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Neotraditional Design: Resisting the Decentralizing Forces of New Spatial Technologies

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Abstract

The New Urbanist, or Neotraditional, movement that has characterized urban planning since the beginning of the 1990s has a vision of how people should live, work, and travel in a manner that, planners believe, will be "best" for society and for the environment. At the core of this vision is the notion that a return to the high densities, architectural form, and lifestyle of the period prior to World War II will result in a better society. A question that is ignored by the neotraditional proposals is the extent to which changing technologies might make calls for higher densities obsolete. As both communications and transportation technologies improve, how significant might the costs of sprawl really turn out to be?

Portland is an example of an area where most local planners have embraced the neotraditional planning concept. One of the primary components of transit-oriented development, light rail transit (LRT), has been in place long enough to provide data for analysis. Because LRT is often held up by neotraditional planners as a crucial element in decreasing auto use and in encouraging high-density development, this paper examines the extent to which LRT in the Portland region has affected mode share and multifamily development. The empirical analysis provides evidence that light rail alone has not been sufficient to change development patterns and transit modal behavior appreciably.

The challenge to planners is to assess development trends and consumer preferences, as well as the implications of how new spatial technologies might impact trends and preferences. This assessment will provide the basis for estimating market shares for dispersed and concentrated development forms.

Introduction

The New Urbanist, or Neotraditional, movement that has characterized urban planning since the beginning of the 1990s (Duany and Plater-Zyberk 1991; Calthorpe 1993) has a vision of how people should live, work, and travel in a manner that, planners believe, will be "best" for society and for the environment. At the core of this vision is the notion that a return to the physical town structure, architectural form, and lifestyle of the period prior to World War II will result in a better society. The improvement, the planners maintain, will be manifested in better social relations; lower crime and unemployment rates; higher levels of education; less reliance on auto; and reductions in air, noise, and water pollution.

Advocates of New Urbanism deny accusations that their plans are tantamount to "social engineering" or "environmental determinism." They often point to visual preference studies that suggest that most people prefer the vision of a cozy bungalow on a tree-lined street to a strip mall at the intersection of several multilane suburban freeways. To prove that their design recommendations do in fact have a causal relationship with behavioral improvements, they note that where densities and pedestrian amenities are highest — typically, traditional inner city neighborhoods — people take transit and walk more often and drive less.

The visual preference studies, however, contradict what is revealed by consumer preferences. And the relationship between density and transit use is not causal; if anything, there is a weak correlation that is strongly confounded by other intervening variables.

The Neotraditional Vision of Transportation

Audirac and Shermyen (1994) characterize the New Urbanism as a postmodern reconstruction of American suburbia that goes by various names: "pedestrian pockets" on the West Coast, "urban villages" in the Northeast, and "neotraditional neighborhoods" in Florida. A common element is the pedestrian-friendly street and mixed-use town center. The transit-oriented development (TOD) variation includes transit corridors and mixed-use development around transit stations. The value of transit-oriented design is predicated on the assumption that TODs generate less traffic, have higher transit rates, and result in a better jobs-housing balance.

Two looming questions emerge from transit-oriented design proposals. One is whether we have the ability to reshape the existing development patterns and density. That is, will people be willing consumers of a new product? The second question is whether the new form will in fact produce fewer auto trips and thus more transit and nonvehicular trips. Will people really drive less and use transit more?

Although there is evidence that existing transit-oriented development patterns—usually developments in older areas already well served by transit—have higher transit ridership rates than newer auto-oriented areas, it should not be argued that *new* transit-oriented developments will have as large an impact as is suggested by the comparison of neotraditional development with older, traditional development. Many questions remain unanswered by such facile comparisons. Will people moving to new transit-oriented developments be former auto-oriented residents who will change their behavior? Or will the neotraditional developments attract transit-oriented residents from older, traditional neighborhoods who will bring their transit behavior with them?

The Role of Changing Technologies

A question that is ignored by the neotraditional proposals is the extent to which changing technologies might make calls for higher densities obsolete. As both communications and transportation technologies improve, how significant might the costs of sprawl really turn out to be?

