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WORKING PAPER NO. 95-231

**WALKABLE SUBURBS?
AN EVALUATION OF NEOTRADITIONAL
COMMUNITIES AT THE URBAN EDGE**

By

Michael Southworth

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WALKABLE SUBURBS? AN EVALUATION OF
NEOTRADITIONAL COMMUNITIES AT THE URBAN EDGE

Michael Southworth

Working Paper No. 95-231

June, 1995

Walkable Suburbs?

An Evaluation of Neotraditional Communities at the Urban Edge

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ABSTRACT

As the twentieth century draws to a close, the American city is experiencing unprecedented growth at its edges. Land that until recently was devoted to agriculture and open space is being rapidly transformed into low density housing tracts, office parks, and shopping centers. Today the majority of Americans live and work in this new landscape, one that is almost completely dependent upon the automobile for access.

One of the few alternatives to this suburban sprawl approach to development has been the “neotraditional” community. These developments are characterized by somewhat higher densities, a greater mix of uses, provision of public transit, accommodation of the pedestrian and bicyclist, and an interconnected pattern of streets. Their designers contend that these developments are less auto-dependent and more conducive to the formation of community sense than typical subdivisions.

How well has the neotraditional model performed? What, if anything, is “neo” about it? Will these new and apparently safe home environments be successful communities 10-15 years from now? This research examines two recent prototype neotraditional communities—Kentlands and Laguna West—and compares them with a traditional turn-of-the-century streetcar suburb—Elmwood—and with conventional late twentieth century suburbs. The analyses describe and evaluate the developments in comparable terms: (1) general patterns of land use, transportation, open space, and built form, (2) relation to existing metropolitan development and the region, (3) walkability and efficiency of transit access to jobs, services, recreation, and schools, (4) quality and character of public streets and public spaces, (5) livability for children, teens, and elderly, and (6) market success.

I am grateful for the research assistance provided by Mathew Henning and Adrienne Wong. This research has been supported in part by the Center for Real Estate and Urban Economics, the Committee on Research, and the Farrand Fund of the University of California at Berkeley.

Walkable Suburbs?

An Evaluation of Neotraditional Communities at the Urban Edge

By Michael Southworth

Urban design has a long tradition of borrowing from the past, one that continues today as “neotraditional” designers look nostalgically back to the small American town as an alternative to conventional suburban development. The neotraditional models put forth by various architects have received considerable media attention and academic debate and raise several issues. We must ask whether such historicism is valid today. Is the village an appropriate model for development that is in fact a contiguous part of the urban fringe, and that functions as part of the regional metropolis? Is this indeed a new approach to development or simply another suburb in disguise? Some have criticized neotraditionalism for being too concerned with appearances, too architecturally based, while ignoring regional issues of transportation and land use. Others have asserted that consumers really don’t want walkability, sociability, and convenience and that the market demonstrates that the traditional auto-oriented suburban model that emphasizes the single family home—not community—is doing just fine.

Although most neotraditional developments still exist only on paper, a few are under construction and are at least partially occupied. Thus, this is an appropriate time to assess their design values and preliminary acceptance in the marketplace. How successful have these developments been? What is “neo” or “traditional” about them? How walkable and transit oriented are they? How well do they work for the people who live there?

Compared with conventional suburbs, neotraditional developments, at least on the drawing board, are characterized by somewhat higher densities, mixed uses, provision of public transit, accommodation of the pedestrian and bicyclist, and a more interconnected pattern of streets. Two alternatives to the conventional low density auto-dependent suburban tract development have been proposed, the “traditional neighborhood development” (TND) or “neotraditional development” (NTD) and the “pedestrian pocket,” sometimes referred to as “pedestrian oriented development” (POD) or “transit oriented development” (TOD). Their designers assert that they are less auto-dependent and more conducive to the formation of community sense than typical late twentieth century subdivisions.

ANALYZING URBAN FORM AND PATTERN

Two examples of neo-traditional, transit-oriented development—both of them classic examples of their type—are studied in a comparative manner: Laguna West, a pedestrian pocket or POD in greater Sacramento, California designed by Peter Calthorpe and Associates, and Kentlands in Gaithersburg, Maryland, a traditional neighborhood development designed by Andres Duany and Elizabeth Plater-Zyberk. These neotraditional developments are then compared with a traditional turn-of-the-century streetcar suburb, Elmwood in Berkeley, California, as well as with conventional suburbs of the late twentieth century.

Each case study development has been mapped at the same scale (1" = 400') and in the same graphic language to understand general pattern and form including land uses, density, grain, circulation systems, and public open space. Since both of the developments were still under construction at the time of this survey, the analyses illustrate projected form at buildout. Separate overlay maps have been made of various design features in each development. Breaking down the analysis into layers facilitates comparison on each dimension. The five layers are:

1. **Built form** showing the footprints of all structures and the resulting grain and pattern of development.
2. **Land use** patterns showing the location and density of housing, as well as retail, office, industrial, and civic activity.
3. **Public open space** including parks, plazas, walkways, and water bodies.
4. **Circulation systems** including vehicular roads, alleys, parking lots, and bicycle and pedestrian paths.
5. **Pedestrian access** showing areas with one quarter and one half mile access from a central point in the development, such as a local community or shopping center.

In addition to studying the form and pattern of the developments, the analysis examines the character of public streets and public spaces; adequacy of the transportation system and the accessibility of the development to jobs, services, recreation, and schools; livability for children, teens, and elderly; and market success.

Form and Pattern

Kentlands and Laguna West differ from most conventional suburban developments, as well as traditional neighborhoods in several ways.

Kentlands

Located on the historic 356 acre Kent family farm on the southwest edge of Gaithersburg, Maryland, Kentlands was designed in 1988 as a community of about 1600 dwelling units with a projected population of 5000. Construction was begun in 1989 and about 1100 units were completed by early 1995; buildout is expected by 1997. Surrounded by conventional suburban PUDs and auto oriented commercial strips like other suburbs, it is not an independent community, but is dependent upon Gaithersburg and the larger metropolitan region for most services and jobs. One church, an elementary school, a day care center, and a community recreation center have been built. One million square feet of office space and 1.2 million square feet of retail space were planned, of which 350,000 square feet of retail space have been completed, but the office space is unlikely to be built because of the surplus in Montgomery County. A second church and library are proposed. (Figure 1)

The gently rolling hills, mature trees, and pond of the old farm have been retained with minimal site grading. The community is organized into several distinct neighborhoods, each with its own character, including the Old Farm District that incorporates the restored original farm house, the Hill District, the Gatehouse District, the Lake District, and Midtown/Downtown adjacent to the shopping mall. A major structural statement is the divided boulevard connecting the west entry circle at the school site with the semicircular recreation center site. Landmark structures terminate vistas at several points. (Figure 2) The Built Form analysis illustrates the relatively fine and varied grain, mix of housing types, and coherent pattern that has been achieved in the residential areas. (Figure 3)

Laguna West

Set on a flat, treeless former rice paddy, the 1018 acre site of Laguna West is almost three times the size of Kentlands and is projected to have about twice as many residents: 3300 dwelling units and a population of 8-10,000. Begun in 1990, buildout was initially anticipated to occur in 7 years, but after 5 years of financial difficulties, it is estimated to be no earlier than 1998 for single family homes, and uncertain for apartments. To date, only 350 homes have been built, but the pace of development has recently picked up. Besides residential areas, there is to be a community center with civic, retail, and office space, as well as a church, day care center, and one elementary school. Light industrial space is adjacent to the center and includes an operating Apple Computer plant, which is expanding. Located about 12 miles south of downtown Sacramento but outside the city limits, recent tract developments of conventional design surround Laguna West. Like Kentlands, it will function as part of the larger metropolitan region for jobs and services. It is within commuting distance (30 minutes) to both downtown Sacramento and Stockton. (Figure 4)

