

Table 2. Maintenance of transit service: Alternative 4; recommended service level.

Hour Trips Ending	Weekdays		Saturdays		Sundays	
	Round Trips	Headway Per Hour	Round Trips (minutes)	Headway Per Hour	Round Trips (minutes)	Headway Per Hour
5 a.m.	2	30	1	60	-	-
6	3	20	3	20	1	60
7	a	a	3	20	2	30
8	a	a	3	20	2	30
9	a	a	4	15	2	30
10	a	a	4	15	3	20
11	a	a	4	15	3	20
12 p.m.	a	a	4	15	3	20
1	a	a	4	15	3	20
2	a	a	4	15	3	20
3	a	a	5	12	3	20
4	a	a	5	12	2	20
5	a	a	5	12	3	20
6	a	a	5	12	3	20
7	a	a	4	15	3	20
8	4	15	3	20	3	20
9	3	20	3	20	3	20
10	3	20	3	20	3	20
11	3	20	2	30	2	30
12 a.m.	2	30	2	30	2	30
1	2	30	2	30	2	30
Total bus-hours:	22		73		52	
Total bus-miles:	207		686		489	

^aNormal weekday subway service, no buses required.

tems and new high-capacity lines for which UMTA capital grant assistance is still available.

The Newark City Subway was developed in an era when streetcars were being forced off the streets as the auto became dominant. In several other cities, including Cincinnati and Rochester, similar streetcar subways were constructed and abandoned but still exist as untapped resources. Today, the continued survival of the Newark City Subway is assured, and it will play an increasing role in providing mobility to its patrons and reducing congestion in downtown Newark. It is hoped that this paper will inspire planners in other cities to reexamine abandoned streetcar rights-of-way and perceive in them an effective and economical means of creating high-capacity transit corridors for the future.

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Light Rail and Development: Constraints and Conditions

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This paper discusses work carried out for the Urban Mass Transportation Administration (UMTA) on the economic impacts of the Buffalo Light Rail Rapid Transit System

(LRRT). The system is the culmination of two decades of corridor planning that saw appreciable changes in planning criteria and justification of system benefits.

Two major policy issues are addressed. The first issue is the extent and scope of economic development that will depend on or derive from the LRRT system. The second is the role transit system policy will play in regional development policy. In Buffalo, population decline, intraregional population and employment shifts, and the effectiveness of the existing transit system were major considerations as these issues were discussed.

Recent retail activities are examined to show how critical the focus of activities around the transit system will be. Current development (paid for by both private and public sectors) are then analyzed to demonstrate how development policies can reinforce or conflict with transit. It has become evident that a strong, well-coordinated regional development policy is necessary if the Buffalo LRRT is to be effective.

In April 1979, ground was broken for a new 6.5-mile light rail rapid transit system in Buffalo, New York. This event had national significance for a number of reasons:

- It was the culmination of a complex and changing planning process that had begun in the early 1960s.
- It demonstrated that a strong citizen-participation process, coupled with a strong coordinated community planning effort, could result in a well-designed system.
- It represented a significant public investment in a transportation system for which user benefits were not the sole or even major justification.
- It was part of the federal program of the late 1970s to revitalize urban central cities through well-planned public investment.

While initially (1962-1964) conceived as a link in a revitalized regionwide transportation network, the Buffalo Light Rail Rapid Transit (LRRT) is currently seen as the unifying component of a revitalized central business district.

In a time of decreasing federal and local budgets, large capital investment projects take on special significance. When planning for a new transit system, regional planners and investors must examine carefully the link between transit and regional development. How the returns (i.e., the public value received) on such large public investment must be carefully measured and evaluated.

Transportation planners in the 1960s assumed that user benefits might justify new transportation systems; now, however, it is felt that a major transit investment must generate returns through its catalytic effect on new office development and retail, commercial, and even residential activity. This transit investment is seen as perhaps the most critical of a number of policies, public and private, that must be carried out in concert to ensure a successful return. Such policies have the potential to be mutually reinforcing in urban revitalization. They are designed to encourage transit development, economic development, and other local growth.