Gordon and Richardson (1995) respond to this question by arguing that the proponents of compact development have overestimated the costs of sprawl. These analysts conclude that continued improvements in transportation and communications will in fact obviate the need for concentrated settlement patterns. Tietz (1996) points to the possibilities of ever-greater global communications promised by increasing electronic interconnections. A new community is emerging—one that does not rely on front-porch interchanges with passersby, but instead on electronic connections from bedrooms and living rooms across the globe.

Of course, many paint a frightening picture of the future the new technology portends. These doomsayers see a technology such as ITS (Intelligent Transportation Systems) as maintaining the supremacy of the auto and fostering even more sprawl and societal divisions. When combined with advancing telecommunications, it is argued, technologies such as ITS will enable longer but less frequent commutes and more affluent and isolated communities, insulated by low density and far removed from inner city decay. Boyer (1996) argues that the proliferation of computers and telecommunications is destroying cities; people are becoming less interested in the physical city and more interested in what's on their screen.

Graham and Marvin (1996) paint a different and more modest picture of the impact of telecommunications on the city. They argue that urban planners remain blind to the role of telecommunication and technology. They conclude that "what is emerging is a 'more totally urbanized' world, where rural spaces and lifestyles are being drawn into an urban realm."

The ultimate effect of telecommunications and transportation technologies on urban form will not be known for some time. But what is certain is that they provide potential for a greater dispersion — not concentration — of the population. New forms of community have already emerged as a result of telecommunications; there is no reason to believe that electronic groups and communities will decrease in number. More and more people are choosing to telecommute, thereby enabling them to live at great distances from their place of employment. Transport technologies, including those that increase the efficiency of both automobile and transit travel, are making long-distance commuting less time consuming and more enjoyable, even in the worst conditions of congestion. In short, changing technologies point to a continuation of the historic decentralization trend—not a return to compact development forms as advocated by urban planners. Can the planners' recommendations for an urban structure and lifestyle that defies both present trends and consumer preferences be realistic?

The Portland Case

Portland is an example of an area where most local planners have embraced the neotraditional planning concept. Unlike the case in many metropolitan areas, decision-makers in the Portland region have achieved a remarkable amount of consensus about the connection between land use and transportation and their vision for the future. The regional planning entity, Metro, has devised a plan called Region 2040, which has been strongly influenced by a planning analysis spearheaded by 1000 Friends of Oregon, a land use watchdog organization. This analysis, known as LUTRAQ (Land Use Transportation Air Quality), has as one of its chief goals the reduction of single-occupancy vehicular (SOV) travel. At its core is neotraditional design, with varying degrees of reliance on transportation demand management (TDM), including transportation pricing.

There is no doubt that both the LUTRAQ and Region 2040 proposals are unique and ground-breaking and that the planning process in the Portland metropolitan region is fascinating to study. This area is a fertile laboratory for analysis—but are its residents informed, consenting participants in what might turn out to be a very risky experiment? What if light rail is not cost effective? What if developers do not seize upon planning recommendations to build at higher densities, in neotraditional form? And if they do build, what if people don't buy? And, if people do buy, what if they don't increase their use of mass transit? What if SOV use continues to increase unabated?

A report by the U.S. Department of Transportation (Pisarski 1992) found that commuting behavior is not responding to our current transportation and land use plans, that despite widespread support of light rail, advocacy by the local media, and a unified planning vision, commuter behavior in the Portland area is "a model of the national trend. In Multnomah County, carpooling dropped from 17.7 percent to 12.9 percent, and transit use declined from 13.1 percent to 9.6 percent. Outlying counties showed similar patterns. Transit declines in the City of Portland itself were particularly marked with shares dropping from 15.9 percent to 10.9 percent. Only working at home and driving alone showed significant gains in shares. . . . Portland was one of the cities in which driving alone increased more than the increase in workers."
The same report also shows that Seattle and Los Angeles gained transit ridership among commuters while Portland lost. This is partly attributable to faster growth rates in Seattle

and Los Angeles during that period, but the loss in share carried by transit from 1980 to 1990 was higher in Portland than in Los Angeles and Seattle. Portland's share of work trips by transit fell from 8.4 percent in 1980 to 5.3 percent in 1990, while Los Angeles' share fell from 6.4 percent to 5.7 percent, and Seattle's share fell from 10.7 percent to 7.8 percent.