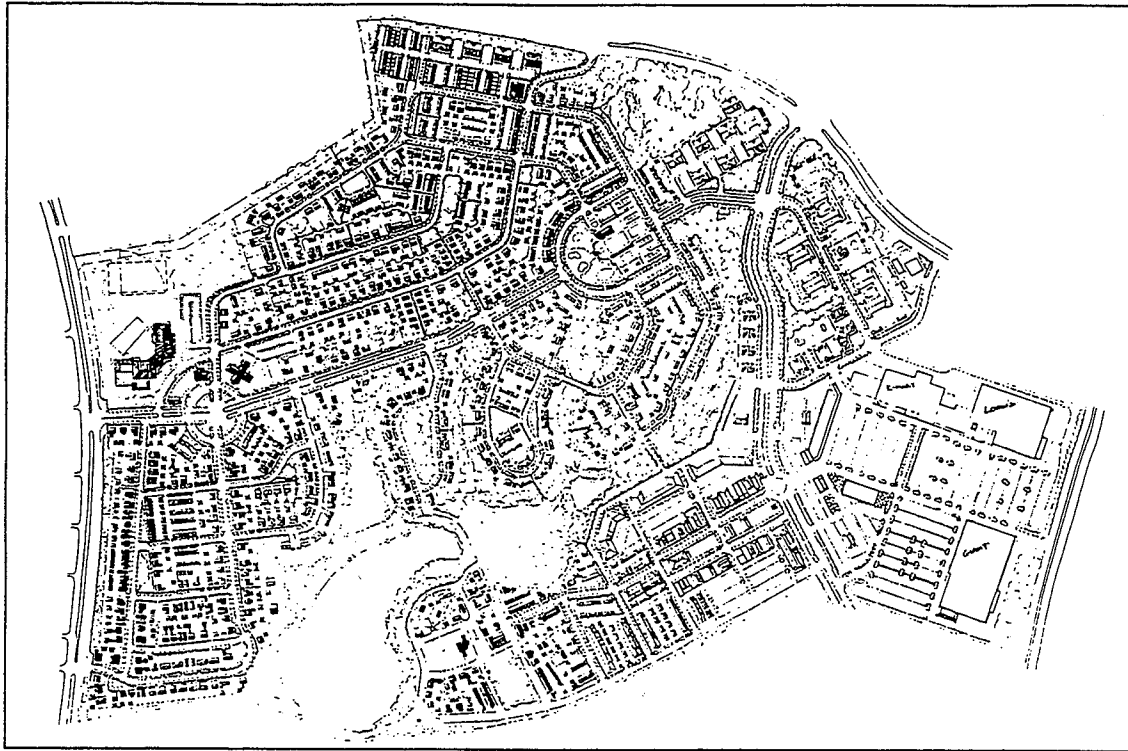


Figure 1: Site Plan: Kentlands

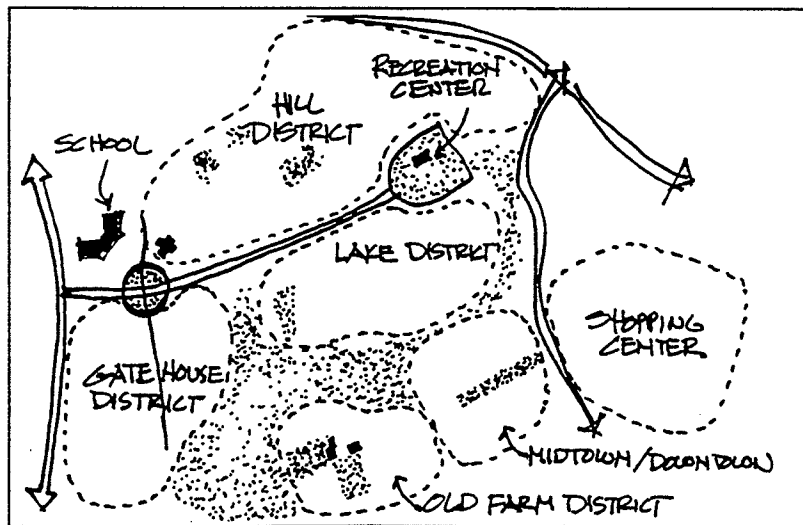
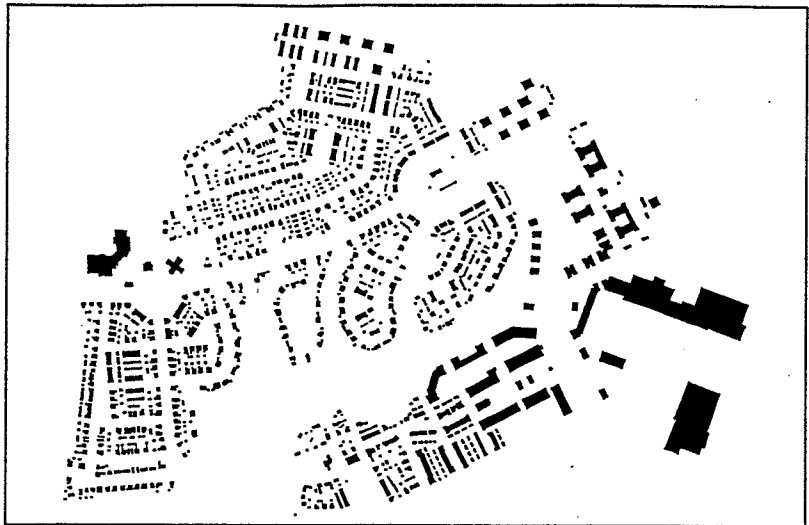
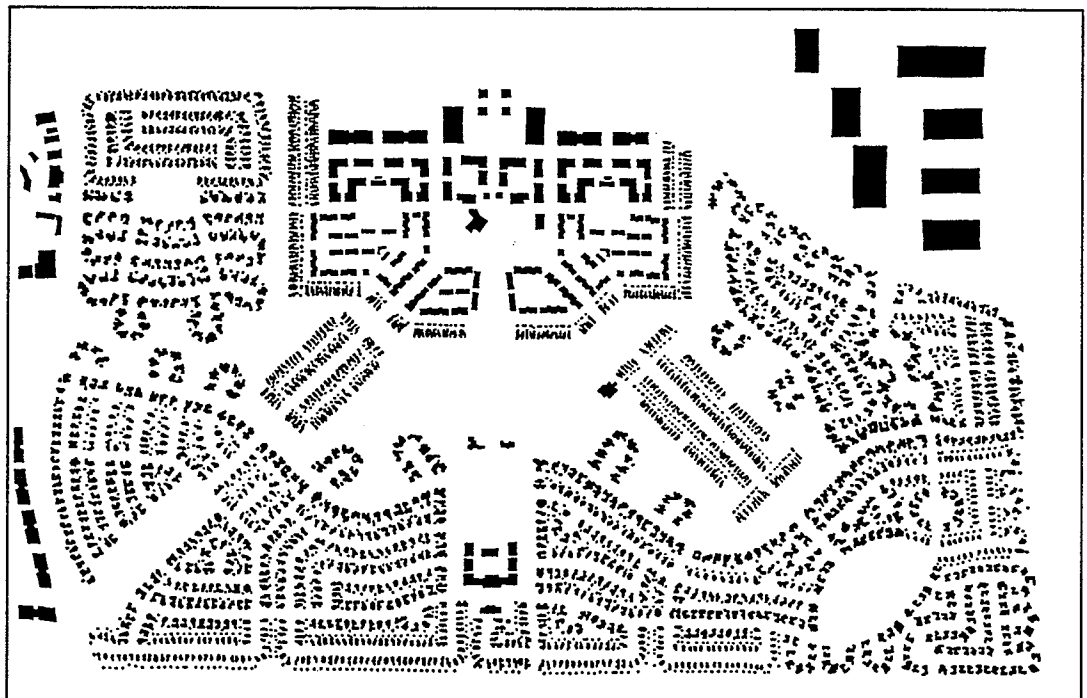


Figure 2: Structure: Kentlands

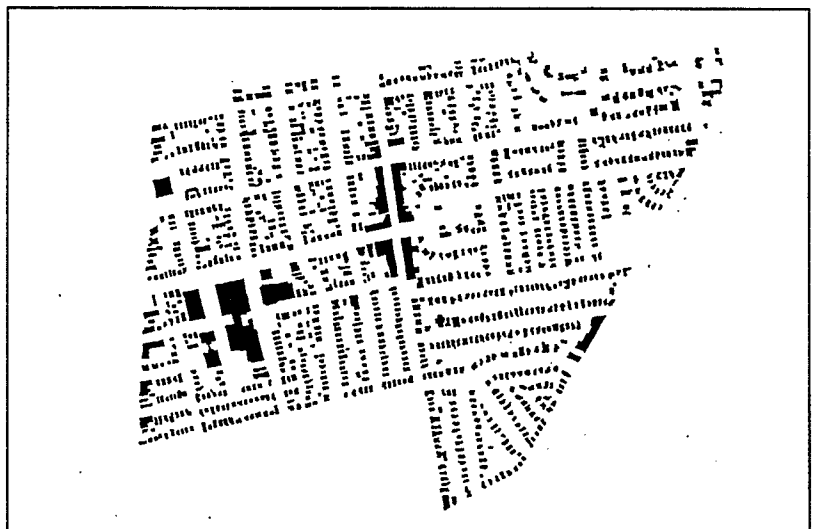
BUILT FORM PATTERNS



KENTLANDS



LAGUNA WEST



ELMWOOD

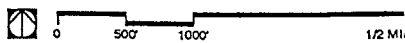


Figure 3: Built Form Patterns

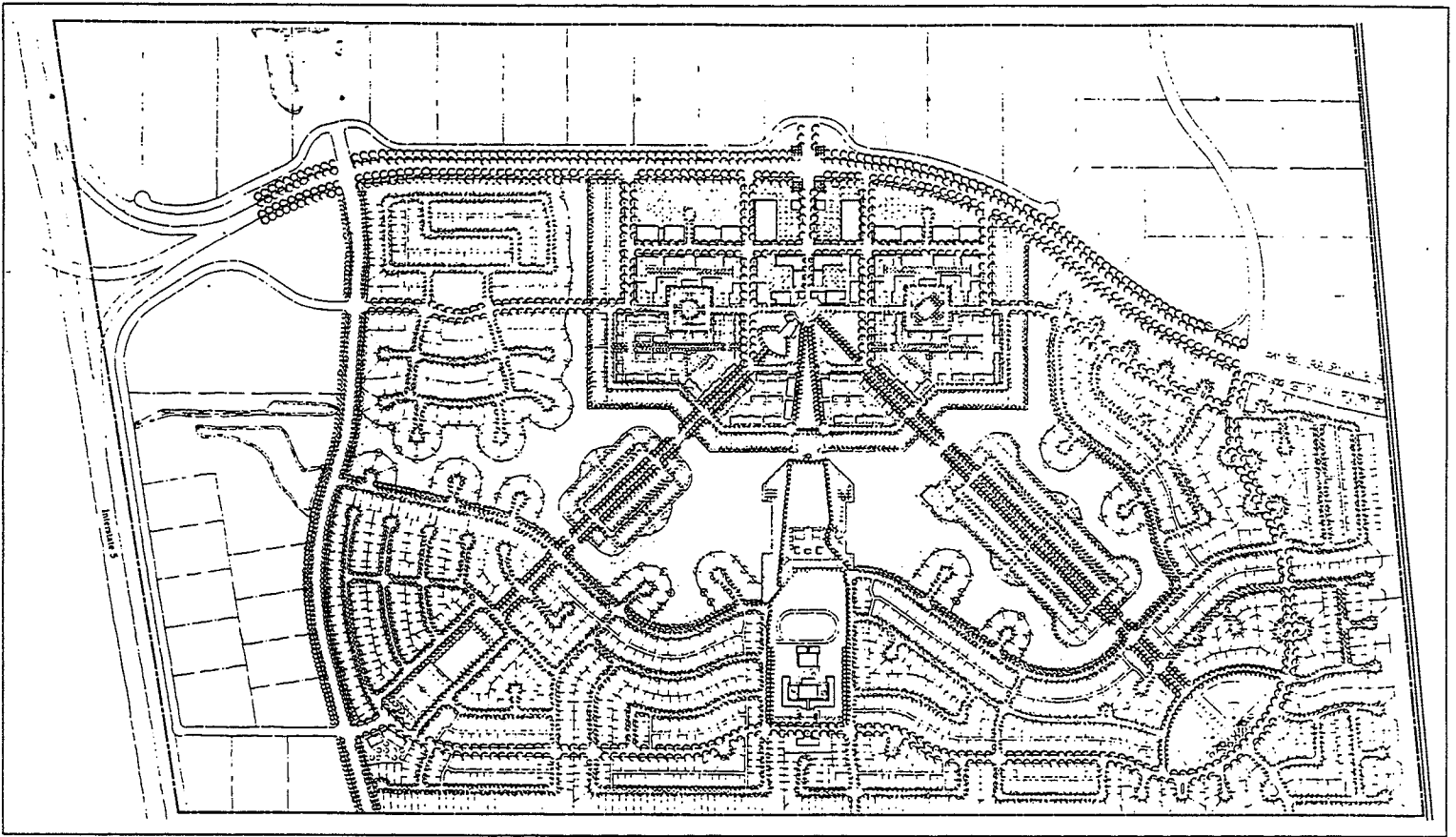
The most striking design features of Laguna West are the formal axial layout and lagoons which at first glance might suggest Versailles superimposed on Irvine. (Figure 5) According to the designers, the radial scheme is intended to compensate for the flat uninteresting site by creating a strong focus and a grand scale. Three axes converge on a community center, which is to contain pedestrian accessible retail and office space. Two of these axes are vehicular streets over one half mile long that lead from the community center into neighborhoods; the center axis is a greenway that leads to a park, elementary school, and day care center. (Figure 6) The Town Hall, recreation and community center, has been built, as well as the day care center and a church, but developers for the adjacent retail and office structures have not yet been identified. (Figure 7) Major artificial lakes define the southern edge of the community center and intersect the axes. These ostensibly serve the ecological function of purifying runoff by natural means before entering the adjacent wetland. Compared with Kentlands the built form pattern is more coarse and repetitive, and lacks the mixing of housing types and sizes at the scale of individual blocks. It also lacks a sense of clearly differentiated neighborhoods which does so much to make Kentlands an interesting place to live.