BACKGROUND

The LRRT system is the culmination of nearly two decades of transportation planning in the Buffalo Standard Metropolitan Statistical Area (SMSA). The planning efforts of the early 1960s were directed toward systems that would serve the rapidly growing suburban areas and accommodate the large number of autos predicted to be on the region's highways by 1985. It was decided that mass transit improvements were most feasible in the high density, rapidly growing corridor linking the CBD, an existing university center at the northern edge of the central city, and a new university center and new town several miles to the north.

At the start of the planning process (1970), the transit system was expected to be heavy rail; it was to be part of

the orderly renewal of the deteriorating downtown. By 1980, massive population losses, employment shifts, and severe adverse economic pressures had so affected the city that the system was viewed as the essential ingredient in downtown revitalization. After much discussion of corridor concepts and with extensive community participation, a 6.4-mile light rail system was agreed upon. The system totally contained within the city of Buffalo and focus on the CBD was ultimately justified not only by user benefits, but also by the economic benefits the system would generate. Transit-related projects—a mall, new offices, new retail areas—were seen as necessary components of this revitalization process, and the concepts of joint development and codevelopment evolved. Joint or codevelopment programs are intended to capitalize on impacts of transit development. Public investment is used to provide the stimulus for private investment. The joint programs force planners and potential developers to consider the large investments in a fixed-rail system, busway, or pedestrian area in light of their potential to inspire such land-use changes as new offices and retail or residential development.

Fixed-rail transit projects are considered ideal for codevelopment because they provide highly focused areas for development. These areas can be single stations, such as Philadelphia's Gallery, or a series of stations linked together in a high-activity area, such as the mall in Portland or the at-grade transit mall proposed for Buffalo. Neither transit nor urban development alone can impart new life or vigor to a decaying or declining area, but together they can create a positive change.

The success of joint development projects depends upon both maximizing the investment strategies in the area of focus and minimizing the adverse effects of other policies through coordinated regional planning and development strategies.

In areas that have declined or experienced only slow growth, the inflow of large amounts of capital over a short period of time is intended to be a signal to private investors to participate in the overall development process. (In Buffalo, \$450 million of public money will be allocated over 5 years.) Joint development programs (urban initiatives) and Urban Development Action Grants (UDAGS) are further incentives to private investors to participate in targeted programs of development.

For the CBD revitalization to succeed in Buffalo investment in a light rail system is a necessary but not sufficient condition. The success of LRT, both as an element of public service and as a component of development, also depends on maintaining current levels of activity and generating new activity in targeted areas of investment. In Buffalo and other major urban areas, other policies, can affect these targets:

- Auto-related policies: highway, parking, and other policies that do not discourage auto use to the targeted areas or that stimulate development in nontarget areas; and
- Development policies: policies that would stimulate retail, office, and other development in areas other than those of transit development.

In major growth areas the effects of such policies might be absorbed in the short run. In Buffalo, such policies cannot be sustained, even in the short run, because the population, employment, and economic conditions cannot tolerate a diffusion of effort.

A declining region or a constantly stable one can be thought of as a finite pie. The pie may be jobs, retail sales, or total daily travel. In Buffalo, the CBD generated only 5 percent of SMSA retail sales. If the LRRT is to generate new development—some of it retail activity—and if the new development it is to be successful (return some of the public investment), new sales levels must be achieved within the CBD. If regional income remains constant (with declining population), additional CBD retail

sales must be generated at the expense of non-CBD (neighborhood or suburban) sales.

LRRT, RETAIL SALES, AND CONSTRAINTS

The Buffalo system was initially proposed for a region that was projected to continue to grow or become stabilized by 1985. Although the population of Buffalo decreased 23 percent in the past decade, employment within the city increased, and over the past 5 years, CBD employment has increased by 10 000. Employment is primarily white collar (service industry).

