lakeridge Drive Olympia, WA 98502 206-753-8131</p>	Cottages	<p>John Phillips Phillips Homes P.O. Box 7003 Olympia, WA 98507 206-438-2888</p>



Appendix D.

A Selected Bibliography

American Public Health Association Committee on the Hygiene of Housing, *Standards for Healthful Housing: Planning the Neighborhood*, Chicago: Public Administration Service, 1950.

After World War II, it was estimated that almost 1.5 million houses would have to be built each year for 15 years to compensate for the war's interruptions of home construction, to accommodate new families, and to replace existing slums. The Committee on the Hygiene of Housing offered recommendations for the selection of housing sites and for site development standards. It began with the conviction that the prime objective of housing is the preservation of health. Housing not only promotes sanitation, it also provides security, comfort, and aesthetic satisfaction. Good siting decisions would make necessary goods and services conveniently available. The manual was addressed to public officials, professionals associated with housing development, organized consumer groups, and regulatory agencies. Topics covered include: the basic requirements for site selection; development of land, utilities and services; planning for residential facilities; provision of neighborhood community facilities; layout for vehicular and pedestrian circulation; neighborhood density; and the coordination of housing elements.

Bair, Frederick, H., Jr., *Regulating Mobile Homes*, Chicago: American Planning Association, April 1981.

This report begins with basic definitions, makes a number of distinctions between types of mobile homes and types of mobile home developments, and establishes classification systems to facilitate fine-tuning of local controls. A special permitting system is suggested as a means of administering local controls. This system includes a wide range of requirements and procedures running from simple to complex, depending on the local situation.

Bucks County Planning Commission, *Performance Streets: A Concept and Model Standards for Residential Streets*, Doylestown, PA: Bucks County Planning Commission, April 1980.

Bucks County developed these guidelines for new residential streets after discovering street design problems during subdivision reviews. Municipalities in the county had no street design standards to follow. In the absence of appropriate guidelines, municipalities responded either by developing standards intuitively, without thorough analysis, or by adopting modified highway design standards. As a result, residential streets were often built overly wide and designed only to move traffic rather than to control it. The Planning Commission prepared a model street ordinance that regulates street size by traffic density; parking, curb, and shoulder requirements; and engineering standards that control traffic safety (sight distances, horizontal curves, etc.). The ordinance promotes short, quiet residential streets that create recognizable neighborhoods and discourage through traffic.

Burchell, Robert W., et al., *Mount Laurel II: Challenge & Delivery of Low-Cost Housing*, New Brunswick, NJ: Center for Urban Policy Research, 1983.

The Mount Laurel I and II decisions have made New Jersey the testing ground for exclusionary zoning litigation. The Mount Laurel decisions require that all New Jersey communities take measures to provide affordable, quality housing for those people presently occupying substandard housing. The judgments also stipulate that communities in growth areas provide a share of affordable housing to meet housing needs generated by that growth. This study attempts to determine the characteristics of housing demand and supply that defined Mount Laurel's housing obligation. It also examines alternative strategies for producing low- and moderate-income housing at the local level.

Hershey, Stuart S. and Carolyn Garmise, *Streamlining Local Regulations: A Handbook for Reducing Housing and Development Costs*, Washington, DC: International Management Association, May 1983.

This manual was developed as part of HUD's Joint Venture for Affordable Housing—a public/private initiative to help state and local governments remove roadblocks to community development and affordable housing development by reforming local regulation, streamlining processing procedures, and promoting public recognition of the need for higher-density, smaller-sized housing units. Readers are shown how to determine whether a community's development regulations are out of step with development objectives. Reform techniques that take a community's particular political climate into account are discussed. Suggested regulation reforms include: changes in zoning to allow density increases and cluster and planned unit development; performance zoning; encouraging infill development; accommodating manufactured housing; and changes in subdivision standards and building codes.

Hoben, James E., *Affordable Housing: What States Can Do*, Washington, DC: U.S. Department of Housing and Urban Development, September 1982.