These are the current trends, but future trends, as modeled in the LUTRAQ analysis, may show no real decrease in SOV share. Recent research by Genevieve Giuliano (1995) questions the transportation-land use connection suggested by LUTRAQ. Her analysis of the LUTRAQ modeling projections is that "land use policies appear to have little impact on travel outcomes; most of the observed change is due to TDM [transportation demand management] policies, rather than to the land use and transit policies. Without TDM, travel impacts of the LUTRAQ alternative are minor" (1995, 8).

Giuliano notes that there are several other reasons why the relationship between the land use and transportation may not be as strong as some planners want to believe. Perhaps most significant is her conclusion that "transportation is of declining importance in the locational decisions of households and firms. Transport costs make up a relatively small proportion of household expenditures, and increasingly flexible work arrangements (including telecommuting) are likely to make access to workplaces even less important in the future" (1995, 8-9).

The Effects of Light Rail Transit on the Journey-to-Work and Multifamily Development Trends in the Portland Metropolitan Area

Most claims of the neotraditional planners cannot be evaluated because their proposals have not yet been implemented. There is some anecdotal evidence regarding a few developments—and the results are not promising. Fairview Village, a neotraditional development in the suburbs of Portland, consists of plans for high-density housing, in pre-WWII architectural style, just a short walk across a planned stone bridge connecting the residential area to the "town center," which is to consist of a post office, a school, multifamily housing, and shops and offices. Only a few of the houses have sold. Most remain vacant or as yet unbuilt. The town center is a bulldozed crater that remains vacant for lack of response by retailers.

Laguna West, a neotraditional development in Sacramento, was designed by architect-designer Peter Calthorpe (a chief adviser on the LUTRAQ project) to consist of a transit center surrounded by high-density development, with lower density housing beyond that. His vision was for people in the high-density area to walk to transit and shopping throughout the development. But due to the lack of a market for the properties within the development, the original developer has gone bankrupt. The new developer has replaced the planned high-density development with low density. "This meant that most people had to drive to get to the transit center, and the people in the homes near the transit center objected to the traffic. At their behest, the transit center was moved outside the development. The only commercial use in the development is a quick lube, and people do all their shopping at a nearby conventional strip mall" (Different Drummer 1996, 43).

Despite these anecdotal examples, neotraditional design remains largely untested. But in Portland, one of the primary components of transit-oriented development—light rail transit (LRT)—has been in place long enough to provide data for analysis. Because LRT is often held up by neotraditional planners as a crucial element in decreasing SOV use and in encouraging high-density development, this paper examines the extent to which LRT in the Portland region has affected mode share and multifamily development.

Study Area

The Multifamily study area (see Map 1) consists of the outer portion of Multnomah County defined by Interstate 84 to the north and Interstate 205 to the west; the eastern limits of Gresham and Troutdale (the eastern part of the Portland Metropolitan Urban Growth Boundary); and a southern boundary extending one quarter mile south of Powell Boulevard. The study area includes the outer limits of Portland's light rail line and the parallel corridors of Division Street and Powell Boulevard. The portion of Portland between the Willamette River and Interstate 205 consists of the built-out inner city area where there is very little vacant land to develop. It is not part of the multifamily housing study area.