A large part of this increase has resulted from the influx of women into the labor market. In 1978, women made up 52 percent of the Buffalo area population, a slight increase over 1970 and 1975. It is estimated that 228 000 women are now in the labor force in the two-county SMSA, an increase of 15 percent over 1970. This is 40 percent of the total area labor force, compared to 37 percent in 1970. This follows the national trend. A decade ago, women constituted one-third of the nation's labor force; they now constitute nearly 50 percent.

The distribution pattern of personal income within the region is also changing. As total regional income increases due to increased per household income, retail sales will increase in proportion. The retail shopper is predominantly a female head (or co-head) of a household, and more retail expenditures will be made by women who are employed. Because of new time constraints in households where both heads work, assessing the cost and times of travel for shopping will be more critical than in the past. Because one method of minimizing such costs is to shop near work, any system that facilitates retail CBD shopping will be important.

Women are the largest segment of transit riders (70.6 percent in 1975), and nearly 30 percent of the total

daily transit use is in the Main Street corridor.

Figure 1 shows a history and projection of transit ridership in the Buffalo region. The data, based on a 1975 survey by the Niagara Frontier Transportation Committee, also project the proportion of ridership expected in the Main Street corridor. The growth of employment in the CBD, the increase in women on the labor force, and the heavy use of transit by women are all factors that forecast a demand for the new LRRT system by the market segment.

Figure 1 shows a transit decline in the region since 1968. However, projections incorporating those data have led the NFTA to assume that ridership on the entire transit system would increase and that a growing share would go to the Main Street corridor. By 1990 the LRRT is expected to serve approximately 80 000 to 100 000 passengers a day, with over one-half expected to be in the CBD population (primarily visitors and employees).

However, transit's share of the rush hour modal split is estimated to increase only from the present 12 percent to 14 percent by 1985. Transit's share of all trips in the region will remain at less than 10 percent, and car use will remain high even after the transit system is built. Also, more than two-thirds of the population will continue to live outside the central city.

Clearly, the success of the transit-linked development projects will rely on their being unique (i.e., hotels, a convention center, government business) or on a demand for space adjacent to both transit and the CBD (service employment). Ancillary development will be to serve the needs of the CBD population or of those who find transit a unique and inexpensive way to travel. Some users will take advantage of the farefree zone (lunchtime shoppers, or theatre goers who travel to restaurants, etc.), others will be drawn to specific sites downtown (hotels).

As population and some sectors of employment have gone from Buffalo to the suburbs and beyond, so has the retail industry. New construction of retail centers in the region has been at an ever-increasing distance from the inner city, and transportation to these centers is largely by car.

The regional share of CBD retail sales has decreased over the years. On a per capita city resident basis, retail sales in the CBD have increased at an average annual rate of 3.9 percent, a rate lower than the overall inflation rate, indicating that a smaller percentage of true yearly regional income is being spent in the CBD.

A movement toward stabilizing, or at least lessening, the outward movement of the retail industry would be an important step toward revitalizing Buffalo's inner city. The growth of office buildings, financial institutions, and related service facilities in the CBD in the past decade lends justification to current and planned reinvestment efforts taking place in the city, from both public sources (the LRRT) and private sources (hotels, restaurants).

Although the CBD has lost much of its retail dominance to the suburban areas, with proper transit and development planning, it still can be a major center of shopping activity.