This report describes the role that state executives and legislators can play in making housing more affordable for first-time buyers. The affordable housing policies of several states are briefly described. These policies include: enabling local changes to laws and regulations to reduce land and construction costs; providing infrastructure; gathering capital through taxes, bond sales, and pension funds to provide financial assistance for home buyers; and permitting tax abatements or deductions for those who build and maintain affordable housing. Along with giving general pointers on how a state can get started with its own affordable housing program, the report gives a list of contacts in those states that have such programs.

Jensen, David R., *Zero Lot Line Housing*, Washington, DC: Urban Land Institute, 1981.

Providing higher densities and smaller houses requires more sensitivity to planning design details to ensure the livability of such units. Zero lot line (ZLL) development—that is, housing with no required setback along one or more lot lines—can accommodate innovative designs through its efficient use of lot area. ZLL housing maintains some features of the traditional detached single-family homes while making higher density and lower development costs possible. Although ZLL development is an accepted residential land use

technique in most communities, this publication sets out to dispel the myth that lower cost housing, especially ZLL housing, necessarily means lower quality housing. The ZLL concept is described in detail and numerous illustrations of ZLL development are provided.

The Joint Venture for Affordable Housing, *Affordable Housing: The State Role in Illinois*, Chicago: JVAH, September 1983.

During a two-day working conference, housing experts met to propose state actions that would make housing more affordable for Illinois citizens. Although the local and federal governments usually play the key roles in the development of affordable housing, delegates recognized that the state can offer technical assistance or funds to promote low-cost housing; make it possible for local governments to use innovative land use techniques; encourage the use of state pension funds to purchase mortgages; and offer a state mortgage insurance program. Recommendations for state action are made in the areas of finance; land use and zoning; rural housing development; building regulations and construction technology; and rehabilitation and conservation of existing housing.

Kendig, Lane, et al., *Performance Zoning*, Chicago: American Planning Association, 1980.

By separating groups of land use according to their compatibility, zoning protects the public health, safety, and welfare. Yet, in many instances, zoning has failed to protect people and the environment. "Performance zoning" has been developed to address areas of regulation where conventional zoning has failed. Unlike traditional zoning, performance zoning does not organize uses into a hierarchy that protects "higher" uses from "lower" ones. Rather, the performance standard approach is based on a technical ability to identify activities numerically (e.g., how much noise) and to measure them to see if they meet ordinance requirements. This book presents a performance zoning ordinance that regulates all permitted uses and structures as a function of the particular, and frequently measurable, externalities that each use is likely to produce.

Lynch, Kevin and Gary Hack, *Site Planning*, Cambridge, MA: The MIT Press, 1984.

This introductory text provides students and practicing professionals with a well-balanced composite of the practical, procedural, and aesthetic aspects of site planning, as well as the political controls that finally imprint a site plan. Numerous illustrations, photographs, and appendices are provided.

Ministry of Housing and Local Government, *The Density of Residential Areas*, London: Her Majesty's Stationery Office, 1952.

How to increase residential density without reducing housing standards is not a new question; this classic publication on the topic was produced in Britain during the post-World War II baby boom. When urban development spread rapidly into prime agricultural land, the British government began to rethink traditional notions of the amount of land needed for residential areas. Based on the premise that compact development saves land, and is often more satisfactory than "loose" development, this handbook discusses methods to achieve higher residential densities without abandoning standards that ensure livability. The handbook concludes that, because there are a number of elements within residential design that ultimately determine density, no absolute density standard can be defined for all residential areas. The government exhorted land use planners to balance: 1) the provision of adequate space for shops, schools, and other facilities; 2) placing the residential area in a "proper relation" to the rest of a town; and 3) the cost of developing widely spaced homes.

Ministry of Municipal Affairs and Housing, *Urban Development Standards: A Demonstration of the Potential for Reducing Costs*, Toronto: MMAH, January 1983.