Model Specifications

This study is concerned with multifamily housing characteristics according to level of transportation access. Access is determined by use of a quarter-mile buffer around light rail stops, bus stops, and major arterials. The model employs the concept of nesting, with each individual parcel having a specific level of transportation access.[1] Levels of transportation access are defined as follows:

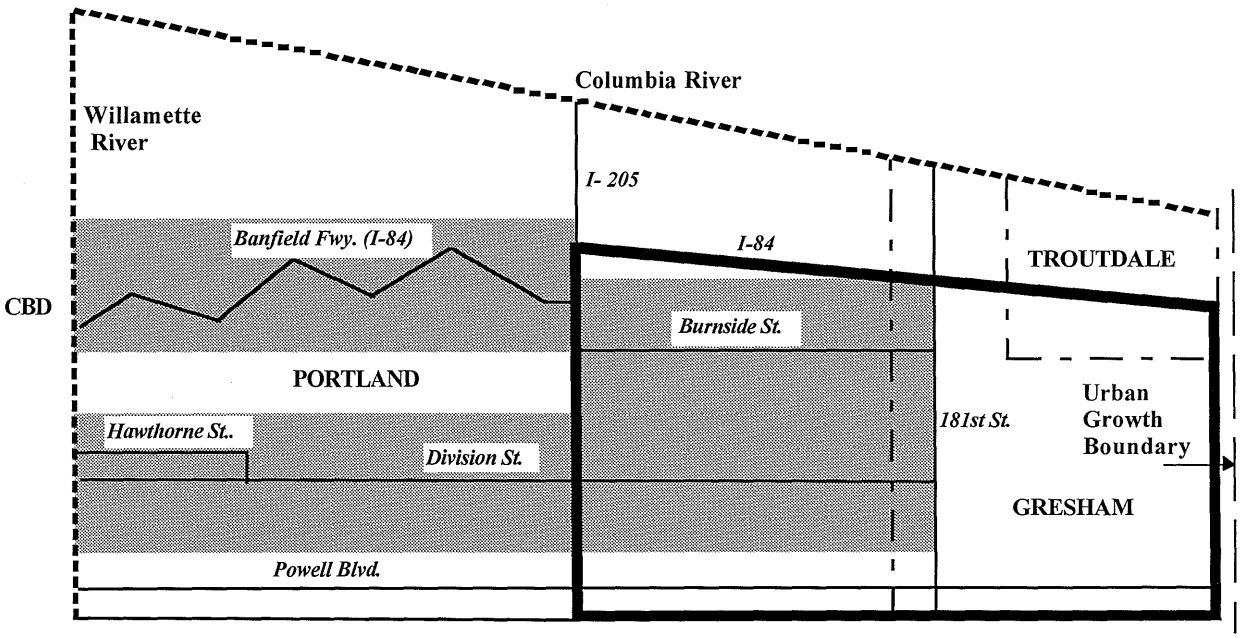
- **rail stations** sites have access to rail stops, bus stops, and major arterials
- **bus stops** sites have access to bus stops and major arterials
- **arterials** sites have access to major arterials, but not bus stops or rail stops
- **other** sites have no access to major arterials, rail stops, or bus stops

Results with Respect to Multifamily Housing Development

Table 1 shows the distribution of land by modal access for the study area. The table shows that less than 7 percent of the study area has access to a rail station area. Table 2 shows that about 17 percent of all multifamily development projects since 1986 (the year light rail service began) and 12 percent of the total amount of developed multifamily acreage since 1986 has occurred in rail station areas. This would seem to indicate a higher rate of developed multifamily projects relative to the percentage of acreage around rail stations. However, station areas are more heavily zoned for multifamily housing development than other areas in an effort to densify rail accessible areas, as shown in Table 3, with 15.03 percent of the land zoned for multifamily housing in rail station areas. These data are illustrated in Figure 1.

[1] The nested model works remarkably well with respect to inclusiveness. The only inconsistency concerns the bus stop coverage which contains a few fragments that do not precisely overlap with arterials. This amount of this error is approximately 3%.

The analysis utilized data from Regional Land Information System, Metro, Portland, OR. ArcView was used to buffer transit stops and arterials to determine the transit locational typology of multifamily housing built since 1986.