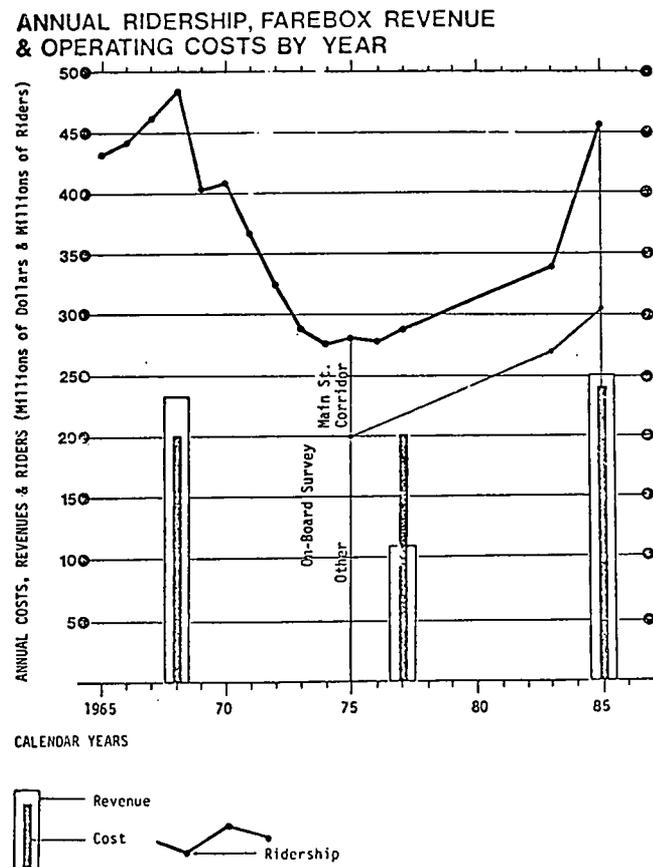
TRANSPORTATION TRENDS

A major factor in suburbanization was the development of the highway system in the 1950s and 1960s. Buffalo has extremely well-developed highway and expressway systems that enhance the region's accessibility. The average journey to work by car in the SMSA is less than 20 minutes.

The present public transportation, the bus network that complements the highway system, will be augmented by the LRRT line in 1985. Based on current and projected modal split figures and population and employment levels in the region, changes in overall accessibility by the LRRT are predicted. These zonal accessibility measures were calculated for work and service trips.¹

Accessibility as used in this study compares the relative attractiveness of the regional sectors. Attractiveness

Figure 1. Transit ridership, Buffalo, N.Y.



is based on the likelihood of a particular activity (work or nonwork) being in that given sector, and how easy it is to get there from other sectors. Therefore, the more retail activity a region has, the more attractive it should be. However, if travel time to that region from other areas is greater than travel time to a competing region, its accessibility would be diminished.

Service trip accessibility based on the LRRT was calculated for the region. Since people want to shop close to home, zones with both high population levels and attractive retail areas, mostly inner-ring suburbs, will rate highest in service accessibility. Although the CBD is a major retail center for the daytime downtown labor force, it is not more accessible for service trips because so few people live there. Any increase in CBD shopping will have to draw from daytime suburban shoppers. By making the downtown more attractive as a shopping area, suburban dwellers may be made to regard it as worth the effort needed for shopping and other service activities.

Travel time alone is not the best determinant of area residents' preferences of shopping location. Although people do try to minimize travel costs (time, effort, and money (fare)), the size and attractiveness of the retail center is by far the most important determinant of preferred shopping location.

City shopping areas are accessible to more people than are suburban centers. Travel time is less, particularly for transit riders, because the transit network is far more extensive in the city than in the suburbs. The actual relative strength of each retail center is, however, not consistent with the overall accessibility levels. The strongest suburban shopping mall in terms of total retail sales is the least accessible with respect to numbers of households; it is accessible to only about one-half as many auto drivers as are the CBD and Central Park shopping areas, for instance, but is 1.5 and 15 times stronger than these two city retail centers. Conversely, one of the more accessible centers, Central Park Plaza, is the weakest in terms of retail sales; therefore, factors other than size, safety, and overall attractiveness determine retail patronage.

These data reinforce the theory that the CBD retail share, all other factors remaining constant, will continue to decline. To reverse the trend, new demand must be created from:

- A daytime work force that will increase as service employment increases, and
- A new, nonwork, CBD population generated by the "new" downtown; i.e., transit, transit mall, and new facilities.

RESPONSE TO THE LRRT STIMULUS

The impacts on economic investment of the light rail system in Buffalo can be evaluated using the following components:

- Federal and local investment in the LRRT system itself during the period 1978-1983,
- Other public investments related to the construction of the LRRT, and
- Corridor and regional changes that might occur because of the rail investment, including both public and private investment in CBD and nearby stations.

Transportation may be an important link in the functioning of an urban system, but returns from a large public investment in transit cannot be taken for granted. Planners forecasting economic impacts from a new transit investment must ask whether government policies or programs at all levels have reinforcing or conflicting influences on the transit investment and its subsequent relationship to economic development.