Elmwood: A Traditional Streetcar Suburb

Begun early in the twentieth century, the Elmwood district of Berkeley is much like streetcar suburbs of the same era found in other parts of the country. Originally an area of large estates, these were subdivided into several tracts including Elmwood Park, Claremont, Berry Bangs, University Villa, Bateman, Parkside, and Homeview in the housing boom following the 1906 San Francisco earthquake. Like most other streetcar suburbs, Elmwood began as a true suburb, set in open land away from the central city, but after nearly a century of urban infill and expansion, it is now an integral part of the East Bay metropolis. Although the original 1905 Elmwood Park tract was quite small, bounded by Russell, Prince, College, and Claremont, the tract and its surrounding area are often referred to as "Elmwood". Today it is a pleasant walkable neighborhood of what appear to be mainly single family homes, but some of these have been adapted for apartments or duplexes. In pattern the Elmwood district is a modified rectilinear grid made up of blocks of varied sizes; the grain of the built form is fine and varied. Unlike the neotraditional models, it has no obvious formal design elements. In an area of about 225 acres, less than two thirds the size of Kentlands, there are approximately 2300 dwelling units including about 1100 single family residences housing a total population of approximately 5000. (Figure 8)

Character

The sense of Kentlands is markedly different from conventional suburban development, with strong architectural references to the past that blend Federal, Classical Revival, and other styles. The



Illustrative

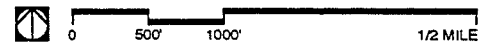


Figure 4: Site Plan: Laguna West

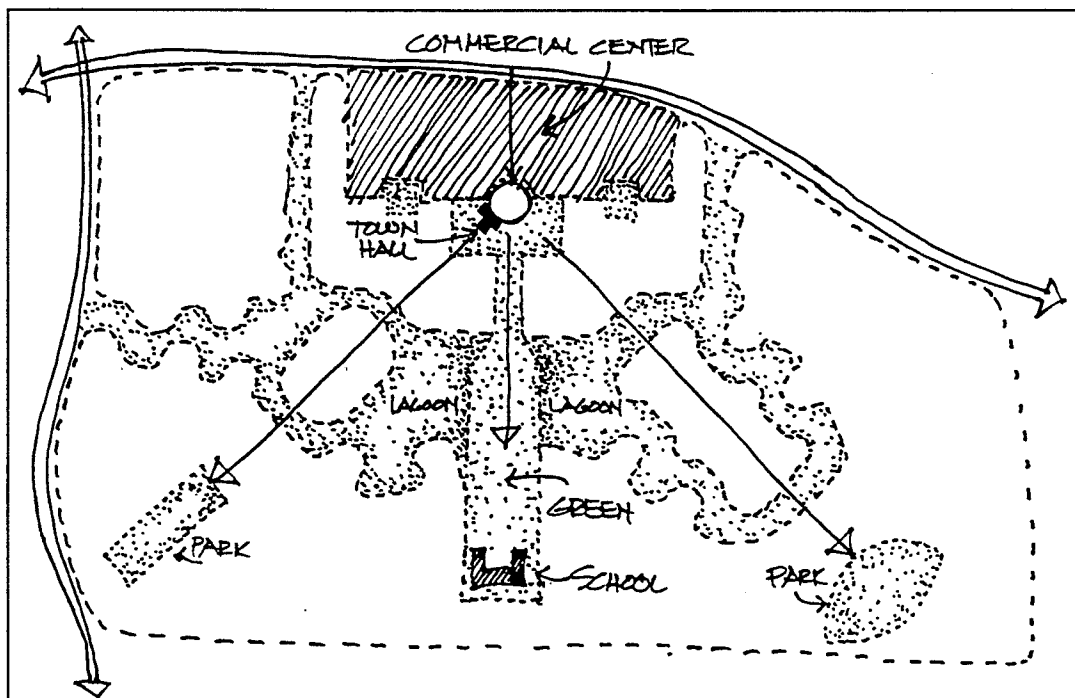


Figure 5: Structure: Laguna West

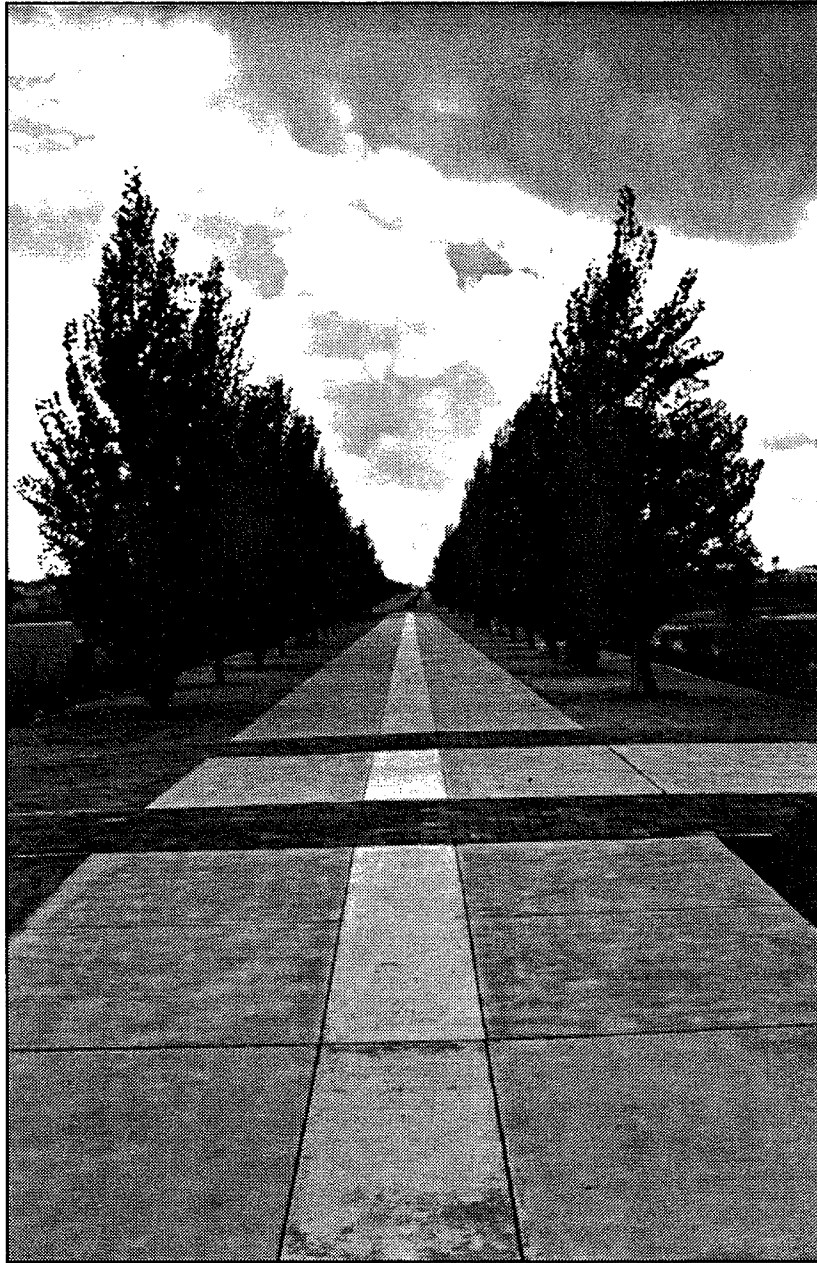


Figure 6: Main axes converge at the Community Center, Laguna West



Figure 7: Community Center, Laguna West

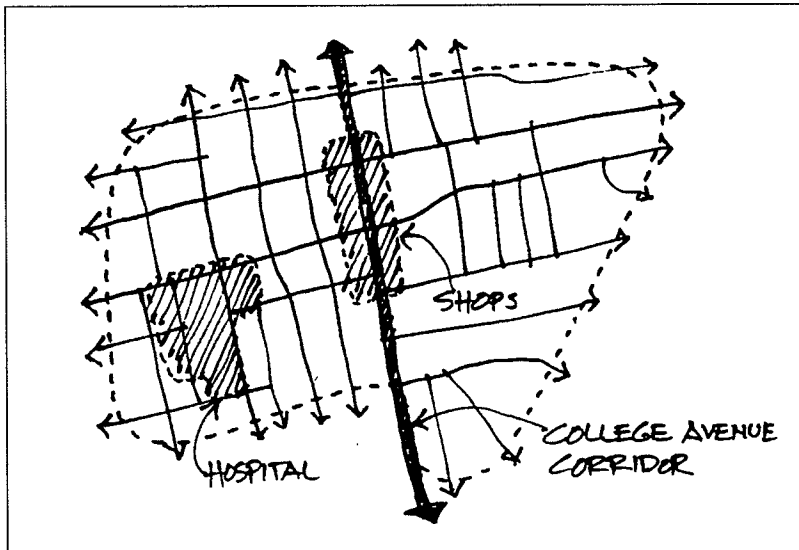


Figure 8: Structure: Elmwood

feeling of the development recalls older, intimately scaled towns in the Maryland/Virginia vernacular with white picket fences, stone planters, and picturesque alleyways and carriage house courts. (Figure 9) An instant "historic" image has been created for the place, although it is a rather pleasant image that blends with the authentic history of the old farm buildings. An enormously important ingredient of its character is the landscape which retains many mature trees and topographic features. Grading and siting of buildings have been unusually sensitive to the natural setting. Provision of alleys with garages has a major impact on street character by eliminating garage doors and driveways from streets; moreover, the back lanes and carriage house courts are often charming and explorable. (Figures 10 and 11) Laguna West, in contrast, has the sense of a late twentieth century suburb with rows of single family homes lined up along barren curving streets. There are subtle differences, however. There is a much stronger sense of "streetscape" than in most suburbs since many houses have front porches and yards, and garages are set to the side or back, avoiding the "garagescape" street image. (Figure 12) In contrast to Kentlands, there is much less apparent architectural control and historicism. Presumably this was intentional in order to attract Sacramento home buyers.

Elmwood, in contrast to both, seems to have grown incrementally, creating a homey, comfortable feeling. Since homes were built individually on a lot-by-lot basis by varied builders and architects, they are of many styles, from craftsman shingle style, to classical revival or Mediterranean. The hand of a single designer or planner is not felt. Houses have front porches that provide a transitional space from the street, and garages are typically small and situated near the rear corner of the lot. Each street is unique and has visual interest. Mature trees and sidewalks with planting strips line the relatively narrow streets. (Figure 13)

Housing Density and Mix

Both neotraditional developments, particularly Kentlands, have a greater mix of housing types per unit area than conventional suburbs, and also incorporate granny flats. Densities are also somewhat higher than is typical of other suburbs. (Figures 14 and 15)

In Kentlands housing types include single-family homes, row houses, condominiums, and apartments. Many garages have living units (granny flats) above. Homes are 'traditional' in style with front porches, wrought iron railings, and much brick and stone with traditional detailing vaguely in the Maryland/Virginia vernacular. Considerable architectural variety is achieved even at the scale of a single block through changes in detail, color, topography, or through house types. (Figure 16) Lot sizes range from small town house lots up to quarter acre custom house lots. Lot frontages are 22' for rowhouses, 44' for small detached houses, 66' for large detached houses, and 88' for estate detached houses. Prices in 1992 ranged from \$189,000 for townhomes, \$200,000 for