Map 1: Study Areas

Mode Share Study

Multifamily Housing Study

Major River

City Boundary

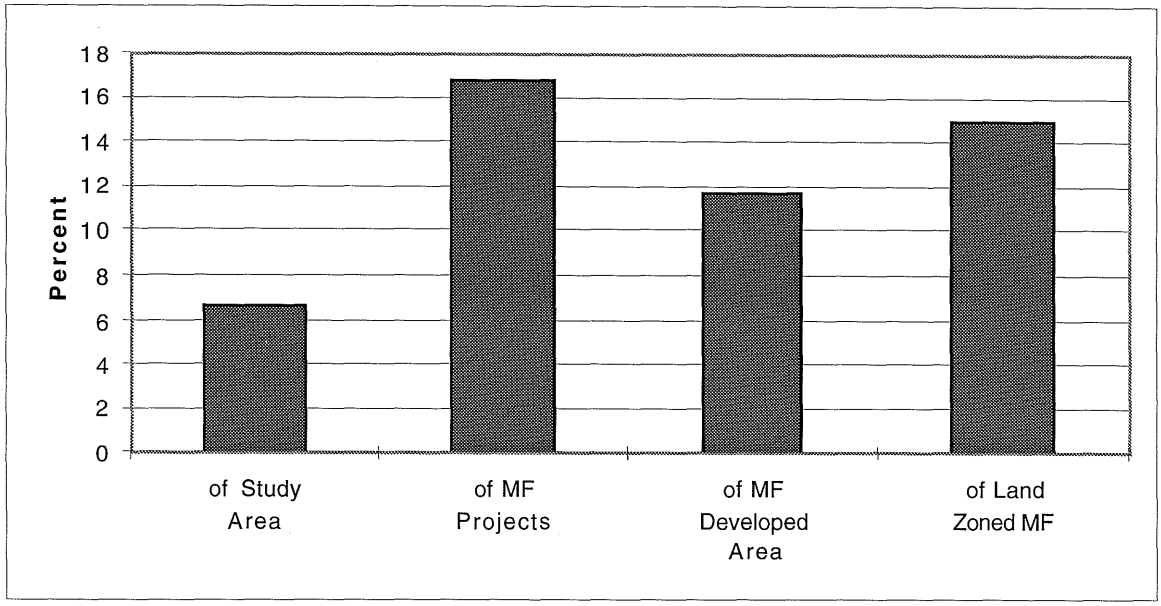


Figure 1: Rail Access

Table 4 shows the number and amount of the vacant and developed multifamily housing parcels. The build-out rate for parcels and acreage in Table 5 were calculated from the values in Table 4. The results in Table 5 show that the build-out rate for parcels located in rail station areas is lower than in areas served by bus stops and arterials. Controlling for available multifamily land, the build-out rate for rail station areas is considerably less, as shown in Figure 2.

This analysis indicates that multifamily development is occurring more rapidly near rail station areas than elsewhere, but when the amount of land available for multifamily development is considered, the rate of development is slower. Zoning land around rail stations for multifamily housing helps to concentrate multifamily housing density, but the effect of LRT on multifamily housing development is not strong. On the basis of multifamily zoned land, multifamily housing is occurring faster near bus stops and arterials than light rail.