High capital transit investment may generate other

related investments, but it may not be the only major investment in the region. Others may be occurring, justified by highly localized costs and benefits. An overall regional cost benefit analysis for all projects should be done.

If the transit investment is justified partially because it will encourage CBD revitalization, federal, state, and local policies and programs that help implement this objective would be considered advantageous, and federal, state, and local programs and policies that create competing development in other regions and detract from CBD redevelopment and transit system growth would be considered disadvantageous. In the past several years a number of programs, at federal, state, and local levels have been available to assist local development.

Examples of reinforcing planning are projects started with funds from HUD, EDA, and DOT programs. In a declining area such as Buffalo, targeted for massive urban aid, these agencies have the power to promote or deny projects through grants, loans, or underwriting bond issues. Private sector funds are unlikely to flow in such an area without such incentives. However, the programs of these agencies are not always coordinated, and local officials must create "packages" of programs to generate the private developers' interest.

It is possible for a region to adopt many of these programs without assigning one program a specific priority, and it is also possible for package programs to encourage conflicting development programs simultaneously. No rail system will result in specific growth without coordinated planning. Assumptions that a new, well-planned rail investment will encourage proper placement of new residential and commercial ventures are not realistic unless such vital issues as zoning, tax abatement, and other public tools are coordinated.

By building a rapid transit line below grade through outer residential areas and at-grade in the CBD where it will be the focus of a pedestrian/transit mall and by creating a feeder bus network throughout the region that will serve the CBD-oriented rail system, the transit planners in Buffalo have responded to the wishes of the city population. The transit mall in particular will facilitate the use of joint private/public development, and should attract investment that would otherwise go to other areas within the region. One such project—a major hotel/office complex—is currently underway.

However, conflicting policies at the local planning level have complicated the development program. A major arterial highway on the eastern edge of the Buffalo CBD was recently completed as part of the long-term highway planning in the region. This multilane, at-grade road serves as a connector to the main expressway leading out of Buffalo to the northeast and southwest. The New York State Department of Transportation (NYDOT) feels that this arterial will not conflict with the proposed light rail system. It will ease rush hour congestion in the corridor and help handle traffic diverted from an auto-free zone on Main Street when the light rail and associated transit mall open. However, as this connector will increase auto access and reduce travel time to the CBD, it may divert some potential users from the LRRT. This ease of access may actually place more autos on the few side streets in the CBD that will still cross the path of the rail system. The irony is that both the transit and highway plans came from planning assumptions generated in the 1960s. Seen at that time as complementary projects in a dense growth corridor, they may now emerge as conflicting projects, each diverting from the maximum potential of the other.

Another example of a conflicting project is the Audubon Industrial Park. At the local level, two agencies, The Erie County Industrial Development Agency (funded by federal EDA programs) and the New York State Urban Development Corporation (UDC), generate development through a number of regulated mechanisms. The most widely used is bond authority. The proceeds from bond issues can be used for industrial and residential develop-

ment and are currently being used within the entire county rather than for a particular region, i.e., the CBD. During the early 1970s the UDC was mainly responsible for development of a large residential and industrial park that began in the suburban town of Amherst. The area, Audubon Community (residential) and Audubon Industrial Park, is attracting significant investment from private sources. This planned development is attracting millions of dollars of private investment into the suburbs, and is concentrating it in one well-served area. The Urban Development Corporation and the town of Amherst have drawn small industries from Buffalo through more attractive sites, infrastructure, and expansion funding.

PROSPECTS FOR PRIVATE INVESTMENT

To support the assumption that transit is the catalyst for the resurgence of the downtown, a series of structured interviews were conducted with 30 regional leaders. While not a statistical sample, these responses are important because the people involved are responsible for directing, inducing, planning for, or investing in the growth of the region. Their responses to the transit project reflect the decisions that will be made by local investors. Those responsible for coordinating development in the CBD are optimistic about its success.