The objective of this study was to examine the ways and means by which the development costs of new housing in subdivisions could be lowered. Existing development standards in Ontario for lot sizes, setbacks, road rights-of-way, pavement widths, and engineering services within the rights-of-way were reviewed. The study analyzes various means of reducing costs associated with meeting these standards. For example, four alternative subdivision designs that allow a direct cost comparison between conventional and alternative standards were created. The authors conclude that local officials, by reconsidering the development standards in their municipalities, can reduce housing costs as well as enhance the urban environment. The study contains appendices that describe the development standards used in the four subdivision designs as well as the reasoning behind them.

Moskowitz, Harvey and Carl Lindbloom, *A Guide for Residential Design Review*, Trenton, NJ: Bureau of Local Management Services, Local Planning Assistance Unit, September 1976.

An excellent technical guide for lay members of New Jersey municipal planning boards that review large (50 plus units) residential developments. The manual outlines a fairly specific review procedure that takes in the consideration of a broad concept plan down to the particular lot or site plan review.

It lists the items that should be discussed, the problems that should be solved, and the questions that have to be answered. Application procedures; the design review process; site constraints; density and building design considerations; circulation; parking; water; landscaping; open space; recreation; lighting; signs and street furniture; and legal aspects of design review are discussed in detail. The manual also contains a bibliography and a directory of agencies that can provide assistance to planning boards.

National Association of Home Builders, *Building Affordable Homes: A Cost Savings Guide for Builders/Developers*, Washington, DC: NAHB, no date.

HUD's Joint Venture for Affordable Housing, of which NAHB is a member, has been searching for solutions to the rising cost of housing by reviewing the ways in which overly restrictive building codes and land use regulations prevent the use of cost-saving development methods. Many communities surveyed by the Joint Venture have also found that land development and construction methods could be modified to greatly increase value and lower housing costs. This book presents an overview of those cost-saving land development and construction methods.

National Association of Home Builders, *Cost Effective Site-Planning*, Washington, DC: NAHB, 1982.

This workbook illustrates current needs and trends in lower-cost, single-family housing. It is intended to be used by builders, developers, community representatives, and government officials. A broad range of development standards and design techniques associated with site planning are assessed. The planning techniques presented here have proved successful in reducing development costs for small-lot single-family homes while providing quality, energy-efficient living environments. Lot plans for 2.5 to 10 dwellings per acre are illustrated. Site development costs for these various densities are compared. A four-pronged approach is suggested to lower overall costs: 1) use comprehensive land use planning; 2) use land and buildings more efficiently; 3) understand and work with the environment; and 4) reevaluate zoning and subdivision regulations. The report concludes that "(w)hile one or more of these approaches may achieve savings, using all four simultaneously can maximize savings and produce a better living environment."

National Association of Home Builders, *Planning for Housing*, Washington, DC: NAHB, 1980.

In a survey of existing residential communities, the National Association of Home Builders found

that mixed land use, compact development, and good use of landscaping resources are the fundamentals of sound, energy-efficient, attractive neighborhoods. Lessons to be learned from older residential areas include the workability of energy-efficient development; streets and parking areas should not dominate residential landscapes; well-constructed neighborhoods are easier and less costly to maintain; homes in a good residential environment will increase in value; and good residential environments improve a community's tax base while reducing expenditures for public services.

National Association of Home Builders Research Foundation, Inc., *Affordable Housing Demonstration Update*, Washington, DC: U.S. Department of Housing and Urban Development, January 1983.

The Affordable Housing Demonstration is one part of the U.S. Department of Housing and Urban Development's Joint Venture for Affordable Housing program. The program is designed to encourage builders and local officials to examine regulations and procedures as they affect housing costs. Program participants received up-to-date technical assistance from HUD, the NAHB Research Foundation, NAHB, and local associations. Detailed case studies and cost analyses will be produced on each project as construction is completed and units are sold; this update summarizes the findings on nineteen projects.