Figure 9: An “instant” historic image has been created for Kentlands

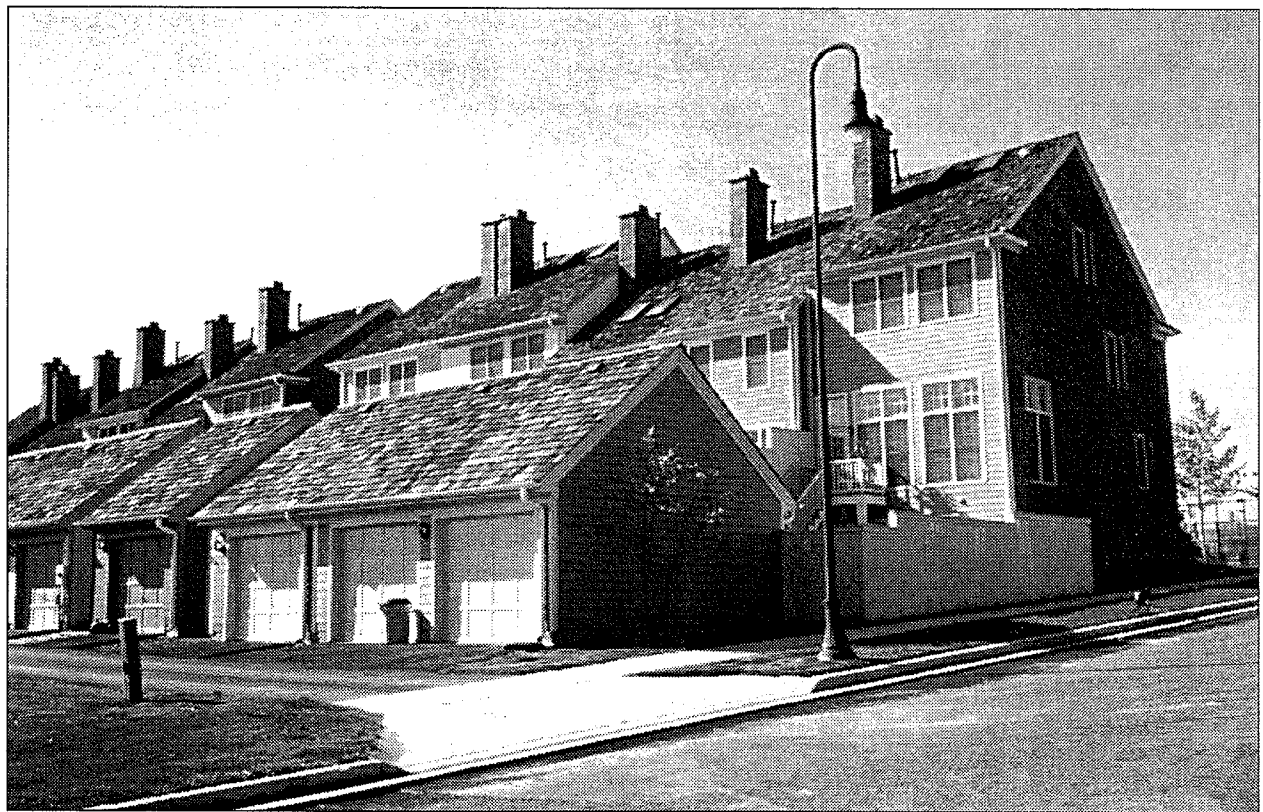
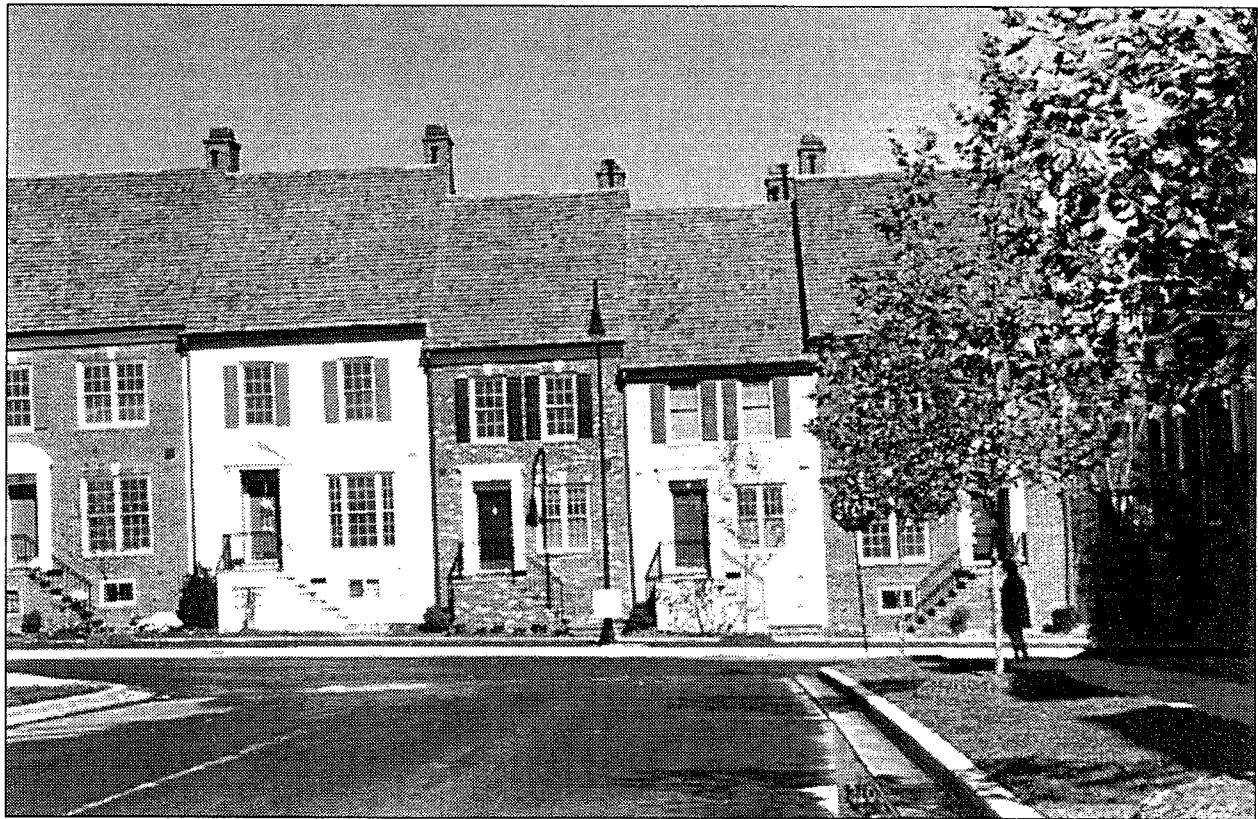


Figure 10: Street appearance is improved by placing garages in alleys, Kentlands. A: Front, B: Rear



Figure 11: Carriage house courts, with granny flats above garages, are often charming and explorable, Kentlands.

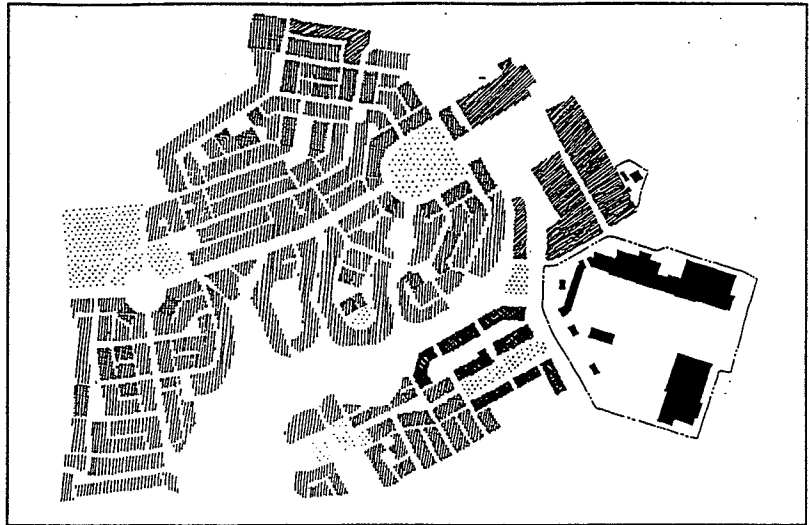


Figure 12: Most homes in Laguna West have front porches, and garages are set to the side or back to avoid the “garagescape” street image.

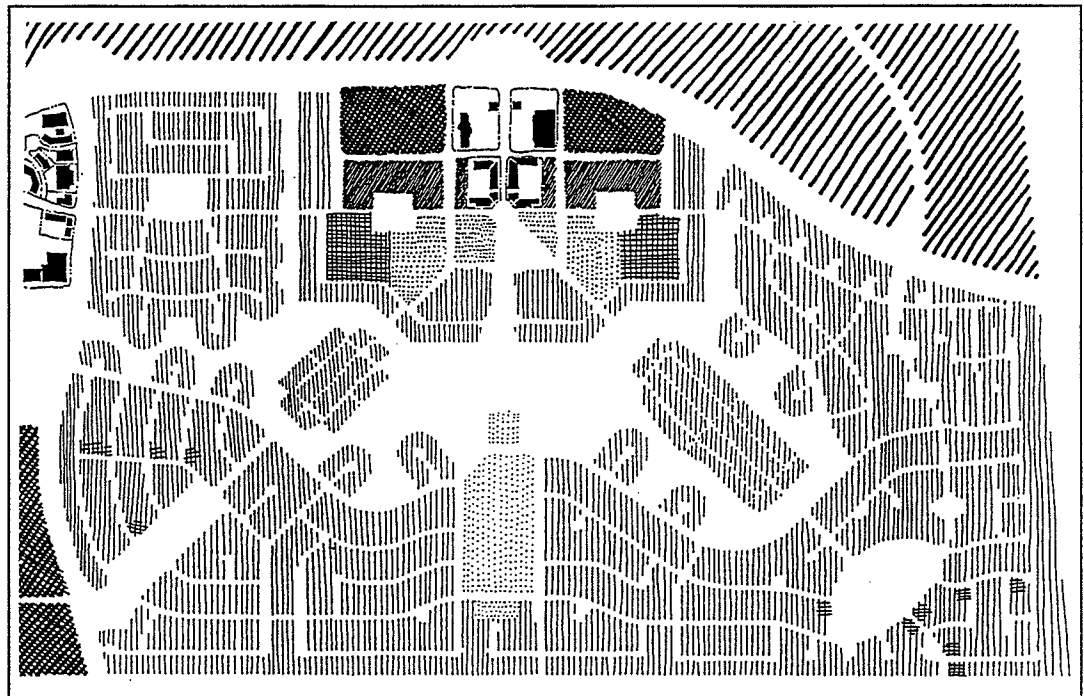


Figure 13: The incremental development of Elmwood has helped create a comfortable neighborhood feeling.









LAND USE PATTERNS

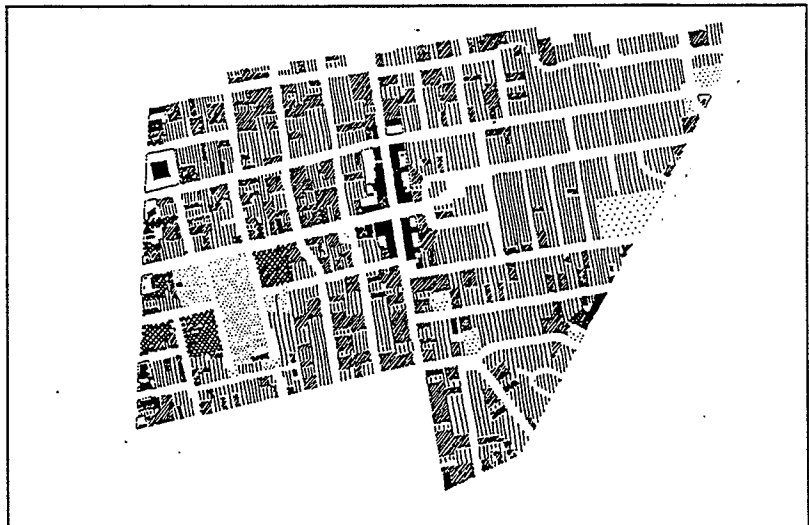
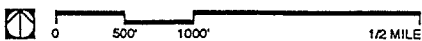


KENTLANDS



LAGUNA WEST

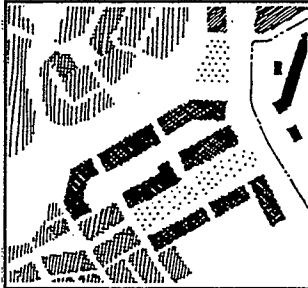
-  SINGLE FAMILY DETACHED
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-  MULTI-USE
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-  PROFESSIONAL OFFICE
-  LIGHT INDUSTRIAL
-  CIVIC/INSTITUTIONAL



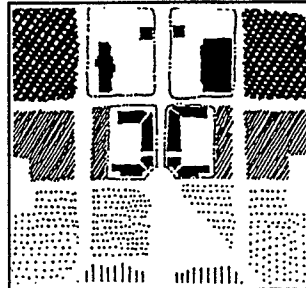
ELMWOOD

Figure 14: Land Use Patterns

Kentlands



Laguna West



Elmwood

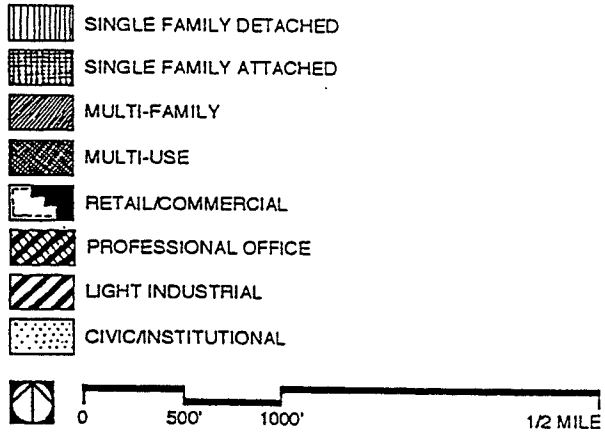
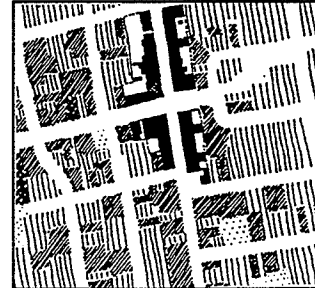


Figure 15. Land Use Patterns, Commercial Centers



Figure 16: Homes in Kentlands are “traditional” in style with front porches, wrought iron railings, and much brick and stone with traditional detailing.

cottages (1500-1600 sq. ft.), to \$235,000 - \$350,000 for single family detached homes (2200-2800 sq. ft.), and \$400,000 - \$500,000 for custom homes.