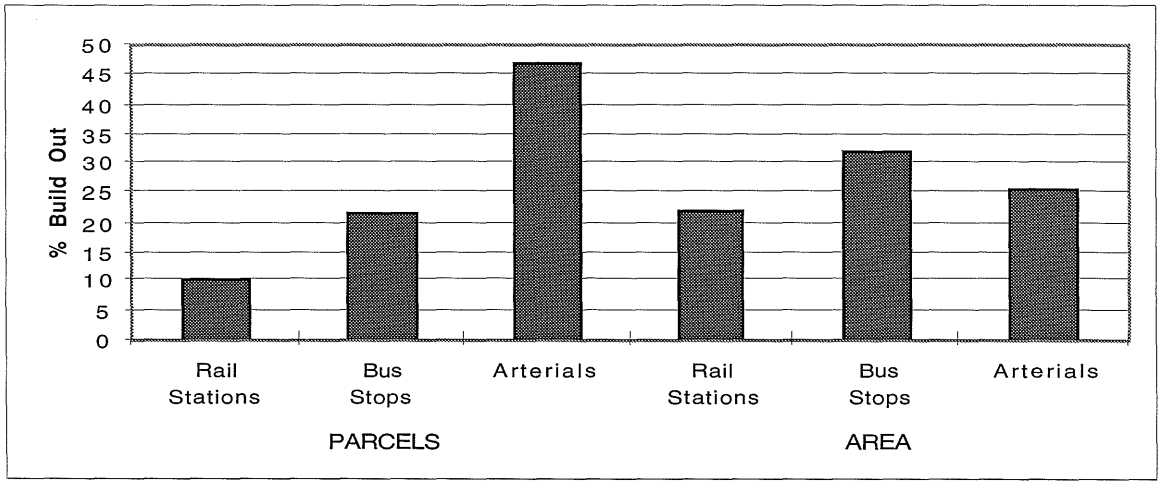


Figure 2: Number of Parcels/Area Developed for MF Housing since 1986 as a Percentage of Parcels/Area Zoned MF and Vacant, and Zoned MF and Developed for MF Housing since 1986.

Results with Respect to Transit Share

Similarly, the effect of LRT on transit share has been minimal. Table 6 presents the results of comparing 1980 and 1990 journey-to-work data from the U.S. Census of Population and Housing for the Banfield light rail corridor and a parallel corridor with good bus service, Division Street. Both corridors (shown by the shaded area in Map 1) are split into an inner city zone and an outer suburban zone. LRT is immediately adjacent and parallel to the Banfield Freeway in the inner zone and Burnside Street in the outer zone.

In the inner city zone, the rail corridor lost transit share from 15 percent in 1980 to 13 percent in 1990, while the parallel corridor served by bus only lost transit share by a slightly larger amount (4 percent), from 19.7 percent to 15.6 percent. In the outer zone, the rail corridor maintained transit share, at 9.5 percent in 1980 and 9.5 percent in 1990. In the bus-only corridor, transit share fell from 9.2 percent to 7.9 percent, as shown in Figure 3.

Transit share continues to erode, but by a smaller amount in the LRT corridor. The new light rail service and the feeder bus routes have staved off some of the erosion that has occurred nationally and in Portland. However, it has not reversed the trends.