New Jersey Department of Community Affairs, et al., *Affordable Housing Handbook*, Washington, DC: U.S. Department of Housing and Urban Development, June 1982.

The New Jersey Department of Community Affairs and the Tri-State Regional Planning Commission put together this handbook. The handbook discusses techniques to minimize land improvement and construction costs associated with housing delivery. Community concerns about the nature of affordable housing are examined. The authors discovered that negative attitudes were usually founded on the belief that affordable housing would alter the community's existing character. They recommended that local housing coalitions, including builders, building trade unions, bank representatives, local officials, and concerned citizens be formed to address the need for affordable housing in a community to alleviate these fears.

Nolan, John, *Public and Private Partnerships for Constructing Middle and Moderate Income Housing*, White Plains, NY: Center for Community Development and Preservation, 1980.

The author identifies the various production and carrying cost components of housing and shows that a reduction in any one of the components will rarely result in a meaningful reduction in the cost of a house. Methods of calculating costs are explained. Methods that assess the entire spectrum of housing cost components accurately are discussed. The book covers cost-effective techniques for identifying and acquiring land; the influence of housing design and type and infrastructure on the final cost; public and private strategies presently used to limit the costs of obtaining and amortizing a mortgage; and public sector techniques for reducing housing costs, gaining political acceptance for affordable housing proposals, and managing the development process.

Nutt-Powell, Thomas E., *Manufactured Homes: Making Sense of a Housing Opportunity*, Boston: Auburn House Publishing Company, 1982.

Although manufactured housing has been around for a long time, only recently have federal, state and local housing professionals begun to view it as a viable solution to the housing needs of low- and moderate-income Americans. This book presents the results of research on the potential role of manufactured housing in meeting America's housing needs. The author examines the various types of manufactured housing alternatives; the construction, marketing, and buyers of manufactured housing; and the attitudes and actions of the local, state, and federal governments regarding manufactured housing. The author clarifies the legislative, administrative, and judicial issues that must be resolved if manufactured housing is to be a component of affordable housing policy.

Office of Appropriate Technology, *The Affordable Housing Book: Strategies for the Eighties from the California Affordable Housing Competition*, Sacramento, CA: OAT, 1982.

In 1982, the average price of a new home in California was \$120,000, which represented a 227 percent increase in cost in just one decade. The governor at that time, Jerry Brown, said that "housing may be the most frustrating economic and social problem in California today." The California Office of Appropriate Technology sponsored an Affordable Housing Competition to solicit ideas that would lower housing costs. Four hundred and eight entries were submitted in three categories: design projects; proposals to cut regulatory costs; and a catch-all category, "new possibilities." This book presents the best of those ideas for creating affordable housing through design, creative financing, regulatory changes, and ownerbuilding.

Porter, Douglas R. and Susan Cole, *Affordable Housing: Twenty Examples from the Private Sector*, Washington, DC: Urban Land Institute, 1982.

The 20 examples are meant to demonstrate to builders, community officials, planners, and consumers that various housing types and site plans can be both pleasing and affordable. The examples illustrate that changes in some site design standards—regulations that limit densities and require excessive lot sizes, parking spaces, and street widths—have made it possible for the building industry to meet affordable housing needs with nontraditional single-family homes. The authors also provide an overview of housing market conditions that have made affordable housing scarce.

Professional Builder, *Smaller, Smarter, More Affordable: Affordable Housing Ideas*, Denver, CO: Professional Builder, 1982.

Professional Builder has devoted considerable effort to encouraging developers to build "smaller, smarter, more affordable housing." The affordable houses described here are typically 1,500 square feet or less in size, cover less land area, sell for less than the average-sized house, have low maintenance designs, and are built with long-lasting materials. Nearly 60 articles, published in Professional Builder since January 1980, are reprinted here with numerous photographs and illustrations.

The Rice Center, *A Review of Standards and Common Practices in Building Site Regulations: Technical Issues and Research Needs*, Washington, DC: U.S. Department of Commerce, November 1980.