The residential mix of Laguna West is similar to that of Kentlands, with apartments (not yet built), condominiums, carriage homes, and single family homes. However, except for granny flats, dwelling types are not mixed within a single street or block as they often are in Kentlands. Although there are no row houses, there are closely spaced zero lot line homes on the Lagoon. Many of the garages have usable living spaces above (granny flats). (Figure 17) Lot widths are 34, 45, and 60 feet. Single family home prices range from \$140,000-\$224,000 (1300-2650 sq. ft.) and \$400,000-\$600,000 for custom homes (3000-5000 sq. ft.). Carriage homes (zero lot line) on or near the lagoon range from \$120,000-\$190,000.

On most streets of Elmwood houses vary in size, from modest bungalows to large homes with several bedrooms. Lot sizes are typically 30-40 feet wide by 120-135 feet deep. (Figure 18) Although the single family house is the predominant residential form, several apartment buildings are situated on or near College Avenue, and many are scattered throughout the neighborhood, particularly west of College Avenue. Most of these are harmonious in scale and style with the single family character of the neighborhood.

Residential densities in Kentlands are 5-8 d.u./net acre for single family homes to 17 d.u./net acre for row houses, and in Laguna West, 1.28 - 6.5 d.u./net acre for single family homes, 15 d.u./net acre for carriage homes (zero lot line single family), and 17-25 d.u./net acre for apartments and condominiums. Most single family areas of Elmwood average 8 d.u./net acre, with a range of 6-10—higher than either of the neo-traditional neighborhoods. In terms of gross densities (all uses including streets and open space), Elmwood averages 10.22 dwelling units per acre; at buildout Kentlands would have 4.78 and Laguna West would have 3.24 dwelling units per acre. Thus, the traditional neighborhood of Elmwood has substantially higher gross residential densities (including retail and other uses) than either of the neo-traditional communities. This is partly because Elmwood has so little open space compared with the neo-traditional developments.

Public Open Space

Open space in the form of parks, playing fields, and water bodies is a major design feature in both neotraditional developments and is much more plentiful than in most conventional suburbs or traditional neighborhoods. (Figure 19)

In Kentlands public open spaces are many, small, and varied ranging from village greens, to pond or recreational park. (Figure 20) About 100 acres or 28% of the site are devoted to open space. In Laguna West about 205 acres, 20% of the site, are devoted to public open space, of which about 68 acres or one third of the open space are shallow lagoons. (Figures 21 and 22) There will be several parks, 4 large and 3 smaller. Presently, the open spaces in Laguna West seem large—perhaps



Figure 17: In Laguna West homes range from small zero lot line homes and bungalows to large custom homes. There is much less apparent architectural control and historicism than in Kentlands.

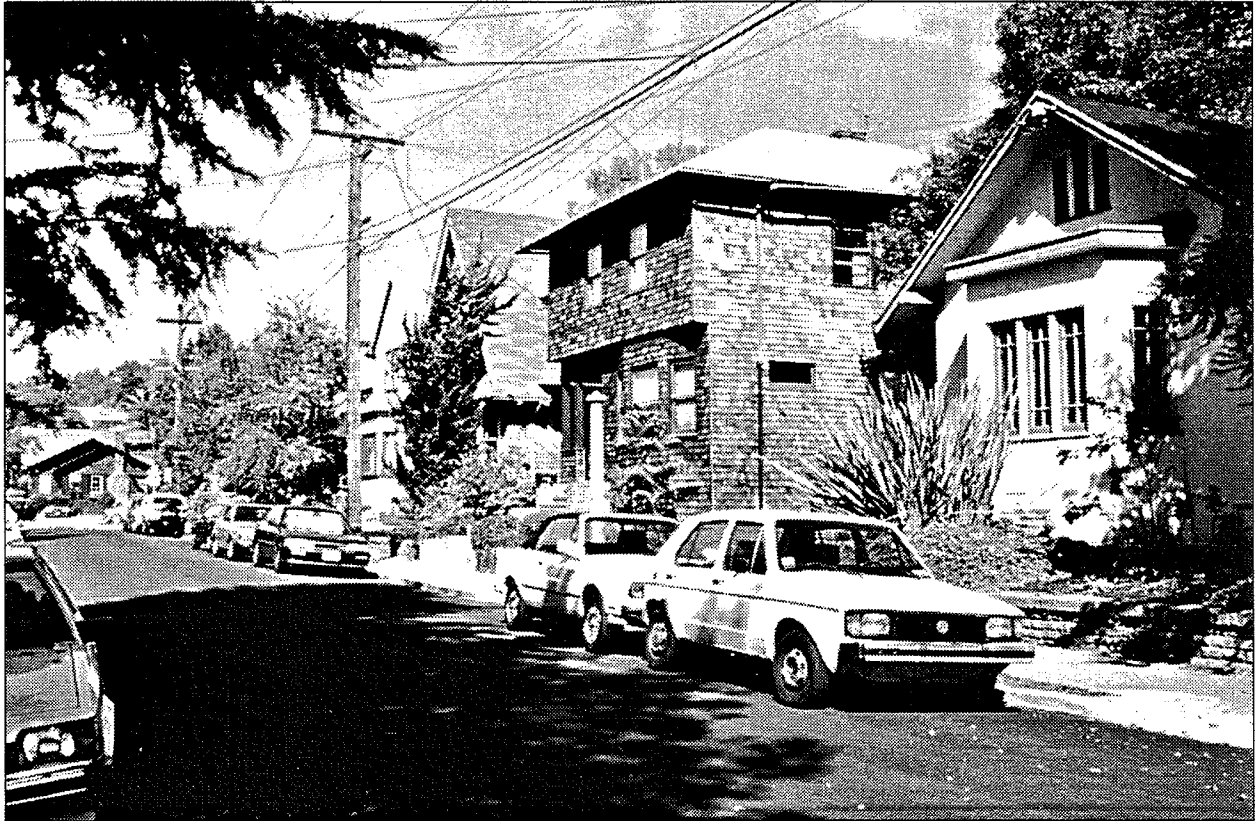
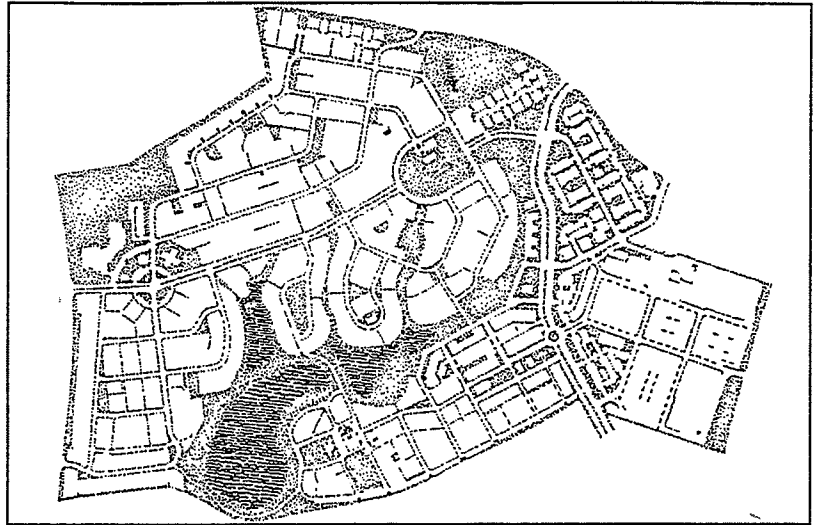
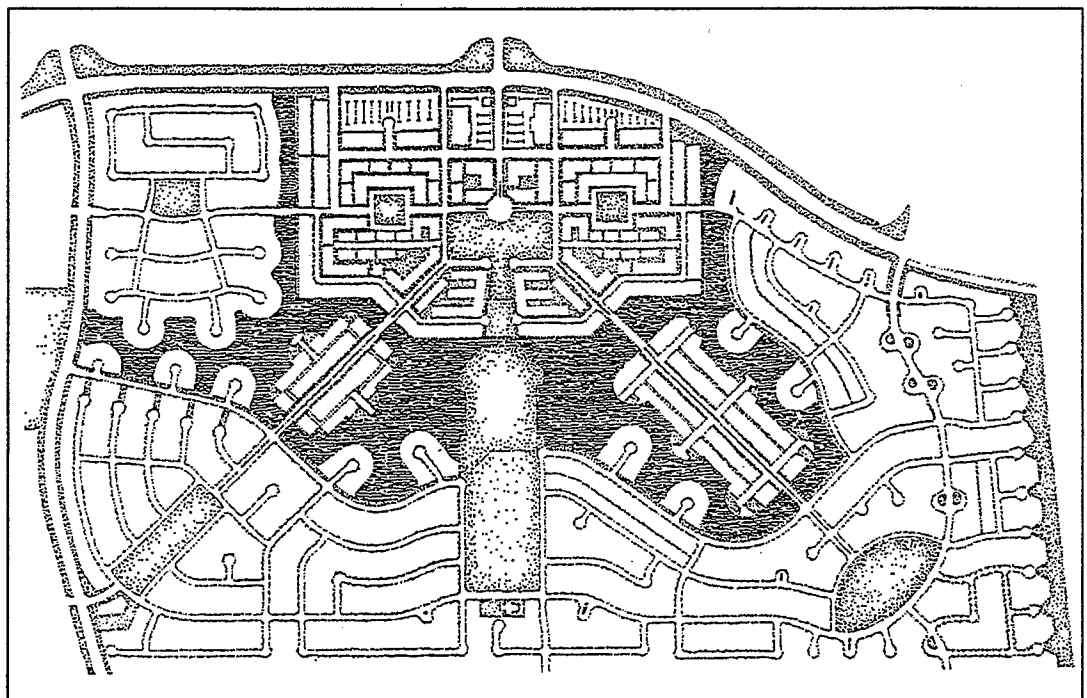


Figure 18: In Elmwood homes were built individually on a lot-by-lot basis by varied builders and architects and are of many styles, from craftsman shingle style, to classical revival or Mediterranean.