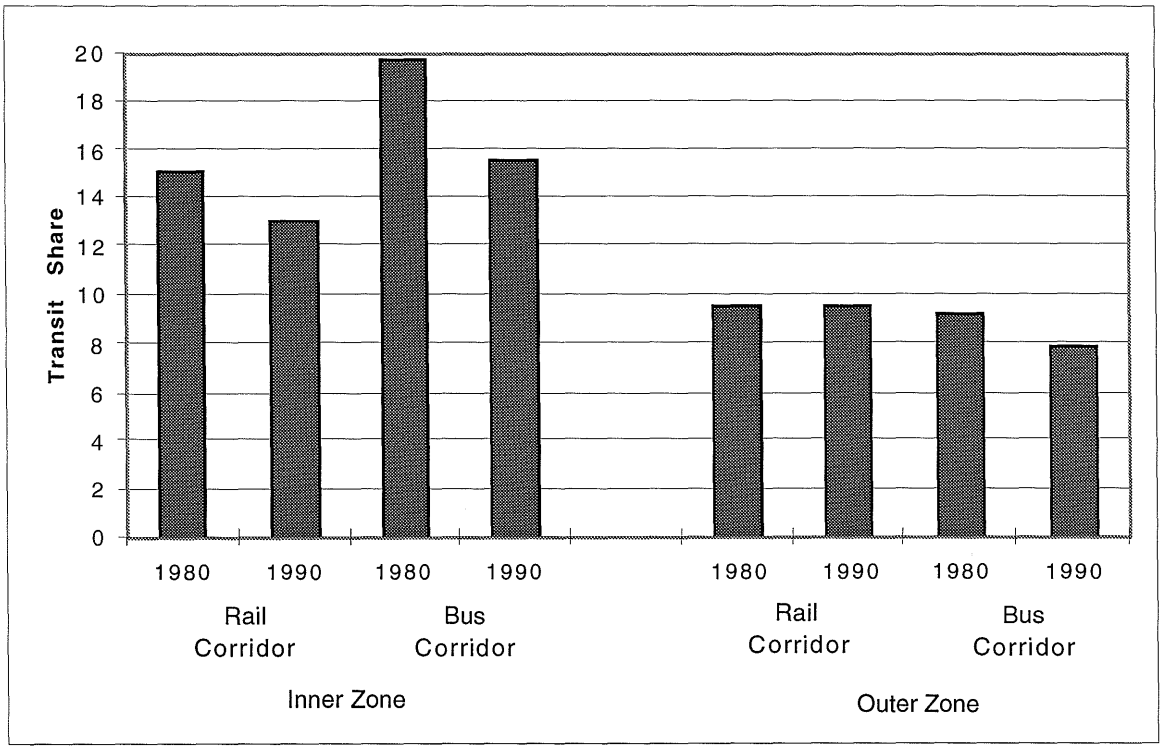


Figure 3: Transit Mode Share

Conclusions

The empirical analysis of multifamily housing development in the eastern suburban area of Portland region served by light rail transit and conventional bus transit provides evidence that light rail alone has not been sufficient to change development patterns and transit modal behavior appreciably. Recognizing that zoning high density around station areas may not be enough to increase the impact of light rail, the Portland community of planners have embraced the neotraditional planning approach, in an effort to "make light rail work." The

New Urbanism's higher densities and mixed-use development will soon be tested in the political arena and the economic marketplace. The extent to which these planning efforts can reverse historic decentralization or halt the future trends augured by changing spatial technologies remains to be seen.

The neotraditional design concept is a nostalgic view of family, neighboring, travel, and communications in a world that no longer exists. The family interacting with neighbors via the front porch and walking to the corner store, school, or work is no longer the norm. Personal transportation in the form of the auto and communications technologies have broadened a person's action space and options, so that opportunities within walking distance are no longer competitive or satisfying.

Despite their defense to the contrary, Neotraditionalists continue to risk accusations of environmental determination or social engineering, in that, fundamentally, they do see the urban designer's role as that of effecting (social) change through urban design (Ellin 1995, 134). Ellin has critiqued this " . . . search for urbanity (as) misguided when it ignores the contemporary context altogether or falls into the trap of environmental determinism presuming that traditional urban forms will engender traditional urban lifestyles" (1995, 137). William Fulton challenges the extreme New Urbanism planners to stay in touch with today's world, and not "believe that ideal communities miraculously spring forth, fully formed, from weekend design charettes" (1995, 50).

The risk that neotraditional planners take in persisting with assumptions about how people will and should live is that they may ignore real needs. A plan that puts expensive light rail before arterial and highway improvement and expansion—even at modest levels—risks leaving millions of automobile commuters with an undesirable and possibly useless alternative; the majority who do not live near light rail transit or who, because of family and lifestyle needs, require an automobile will have been ignored by the planners. By the same token, an emphasis on multifamily housing risks resulting in decreasing and unaffordable options for millions of households who, because of family and lifestyle characteristics, desire or require single-family housing. And designers' attempts to bring back small shops at the neighborhood level may only result in a surplus of small specialty shops and a shortage of the large retail centers that provide competitively priced goods (Different Drummer 1996, 60-61).

The challenge to planners is to assess development trends and consumer preferences, as well as the implications of how new spatial technologies might impact trends and preferences. This assessment will provide the basis for estimating market shares for dispersed and concentrated development forms. There is undoubtedly a market for higher densities and mixed-use development. No doubt, there is a segment of the population that prefers multifamily living and traveling by transit. The challenge is to identify this segment and to enhance their options without forcing others to adopt the same lifestyle. At the same time, planners are challenged to respond to concerns about the environment and inequitable housing through practical, not visionary means, such as reform through pricing travel and correcting deficiencies in the law.