Approximately 60 percent of the community leaders believed that present efforts to revitalize the downtown centered around the light rail show definite signs of success. When asked for personal ideas for downtown revitalization, 45 percent said that current investments should be sustained; 15 percent singled out the importance of the rapid transit. Factors considered important in revitalization included new employment, current and planned improvements, and the transit system.

More than half the respondents saw a conflict between CBD and regional development. Forty-seven percent believed that the regional strength came from a strong core. Fifty-three percent felt that increased growth in the CBD (retail sales, jobs) would occur at the expense of other areas in the region. Forty percent believed the transit system would generate more CBD business, and all the respondents noted positive aspects of the LRRT on CBD growth. Eighty-five percent projected the 10-year future of the CBD as an attractive new retail commercial center. Thus, those directly responsible for investment (bankers, developers, planners, political leaders), confirmed their commitment to the CBD and transit's role in its restructuring.

These qualitative descriptions provide a reinforcement for investors who then provide the more tangible aspects of new projects. The largest private investments are in hotels and office space. Office space development reflects the growth of the service sector, and hotel space complements service sector needs. The sustained high growth level in the suburban areas illustrates the level of competition between these areas within the region. During the first year of transit construction (5 years until completion), \$253 million of related construction was undertaken or is planned in the CBD. This puts the current private investment level ahead of the public investment level. It is anticipated that 8 percent of transit investment will be made in the first year and 20 percent in the second year.

The transit investment timetable and the scheduled private projects indicate a synergistic effect of public and private investment is possible. The private investments were all announced at about the same time—after the opening of the Buffalo Convention Center (\$20 million public investment) and the start of light rail construction (\$90 million public funds for initial contract awards).

Based upon the resurgence of service-oriented employment and the desire to locate this employment in the CBD, the potential for new development both of employment and employment-related services in the CBD is high. There is currently a 98 percent occupancy rate in the city's 58 most sought-after office buildings. In response to a growing

market for CBD office space, approximately 480 000 square feet of downtown office space are planned to be available by 1982 to supplement the 1.4 million currently utilized. Much of this development is linked to transit planning.

Suburban development is also proceeding, but on a smaller scale. Suburbs have an inherent advantage over cities where investment is concerned. While city investment has a private-to-public ratio of 1 to 2, the ratio in suburban areas is 40 to 1. The reasons are obvious: the projects are much smaller (needing less capital), and so are the risks.

OTHER REGIONAL DEVELOPMENT IN THE BUFFALO AREA

Conflicting interests will always exist when decisions are made that affect citizens in more than one municipal jurisdiction. Possible extensions of the initial 6.4-mile LRRT line in Buffalo are under study. Although the major focus of development is now on the CBD, the attention of developers could be diverted to other attractive sites, particularly in the most rapidly growing suburbs. A future corridor concepts study may be able to highlight the best alternatives for extension by using criteria that include both the impact in the CBD and the development potential in the suburbs. In any case, the city of Buffalo can begin revitalization efforts and consolidate development programs before any new extensions are begun.

SUMMARY

It is certain that public transit will capture a larger share of total personal travel in the future. Rising costs of car ownership and operation have already caused many urban residents to switch from cars to buses or rapid transit. In cities with large populations or consolidated corridors of travel, line haul systems (rapid transit, light and heavy rail) and ridesharing (HOV facilities) are seen as major modes that meet the demand, reduce congestion, and, of increasing importance, affect activities around the system.

A major difference between bus and rapid transit service emphasizes this point. Bus service is essentially continuous. Buses take people to where activities are and can follow the movement of activities over a wide geographic pattern. On a rapid transit line, there is a more active land use/transportation relationship. Large numbers of people are concentrated at specific spots, and activities become linked to the stops. Transit induces changes in station areas that often would not occur if no transit were there.

Evaluations of transportation systems must be tied very clearly to the type system investigated. In any formal analysis of transportation systems, variables used to compare alternative systems are not congruent. While such traditional transportation variables as travel cost and total trips can be used to look at transit's effectiveness in meeting travel demand, land use impacts or generated development do not have synonymous effects on all transit modes.