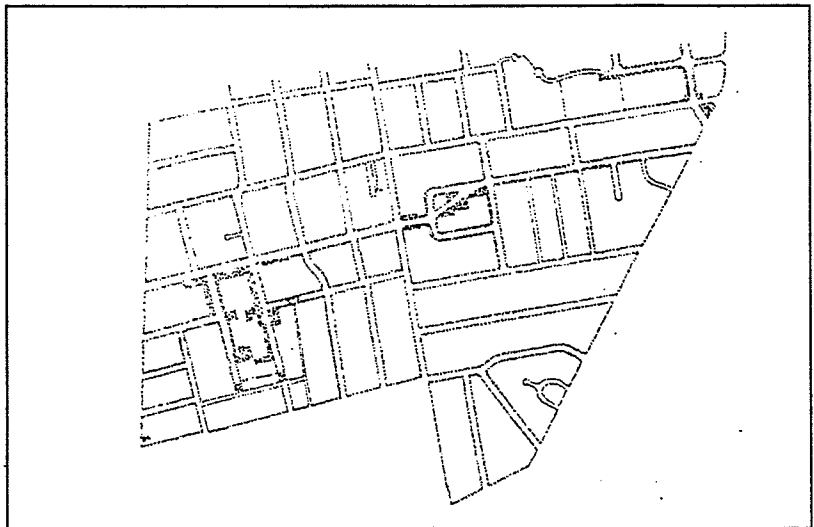
PUBLIC OPEN SPACE PATTERNS



KENTLANDS



LAGUNA WEST



ELMWOOD

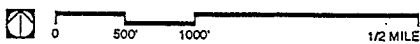


Figure 19: Public Open Space Patterns

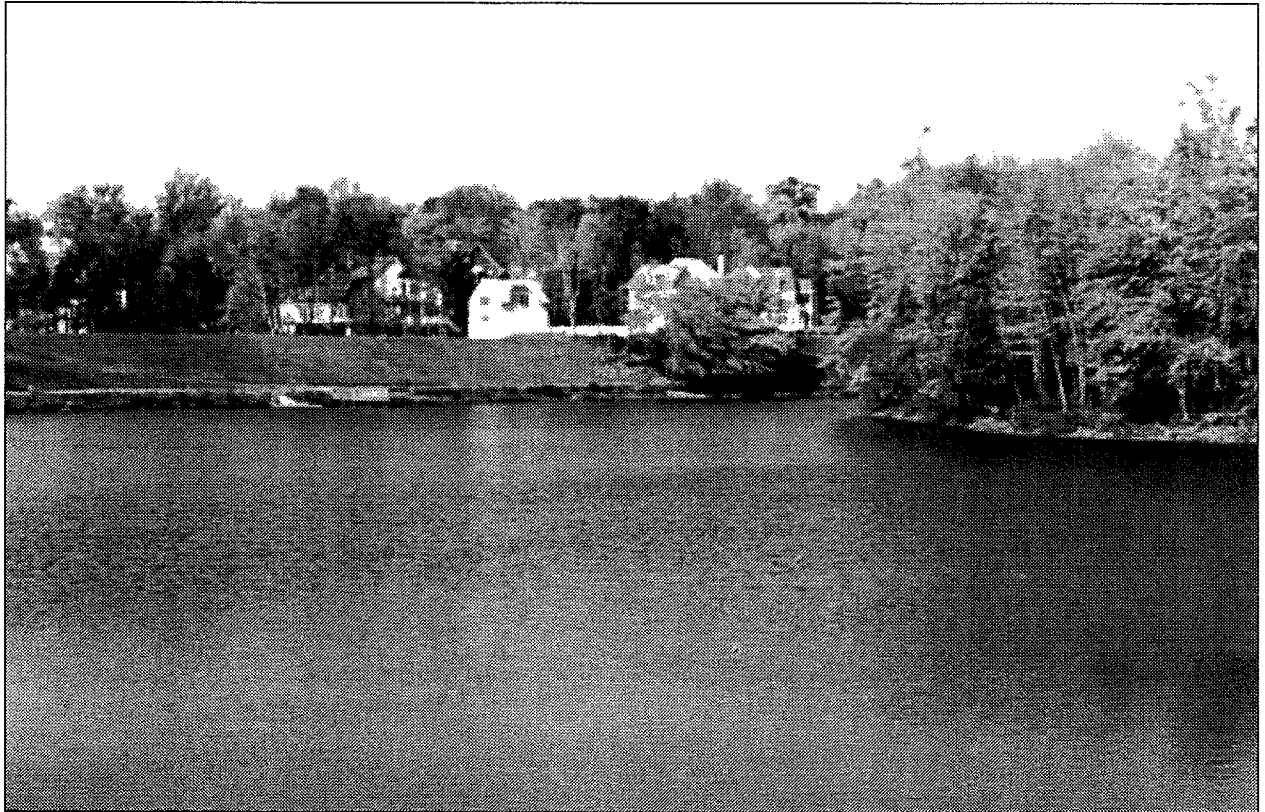
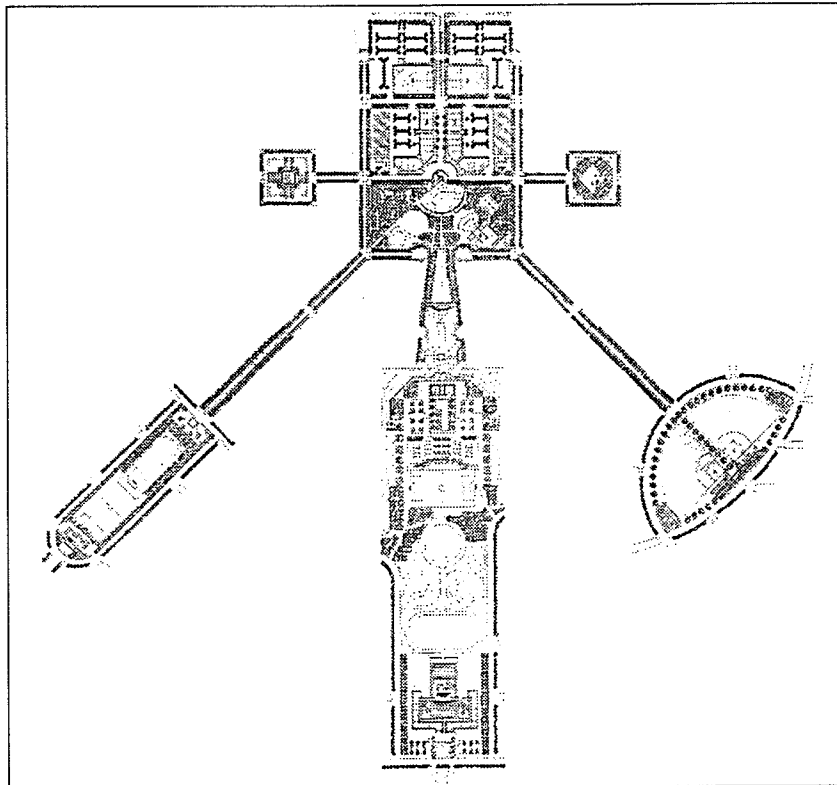


Figure 20: In Kentlands public open spaces are many, small, and varied and include, village green (A) to pond (B) or recreational park.



**Figure 21: Public open space, Laguna West
(Courtesy of Calthorpe Associates)**



Figure 22: In Laguna West about one third of the open space or 68 acres are shallow lagoons.

too large—and lack character. Not only are they expensive and difficult to maintain, but some of the spaces are too large and empty to feel comfortable in, at least in their present state; this could change with landscape design. A striking characteristic of Elmwood, especially in comparison to these neotraditional developments, is how little public open space there is in the neighborhood—there are virtually no parks or playgrounds within the district, although there are major regional parks and city parks nearby. This lack of local open space may be its major shortcoming.

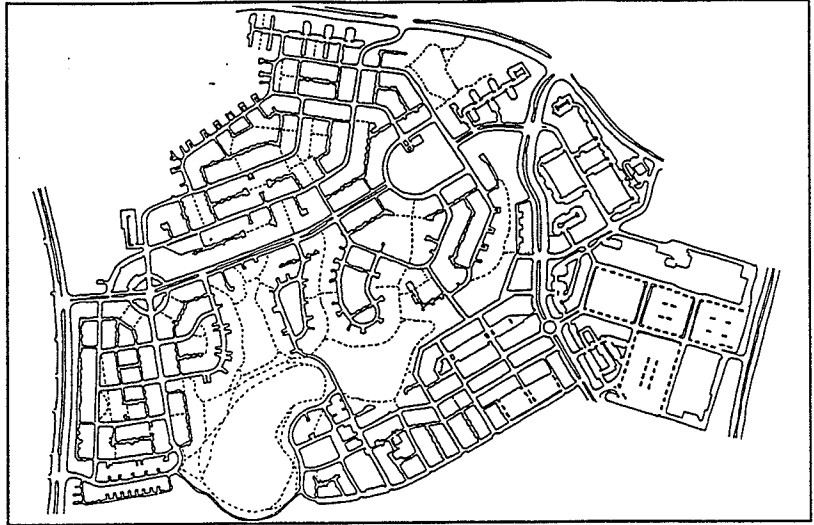
Street Design and Pattern

In both the neo-traditional and traditional study areas, local streets are somewhat narrower than in conventional developments and are provided with sidewalks and street trees that are maintained by the community; both are unusual in suburban developments today. Street patterns are more interconnected with less use of loops and cul-de-sacs, particularly in Kentlands. Both neotraditional developments incorporate formal design elements rarely found in conventional suburbs: axial streets in Laguna West and a boulevard connecting two formal spaces in Kentlands. (Figure 23)

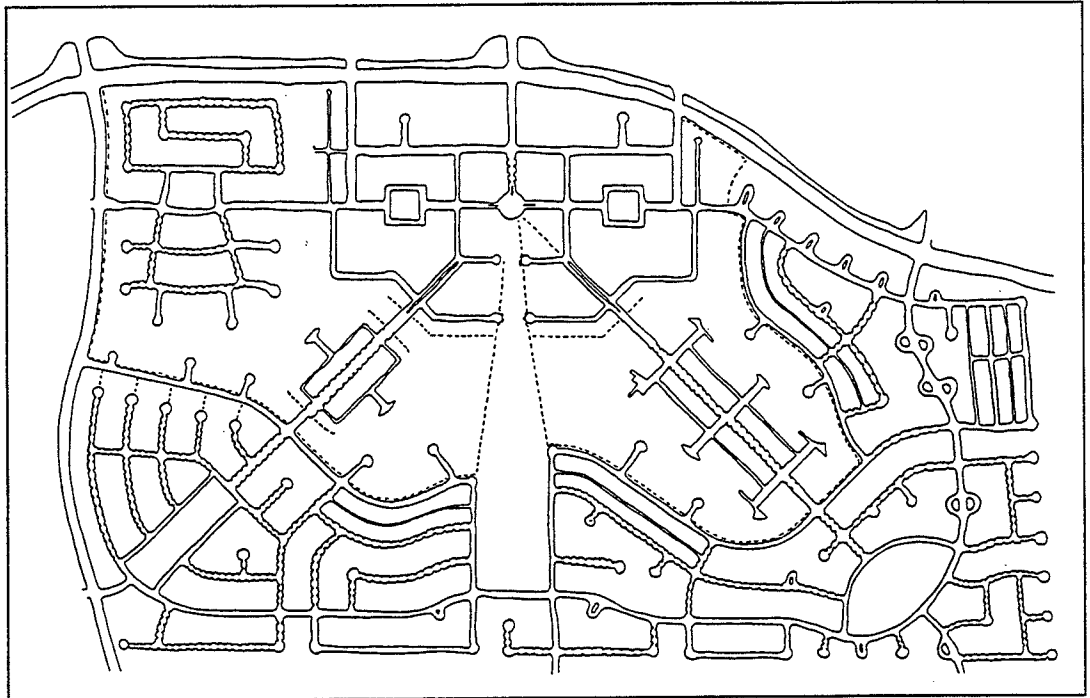
In Kentlands streets are relatively narrow: within the 50' right-of-way the 36' pavement consists of two 10' driving lanes and two 8' parking lanes. They are provided with 4-5' sidewalks and a planting strip throughout. (Figure 24) Alleys are 26' wide with a 12' paved lane and 7' grass strips on each side. Street trees are maintained by the city and line both sides of wider streets, but only one side of narrower streets. There are numerous straight, parallel streets and right-angle intersections, as well as alleys. However, the street layouts of each district are different and, when combined with alleys and carriage house courts, a very explorable network is created. Streets are organized largely in modified, warped grid patterns—not a checkerboard—with some use of cul-de-sacs in the alleys and loops near the lake. Some neighborhoods have less interconnectedness than others; for example, vehicular connections between the Midtown district and other districts is tenuous because of the location of a wetland. Pedestrian and bicycle networks are quite fine-grained and well-connected, with every district having numerous alternate pathways. Many of these parallel the streets and alleys. Most of the pedestrian routes offer visual interest, with small scale detail and variety, as well as changing vistas and focal points. The pathways would seem to work well for children playing and visiting friends and for adult recreation, but it is unlikely they would satisfy routine functional needs except for those who live near the shopping center, recreation center, or school.