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Multi-Family Housing Study: Tabular Results

Table 1: Amount of land area.

Modal Access	Acres	% Study Area
1. Rail stations	1,404.7	6.58
2. Bus stops	15,628.2	73.17
3. Arterials	3,002.6	14.06
4. Other	1,322.8	6.19
Total	21,358.3	100

Table 2: Multi-family development since 1986.

Modal Access	MF Development Projects (Since 1986)	Average Parcel Size (Acres)	% MF Development Projects (Since 1986)	Acres MF Development (Since 1986)	% Area MF Development (Since 1986)
1. Rail stations	24	0.93	16.78	22.39	11.73
2. Bus stops	101	1.55	70.63	156.69	82.09
3. Arterials	16	0.71	11.19	11.40	5.97
4. Other	2	0.20	1.40	0.39	0.20
Total	143	1.33	100	190.87	99.99

Table 3: Acres of land zoned multi-family or high-density.

Modal Access	Acres MF/HD Zoned (All)	% Land Zoned MF/HD (All)
1. Rail stations	162.6	15.03
2. Bus stops	871.5	80.55
3. Arterials	45.2	4.18
4. Other	2.7	.25
Total	1,082.01	100.00

Table 4: Number and amount of vacant and developed multi-family parcels.

Modal Access	# Vacant MF Parcels (All)	# Developed MF Parcels (Since 1986)	# Developed MF Parcels (All)
1. Rail stations	202	24	259
2. Bus stops	365	101	2,068
3. Arterials	18	16	146
4. Other	1	2	13
Total	586	143	2,486

Modal Access	Acres Vacant MF (All)	Acres Developed MF (Since 1986)	Acres Developed MF (All)
1. Rail stations	79.13	22.39	162.60
2. Bus stops	330.08	156.69	871.51
3. Arterials	33.22	11.40	45.20
4. Other	0.02	0.39	2.70
Total	442.45	190.87	1,082.01

Table 5: Build out rate since 1986.

Modal Access	% Build Out Rate-Parcels (Since 1986)	% Build Out Rate-Acres (Since 1986)
1. Rail stations	10.61	22.05
2. Bus stops	21.67	32.19
3. Arterials	47.05	25.55
4. Other	66.67	95.12

Table 6: Journey to Work Mode Shares

Banfield-Inner Zone

	1980		1990	
Mode	# Workers	% of Total	# Workers	% of Total
Auto	16,622	73.26	18,187	77.52
Transit	3,419	15.07	3,069	13.08
Other	2,648	11.67	2,204	9.39
Total Workers	22,690	100.00	23,460	99.99

Banfield-Outer Zone

	1980		1990	
Mode	# Workers	% of Total	# Workers	% of Total
Auto	10,580	83.36	10,950	82.44
Transit	1,203	9.48	1,263	9.51
Other	909	7.16	1,069	8.05
Total Workers	12,692	100.00	13,282	100.00

Division-Inner Zone

	1980		1990	
Mode	# Workers	% of Total	# Workers	% of Total
Auto	14,271	69.54	16,185	72.80
Transit	4,039	19.68	3,464	15.58
Other	2,212	10.78	2,584	11.62
Total Workers	20,522	100.00	22,233	100.00

Division-Outer Zone

	1980		1990	
Mode	# Workers	% of Total	# Workers	% of Total
Auto	12,558	85.80	13,224	86.07
Transit	1,345	9.19	1,206	7.85
Other	734	5.02	935	6.09
Total Workers	14,636	100.01	15,365	100.01

Cumulative Totals

	1980		1990	
Mode	# Workers	% of Total	# Workers	% of Total
Auto	54,031	76.60	58,546	78.75
Transit	10,006	14.18	9,002	12.11
Other	6,503	9.22	6,792	9.14
Total Workers	70,540	100.00	74,340	100.00