This study presents an excellent technical overview of five general categories of site design that strongly influence development costs: the street environment (streets, lighting, curbs, sidewalks, etc.); wastewater systems; stormwater drainage systems; water supply systems; and building sites and landscaping. The authors conclude that current development regulations and the means of enforcing them (e.g., local zoning ordinances; state and federal regulations) are overly complex and confusing. The report makes numerous suggestions on how to solve the regulatory confusion and sets a priority list for research on regulatory reform. The report has an extensive bibliography.

Sanders, Welford, *The Cluster Subdivision: A Cost-Effective Approach*, Chicago: American Planning Association, December 1980.

In recent years much of the increase in housing costs can be attributed to the rise in the cost of the

serviced lot, which now accounts for between 20 and 30 percent of the price of a typical single-family home. These costs can be substantially reduced when lot size is reduced and housing units are clustered. This report examines some of the regulatory techniques that communities have used instead of the Planned Unit Development (PUD) to encourage cluster developments.

Sanders, Welford, *Zero Lot Line Development*, Chicago: American Planning Association, March 1982.

The cost of money, land, and construction have made the conventional single-family house affordable only to high-income households. Local officials can reduce land costs by allowing smaller lots and higher density development but they must take care to adjust their site development standards that were originally designed for larger lots. An increasingly popular way of maintaining the most important characteristics of conventional, single-family, detached housing on reduced lots is through the use of a zero lot line (ZLL) approach. This report focuses on regulatory provisions that have been used to implement ZLL housing either in separate districts or in conventional single-family districts.

Sanders, Welford and David Mosena, *Changing Development Standards for Affordable Housing*, Chicago: American Planning Association, October 1982.

In some cases local governments are finding their development standards to be excessive, thereby unnecessarily increasing the cost of housing. In response, many communities have implemented regulatory reforms that may result in lowered housing costs. This report examines some of these reforms. The purpose of the reports is to make local governments aware of some of the ways in which residential development standards contained in zoning and subdivision regulations can be revised to help make housing more affordable; to examine in detail some of the recent changes in zoning and subdivision standards that are resulting in fewer restrictions on development; and to explore the processes local governments have used to make these changes.

Siedel, Stephen R., *Housing Costs and Government Regulations: Confronting the Regulatory Maze*, New Brunswick, NJ: Center for Urban Policy Research, 1978.

Seven areas of government intervention into housing provision—building codes, energy-conservation costs, subdivision requirements, zoning controls, growth controls, environmental controls, and financing regulations—are examined as regards their contribution to the rapid increase

in the price of new housing. A number of regulation amendments that might help reduce housing costs are compared. The author suggests where the government should and should not intervene in the housing industry in order to bring some moderation to housing prices.

U.S. General Accounting Office, *Why Are New House Prices So High, How Are They Influenced by Government Regulations, and Can Prices Be Reduced?*, Washington, DC: GAO, May 1978.

The price of homes increased 45 percent between 1972 and 1976, and house sizes have increased 700 square feet since the 1950s. Although many young, middle-income, and potential first-time home buyers can no longer afford to buy a house, builders have little incentive to build smaller, affordable homes because they believe larger homes will sell to second- and third-time buyers. Local land development regulations and building code requirements have contributed to the rising cost of housing. This GAO study makes several recommendations. For example, research should be conducted to determine the types and sizes of affordable houses that median-income families would be willing to purchase; builders should be given incentives (e.g., tax credits; loan insurance) to build less expensive, smaller homes; research should be done on how changes in the capital gains tax treatment of housing sales could encourage the purchase of smaller, less expensive homes; HUD should establish land development standards that permit higher-density housing and encourage use of these standards by communities; and technical data and assistance to communities should be provided to promote the use of less expensive construction materials and methods.

United States League of Savings Institutions Homeownership Task Force, *Homeownership Affordability in the 1980s*, Chicago: USLSI, 1983.