In Laguna West a major design statement is made with the 3 axial boulevards radiating from the center, but much of the street network on which these are overlaid is not strikingly different from that of other suburbs where few streets are straight and cul-de-sacs are plentiful. Street patterns

CIRCULATION PATTERNS

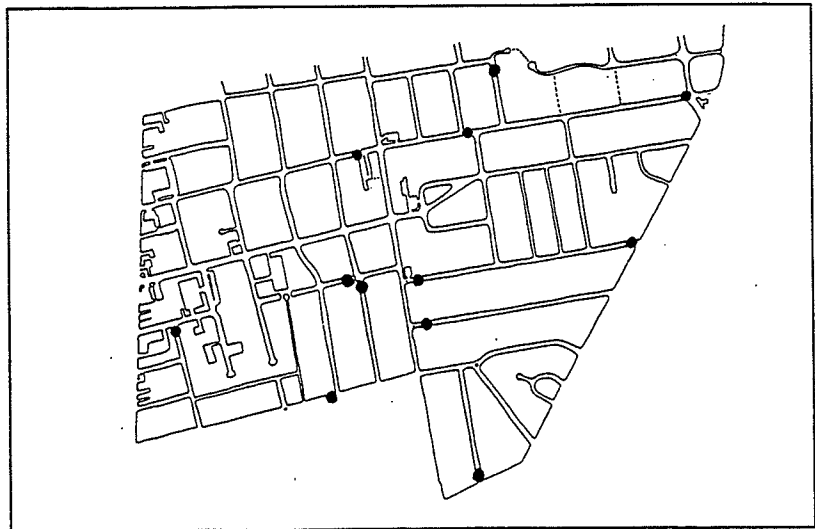


KENTLANDS



LAGUNA WEST

- "Berkeley Barriers"



ELMWOOD

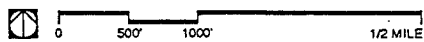


Figure 23: Circulation Patterns

within the residential areas are modified, warped grid patterns with a number of cul-de-sacs. Unlike some suburbs, there are sidewalks and some areas have a gravel jogging trail. Given its flat, barren terrain, and unfinished state, it is not an interesting place to go for a walk. Major streets are standard width to accommodate fire trucks, but local streets are narrower (30 feet). One major difference compared to conventional suburbs is the placement of trees in wells that project into the street space and break up the parking strip on the axial streets and in some neighborhood locations. When the trees mature they will create the sense of a narrower street, but presently some residents complain that the wells are difficult to see and are hazardous, particularly when they lack trees. (Figure 25) Street trees in other areas are the responsibility of homeowners who are required to plant 2 street trees to be maintained by the Landscape and Lighting District.

The street pattern of Elmwood, a modified rectilinear grid with blocks of varying sizes, has no formal design features, although certain streets have thematic street trees. Four-way intersections predominate, but there are a few “T” intersections, 5 cul-de-sacs, and one loop. Mature trees shade the narrow streets (30 to 34 feet wide), which have parking, as well as sidewalks with narrow planting strips, along both sides of the streets. (Figure 26) To create quieter and safer streets “Berkeley Barriers”—large unattractive concrete planters that serve as traffic barriers—were installed midstreet to convert the interconnected grid pattern into one primarily of loops and cul-de-sacs for the motorist. These have in effect added 15 cul-de-sacs to the street pattern. However, it is important to note that grid continuity is maintained for the pedestrian and bicyclist.

Street patterns contribute significantly to the quality and character of a community and were analyzed comparatively in equal size areas for each development. (Figure 27) The total amount of land devoted to streets relates directly to infrastructure costs. The number of blocks, intersections, access points, and loops or cul-de-sacs per unit area affect the number of route options and ease of moving about. Comparative analysis of street patterns illustrates that Elmwood is clearly the most rectilinear of the developments. It also has the least amount of street within the unit analyzed—18,000 feet—despite its high level of interconnectedness; Kentlands has 24,000 feet and Laguna West has 19,000 feet. Elmwood and Kentlands have about the same number of blocks, 23 and 24 blocks per unit area, but Laguna West has only 16. Elmwood and Laguna West have the same number of intersections, 20 per unit area. However, Kentlands has 41, more than twice as many because of the large number of alleys. These create more route choices and thus a more explorable fine-grained network.

In terms of access into the study areas from outside, Kentlands has 22 points of entry to the study area, while Elmwood has 16, and Laguna West has only. When the entire development is examined, however, compared with Elmwood, both Kentlands and Laguna West are weakly connected with the surrounding urban context. In this sense they are no different than other suburban planned unit developments. Finally, when traditional and neo-traditional patterns are analyzed in



Figure 24: Streets in Kentlands are relatively narrow with sidewalks and street trees on both sides.



Figure 25: In Laguna West street trees on major streets are placed in wells that project into the street space to break up the parking strip. When the trees mature they will create the sense of a narrower street.



Figure 26: In Elmwood mature trees shade the narrow streets, which have parking, as well as sidewalks with narrow planting strips, along both sides of the streets.

	ELMWOOD (1905)	KENTLANDS (1989)	LAGUNA WEST (1990s)
Street Patterns			
Intersections			
Lineal Feet of Streets	18,000	24,000 (alleys 7,000)	19,000
Number of Blocks	23	24 (w.o. alleys 14)	16
Number of Intersections	20	41 (with alleys)	20
Number of Access Points	16	22	14
Number of Loops & Cul-de-sacs	1 (8 with "Berkeley Barriers")	10	15

Figure 27: Comparative Analysis of Street Patterns. Squares are 2000 feet on each side and contain approximately 100 acres. Intersections were defined as junctions of two or more through routes. Junctions with cul-de-sacs were not treated as intersections because cul-ce-sacs do not lead anywhere outside the immediate area.

terms of loops and cul-de-sacs—the essence of discontinuous suburban street forms—Elmwood has only 1 (8 including the traffic barriers); however, Laguna West with 15 loops and cul-de-sacs in the study area and Kentlands with 10 are far more suburban than Elmwood.

Comparing these patterns with suburban patterns of the 1960s through the 1980s, the neotraditional patterns generally have more lineal feet of street, more blocks, more intersections, and more access points than conventional suburbs. They have fewer loops and cul-de-sacs than the most recent suburban patterns (“lollipops on a stick”), but more than earlier suburban patterns such as “warped parallel” (1960s) and “loops and lollipops” (1970). (Figure 28)

Pedestrian Access

In the neotraditional developments pedestrian access is promoted through sidewalks, some pedestrian and bicycle ways, and through an attempt to create a path network that interconnects destinations such as parks, schools, civic facilities, and shops and services. Unlike most suburbs, both neotraditional residential developments attempt to integrate retail and office space by inserting a new form of pedestrian oriented shopping/office center into the development. The attempt cannot be said to be entirely successful to date. Several researchers have found that the distance Americans will walk for typical daily trips is quite limited, varying from 400 feet to about 1/4 mile. Unterman (1990) found that 70% of Americans will walk 500 feet for daily errands and that 40% will walk 1/5 mile; only 10% will walk 1/2 mile. Similarly, Barber (1986) found that the distance people walked for typical trips varied between 400 and 1,200 feet.

If these findings also apply to residents of neotraditional developments, the distances to many of the retail and service centers, especially in Laguna West, are too great to expect most residents to walk to them on a regular basis. Thus, for most residents these communities are likely to remain auto-oriented like other suburbs. (Figure 29) The difference is that there is a network of pedestrian routes that can be used for recreation by children and adults. According to informal reports, people from surrounding areas drive to Kentlands for the sole purpose of taking walks.

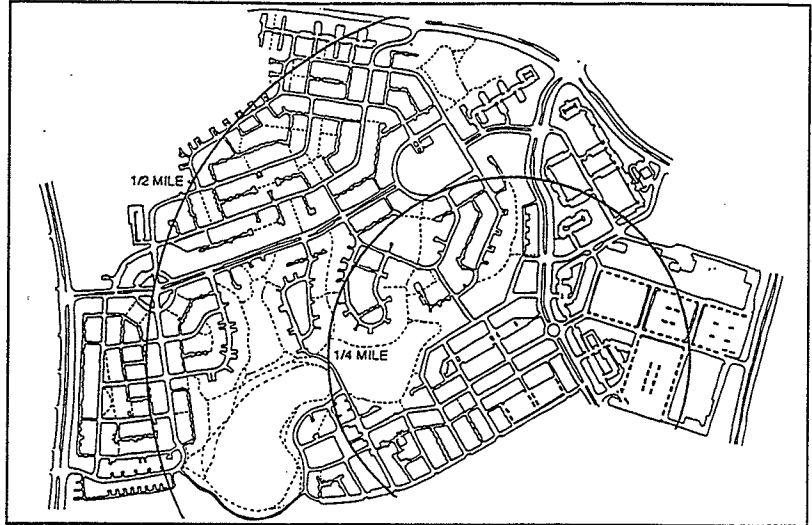
While the site does accommodate retail and commercial uses, residential connections to them are still somewhat auto-dependent. Most homes are a 5 to 10 minute walk from the shopping center (1/4 to 1/2 mile). Although the designers fought for a more intimate connection between the shopping center and residential areas, this battle appears to have been lost; the demands of automobile-oriented marketing so far have prevailed. The shopping center developer forced major compromises in the scheme that resulted in more separation from the residential neighborhoods. The result is a shopping mall segregated on the opposite side of a major arterial street. Midtown, the adjacent residential district is to be developed by 1996. (Figure 14) In Laguna West the center has not yet materialized—except for the community recreation building, the commercial sites are unbuilt.