Because of their high initial capital cost, rail rapid transit systems must generate more returns than ridership. For example: the \$400 million invested in the Buffalo system with its expected 40-year life span would be equivalent to \$40 million a year if the discount rate is 10 percent. When the inflation rate is high, the short high-investment span for capital projects becomes extremely attractive, and it is unlikely that local or state agencies would assess themselves \$40 million per year for capital costs and other such annual costs as operation, maintenance, and fare subsidy.

If rapid transit systems are built in nongrowth urban areas, it is essential that those involved in policymaking ensure that the investment is optimized. The decision to invest in a rail system must be unanimous and have strong regional support; its effectiveness and impacts must be

delineated; and its benefits must be greater than those of any possible alternative. A decision must be based on factors other than ridership or the travel cost advantage to the single rider (which is often marginal). The decision must consider the overall regional economic impacts on labor shifts, growth, housing location, and nonwork activities.

In addition to determining direct transportation benefits, a study of rail rapid transit benefits should ask and determine the following:

- Is there regional support?
- What associated land use and activity changes are involved?
- What is the timetable for these changes and are they affected by the transit investment?
- Will there be long-term (post construction) changes in the labor force created or influenced by the transit decision?
- Will the transit system affect the intraregional mobility of labor?

In a region of decline (urban areas of the northeast and north central states), economic and demographic indicators must be determined and used as planning constraints.

In many declining urban areas there is strong intraregional competition. Encouraged by HUD, EDA, and DOT programs, suburban areas compete with urban areas for the same resources.

Transit investment has the potential to minimize such competition and LLRT to catalyze new economic development. Transit development (light or heavy rail) forces planners to focus on land use and development; relocating bus stops or creating express bus systems does not. Bus systems usually follow development; rail systems shape development.

Rapid transit systems must be linked to areas with demonstrated growth potential. Growth potential (in regions of decline) can be measured by the following indicators:

- Changes in the employment force. Even declining areas may have subregions with increased employment, particularly in service-based industries. These can be broken into two major groups: those that must be near other service organizations, and those independent of specific locations. The former (mostly financial, government services, and wholesale and retail that serve those markets) still tend to congregate in CBDs, areas logically served by transit, so long as transit competes with auto use in terms of cost and access. Changes in regional employment patterns can be tracked, and new office construction or renovation planned both for the expanded market and access by rapid transit.
- Changes in composition of the labor force. The most significant change is the increase in the number of women in the labor force. This creates new household travel patterns and new income as well as new demands for the capability to carry out such nonwork activities as shopping near place

of employment or near home.

- Auto and transit policies. Where the car remains the preferred travel mode, growth potential can involve highway system improvements as well as transit improvements. Regional policies must encourage growth in areas where investment is desired, and conflict must be minimized. If the CBD is targeted for development, regional policies that improve access to other areas where competing growth can occur must be critically examined. The retail model cited in this study is an example of this policy analysis. Shopping centers have developed and thrived in a suburban ring tied to expressway development of the 1960s and 1970s. Now, when money is being poured into the CBD to generate new growth or revitalize the area, the retail component of the CBD is critical to further development. The retail shopping must be unique and dynamic enough to attract people from the entire region. Because a declining region is limited as to the amount of growth it can sustain in a given area, and because retail is one area where no major growth can be expected, investment in the CBD cannot coexist with new investment in competing areas.
- Ability to deal with nontargeted regions. In addition to such target areas as the CBD, rapid transit creates a focus at station areas. They can be targets of intense development efforts to reinforce ridership and increase economic activity. An accessibility model shows the joint influences of travel time savings and land development in zones directly adjacent to transit. In Buffalo these changes were not sufficient to overcome the strong attraction of zones with high auto accessibility, but rapid transit changes did increase the potential level of activity in adjacent zones. Because of their growth, these zones will have intraregional attraction. Public intervention must precede private development in these nontargeted station areas to ensure the highest and best use of the land in accordance with local objectives.

We have the capability to measure, access, and analyze these factors. Such analysis is crucial to determining the return on transit investment.

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