The U.S. Census Bureau estimates that during the 1980s as many as 10 million families who could have afforded to purchase a house in past decades will be forced to rent housing as a result of increased housing costs. The U.S. League of Savings Institutions Homeowners Task Force was created in 1982 to develop and advocate programs that will make it possible for most Americans to own homes. This paper is a summary of Task Force research. It examines the impact of housing prices, land prices, housing size and density on housing affordability; productivity and efficiency within the housing industry; the effect of government regulation in raising housing prices; and mortgage financing availability, mortgage rates, and alternative mortgage instruments.

Updegrave, Walter L., "Goodbye to the Detached House?" *Builder*, January 1984, pp. 198-202.

Statistics show that single-family detached homes accounted for only 54 percent of the housing starts in 1982—down from almost 75 percent in 1975. Expert opinion is mixed as to whether this trend will continue. Experts do agree that the vast majority of home buyers prefer detached housing, but most Americans simply can't afford that kind of housing anymore. No matter what share of the market this type of housing makes up in the future, there is no doubt that most single-family detached homes will look different from the houses built in the 1970s. The National Association of Home Builders predicts more small-lot housing, zero lot line development, and cluster subdivisions.

Urban Land Institute, *Reducing the Development Costs of Housing: Actions for State and Local Governments*, Proceedings of the HUD National Conference on Housing Costs, Washington, DC: U.S. Department of Housing and Urban Development, August 1978.

This conference was brought together to promote the findings of the 1978 HUD study, *Final Report of the Task Force on Housing Costs*. The Task Force agreed that finding solutions to the problem of rising housing costs was primarily the responsibility of the public sector. The delegates, including developers and public officials operating at different levels of government, described the impacts that rising housing costs have had on the public, examined what powers they had to deal with the effects of rising costs, and discussed techniques that might be employed to solve the problem. Five workshops resulted in a number of general conclusions and 105 specific recommendations aimed at reducing development costs. These recommendations were not debated at the conference, but the delegates were surveyed for their opinions one month following the conference. The results of this survey are presented along with all workshop papers.

Urban Land Institute, American Society of Civil Engineers, and National Association of Home Builders, *Residential Streets, USA*: ULI, ASCE, and NAHB, 1974.

Street standards contribute significantly to the cost of housing. Relatively little research has focused on amending residential street standards that were developed at a time when paving materials were cheaper and wide residential streets were prestige symbols. A national survey undertaken by the authors of this report identified cost-effective design and construction standards and practices that resulted in functional, durable residential streets. The authors stress the fact that

the report is intended to reflect a conservation bias—conservation of construction materials and labor, conservation of an individual's personal energy as a pedestrian or cyclist, or conservation of fuel energy—to the degree that conservation is consistent with utility, safety, and reasonable user convenience.

Vranicar, John, et al., *Streamlining Land Use Regulation: A Guidebook for Local Governments*, Washington, DC: U.S. Department of Housing and Urban Development, November 1980.

Since the 1920s, local land use regulation has come in for its share of criticism. It will no doubt continue to do so. For once, however, there is an issue on which public officials, planning staffs, developers and citizens can all agree: the regulatory process has become too complicated. More and more communities are assigning a high priority to streamlining approval procedures. These reforms often have come about at the urging

of local homebuilders and developers, but simplifying the system can benefit all participants. This guidebook discusses the successful streamlining techniques reported by over 200 planning agencies, examines their pros and cons, and offers practical advice for planning officials on assessing the performance of their own regulatory systems.

Weitz, Stevenson, *Affordable Housing: How Local Regulatory Improvements Can Help*, Washington, DC: U.S. Department of Housing and Urban Development, September 1982.

The report describes how land costs, site improvement costs, construction costs, and administration procedures affect final housing costs. Recognizing that local housing policies are inextricably linked with housing costs, and that housing costs can be reduced through regulatory and policy change, the author lists over 50 ways to improve local government policies.



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