	Gridiron (c. 1900)	Fragmented Parallel (c. 1950)	Warped Parallel (c. 1960)	Loops and Lollipops (c. 1970)	Lollipops on a Stick (c. 1980)
Street Patterns					
Intersections					
Lineal Feet of Streets	20,800	19,000	16,500	15,300	15,600
# of Blocks	28	19	14	12	8
# of Intersections	26	22	14	12	8
# of Access Points	19	10	7	6	4
# of Loops & Cul-de- Sacs	0	1	2	8	24

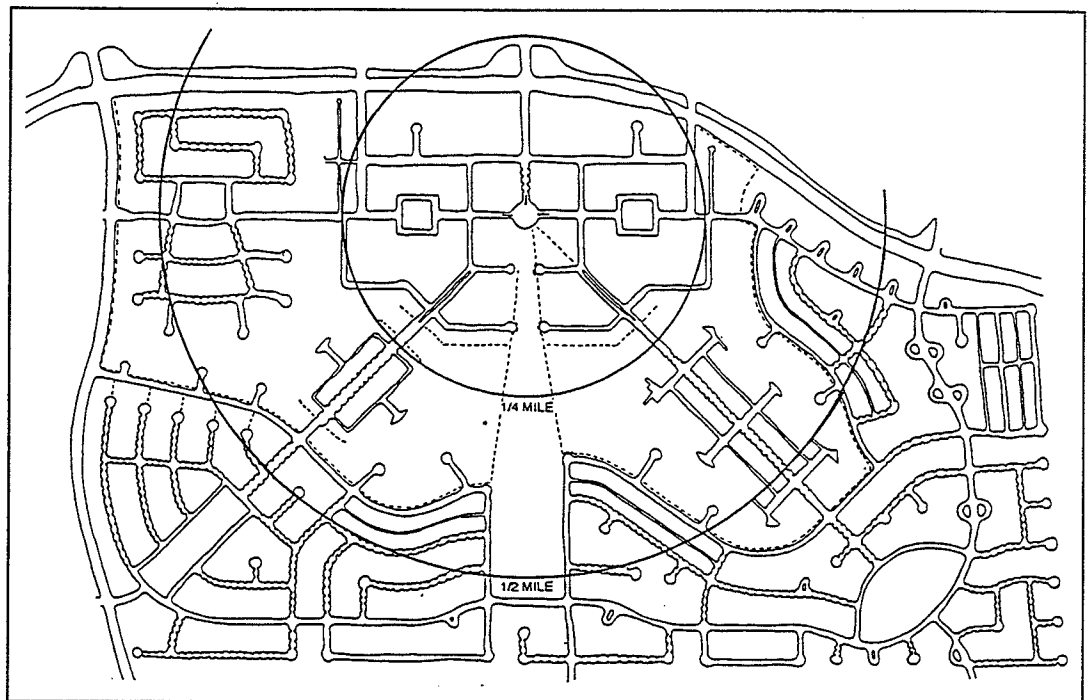
Figure 28: Comparative Analysis of Suburban Street Patterns.

From: Michael Southworth and Peter Owens, "The Evolving Metropolis: Studies of Community, Neighborhood, and Street Form at the Urban Edge," *APA Journal*, Summer 1993, pp. 271-287.

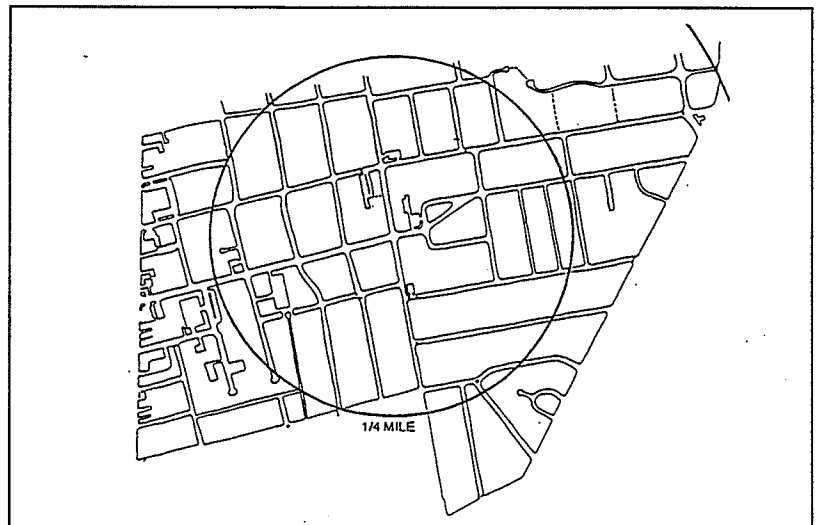
PEDESTRIAN ACCESS PATTERNS



KENTLANDS



LAGUNA WEST



ELMWOOD

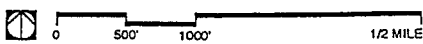


Figure 29: Pedestrian Access Patterns

About half of the residences are more than a 10 minute walk (1/2 mile) from the community center. Although Elmwood has no exclusive pedestrian or bicycle routes, the neighborhood works quite well for both, allowing interconnection and through-movement, while restricting and slowing vehicular traffic. The neighborhood, which admittedly has had nearly a century to mature, has a lively and quite successful local commercial center centrally located along College Avenue. Unlike the neotraditional developments, the commercial district is centrally located on College

Avenue and has numerous basic services, restaurants, and specialty shops. In time, both neotraditional developments might also support successful centers, but because of the land use patterns and density, they can never be as convenient as Elmwood. (Figure 15)

Transit

Both neotraditional plans incorporate regional access by public transit. In Kentlands a shuttle bus is provided to the Metro station, and in Laguna West a light rail station was initially proposed, but it is now not clear when or where it might be built. Both local and express buses serve the area, but service is rather infrequent. Thus, Laguna West is still largely auto-dependent for regional transportation. Elmwood, in contrast, has had good transit access from its inception, in fact, as in other streetcar suburbs, transit preceded and was the incentive for residential development. Although it was an inner suburb at the edge of urbanization when it was built, today the neighborhood is a contiguous part of the Berkeley-Oakland-East Bay metropolis, and has good access to San Francisco by automobile, bus, and subway. Nevertheless, access was better in the 1920s when the district was well served by local and regional street cars and boasted 36 minute access to San Francisco by rail and ferry—better than can be achieved by any mode today. Now public transit is by bus rather than streetcar and is readily available along the College Avenue spine which is less than a 10 minute (1/4 mile) walk for most neighborhood residents. Access to rail transit (BART) is somewhat more than 3/4 mile away.

Suitability for Children, Teens, and Elderly

The denser distribution and interconnection of a wider variety of spaces and destinations in Kentlands provides greater access and activity opportunities for children, teens, and elderly than in Laguna West. Alleys provide for a different kind of space, perhaps a more interesting place for teens and children to “hang out.” Alleys also provide more visual access to backyards, the suburban hideaways. Although alleys probably reduce privacy, they may promote more casual neighboring and spontaneity. Laguna West has less variety of street spaces for children's play and access to regional activity centers is currently difficult; for teens, it would probably seem a boring place to live much

like any suburb. However, the lake areas could potentially have special attraction for them, but there is only one park that fronts on the lake. Provision of sidewalks serves needs of children and elderly in both developments by making neighborhoods more explorable on foot, as well as on bicycle and skateboard for children. Both developments provide local shopping centers which, if developed as proposed, would make the areas more interesting for teenagers and more serviceable for elderly than most conventional suburban developments. However, according to a 1993 survey, the majority of residents in Kentlands (68%) and Laguna West (65%) do not have children living at home. (Market Perspectives, 1993) Except for its lack of local parks, Elmwood would seem to serve the needs of youth and elderly quite well, since it is walkable, has generally safe streets, and excellent access to the College Avenue shopping district. In addition, it has good access by transit to the larger city and region.

Market Success

According to the Market Perspectives survey, homeowners in Kentlands and Laguna West sense a higher degree of neighborliness than in conventional suburbs and value features such as front porches and alleys. Three quarters said they were more likely to walk in a neotraditional development, but only 9% said they used public transit regularly, possibly because service was infrequent or not yet available. A majority said that one of the things they liked most was the neighborliness and orientation to people in the developments. A common complaint was the lack of retail stores and services, as well as the slow pace of development. (Market Perspectives, 1993) Both developments experienced financial difficulties and home sales were slow, particularly in Laguna West which has built only 350 homes to date. However, it is difficult to say whether this is due to buyer resistance to neotraditional developments or to a generally slow real estate market.

Initially both projects suffered from poor phasing. Large amounts of infrastructure—streets, trees, lighting, open space, and public facilities were built in the first phase. At Kentlands home sales have caught up, but at Laguna West, which has suffered from the downturn in the California economy, housing has been slow to follow, creating severe financial problems. Moreover, the development pattern at Laguna West has been scattered, so that despite substantial investment, the built form lacks coherence.

CONCLUSION

A major achievement of the neotraditional and transit oriented development models has been the debate stimulated among designers, planners, developers, and consumers. To date, however, the ideas have had little impact on built urban or suburban form relative to the amount of

attention they have received, but it takes time for new approaches to be absorbed and to enter the mainstream.

Both neotraditional examples discussed here have a stronger sense of public structure than conventional suburbs. They also offer more interesting and cohesive streetscape, and Kentlands stands out in its sensitivity to the landscape and creation of interesting streets and pedestrian ways. However, neither of the developments achieves the ease of access to retail and office uses, mix of housing types, pedestrian access to daily needs, and overall connectedness found in many small towns or early twentieth century street car suburbs which the neotraditional models emulate. At minimum they represent modest improvements over most conventional suburban planned unit developments. In many instances the designers have been forced to compromise their conceptions to satisfy existing codes, environmental requirements, and developers' demands.

Like other suburbs, the neotraditional models are essentially anti-urban sanitized versions of the small town and exclude much of what it takes to make a metropolitan region work. Both are architecturally based and, especially in the case of Kentlands, are rather rigid architectonic visions that offer instant identity and instant community sense through control of built form. Developers of master planned communities, from early London models such as Bedford Park or Hampstead Garden Suburb down to late twentieth century American examples, often desire to create a strong image to attract home buyers. But we need to ask how well these architectonic visions of the ideal community fit the needs and desires of future residents. Neither example allows or encourages the creation of identity over time based on the needs and aspirations of the inhabitants. Community and neighborhood are spoken of as physical rather than social entities, as if community resulted from built form rather than from the people who inhabit it. As a reaction to the anonymous sprawl of suburbia, the tendency has been for the designer to superimpose an image on a development before it is even occupied, to provide a "scenographic" setting that is fixed and unchangeable that occupants and users cannot shape over time. Often this image, though strong, is a fraudulent one, like Disneyland, that ignores tradition and context. The fallacy of this thinking is especially glaring in this early stage of development where identity and community are minimal.

Architecture, urban design, and planning need a new process for generating urban structure and identity in new developments, one that is "softer" and more open to other voices, and that addresses the scale, timing, and connectedness of development. Much recent development following the PUD model has been too large in scale, and too insular and disconnected from its context. We need to pay more attention to the real tradition of places, the deep structure, rather than merely trying to copy or quote architectural styles. In urban design that tradition includes basic environmental qualities such as scale, grain, transparency, the relation between buildings and streets, connectedness, and access to daily needs. Regrettably, these have been overlooked in much new development in the search for a provocative image. As an alternative to the current approaches to large scale

residential development, it would be instructive to study the design and development of turn-of-the-century streetcar suburbs. Most of these have been successful now for nearly a century, and provide a model for incorporating transit and mixed uses, and for creating walkable and livable neighborhoods.

Are walkable suburbs possible today? Whether new urban development based on traditional patterns can be made to work in today's marketplace still remains to be demonstrated. The creation of walkable enclaves within regional sprawl, however delightful, may not reduce automobile dependence or solve regional transportation and environmental problems. To reduce automobile dependence it will be essential to begin to manage regional patterns of land use and transportation, while enhancing local livability. Without such thinking, piecemeal efforts to create imageable and comfortable neighborhoods will result in little more than the old suburb in a new style. Local efforts at creating convenient, less auto dependent neighborhoods and communities can be effective only within a regional framework that provides the transit infrastructure and encourages a denser pattern of development with mixed uses.

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