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URBAN SETTLEMENT PATTERNS IN THE NORTH AMERICAN METROPOLIS

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In 1963, Melvin Webber, in an article entitled "Order in Diversity: Community without Propinquity" predicted that non-spatial cities and nucleated dispersion were the logical next steps in the chain of technological advances that had shaped the structure of urban settlement in North America (1). Twenty years later, a decline in big-city populations, rapid growth in non-metropolitan areas and an increasing "foot-looseness" of jobs and population appear to be bearing out his prognosis. However, the picture is not totally clear. Not all metropolitan areas are losing population, and even among those that are, there are unmistakable signs of vitality, particularly in the central cities where the luxury housing market is strong, and office construction is booming.

The present paper explores urban settlement patterns in North America, drawing on trends and experience of the past and present, and on projected changes in communications, technology and economic activity in the future. The objective is to learn from the past, not only to more accurately predict the future of metropolitan structure, but also to consider the planning policies that would most successfully accomodate the new order.

THE PAST: 1860 - 1970

In 1790, the U.S. had just under 4 million inhabitants, 95% of whom lived in isolated rural areas or in settlements of less than 2,500 people. The largest city was New York which boasted a population of 49,401. It was not until the Civil War in the 1860's that urban growth exceeded that of rural areas in absolute numbers, and it was not until the early part of this century that the majority of Americans lived in cities. Absolute urban growth reached a first peak in the 1920's , fueled by massive immigration from abroad, and high fertility rates. Between the Wars, cities increased at an average of 12 million persons per decade. Urban growth declined precipitously during the Depression, but began to rise again in the 40's. It reached its highest levels in the 50's and 60's. During these two decades, net migration from the farms exceeded 1 million per year, and the birth rate soared.

However, even as the vision of American megalopolis and of cities of more than 20 million people were being raised by Gottman (1963) and others, the trend that had been sustained since 1860 was beginning to reverse itself. In the 1960's, Pittsburg became the first metropolitan area in the history of the country to suffer a net loss in population. In fact, as Alonzo points out, the net migration from the many of the older cities had started well before the 1970's (when the trend was first noticed), but was obscured by the fact that natural

increase exceeded out-migration. (2)

The causes of the rise and fall of metropolitan areas in North America are linked to a number of factors but foremost among these are communications and the nature of the economic base.

Early American cities developed as new technology pushed workers off the farms and pulled them in to nascent urban areas. The absence of labour in America in the early 19th century encouraged entrepreneurs to reinvest heavily in technology (3), and as a resul American industrialization took root quickly. Cities grew up around two types of industry, both of which benefitted from agglomeration and concentration (4). The first type, which can be descibed as "large-scale materials-intensive manufacturing" relied heavily on large (and bulky) quantities of input with respect to output. These industries profitted from close proximity, with other like concerns, to a transportation terminus where the cost of delivery of materials was minimized, and where the economies of scale intrinsic to rail or canal transport could be exploited. The second type of industry that formed the base for big-city growth involved "small-scale labour-intensive manufacturing" of such goods as furniture, apparel, printing and publishing, etc. These activities although carried out in small units of production were extremely inter-dependent and tended to cluster into "complexes of productive enterprise". They also located at central locations to insure accessbility to a large labour pool, and to their market.

Early advances in transportation such as the telegraph, the telephone and the inter-urban railway system contributed to further centralization of economic activity. They favored the growth of the larger cities, by permitting them to dominate an increasingly large hinterland. In addition, although the telegragh handled interregional communications, it could not sustain the heavy volume of intra-urban messages. This had to be accomplished through face-to-face contact or by messengers, a fact that played a role in the clustering not only manufacturing but of commercial and business activities.

Muncipal services were also more cost-effective when serving a concentrated demand, and city governments responded to growing industrial needs by massive investments in infrastructure which further assured a prosperous economic base. By the end of the 19th century, New York had spent $24 million in subways, bridges, paving and water supply, and was projecting another $86 million for the further expansion of its rapid transit, tunnel and bridge system. Chicago had spent $225 million in similar infrastructure improvements (5).

In response to the influence of these concentrating forces, an identifiable urban structure began to emerge. The labour force accomodated itself around the highly centralized economic activities, with the less economically advantaged population located in a ring around the core, and the wealthier inhabitants "commuting" short distances in carriages. Cities in the early

1900's for the reasons cited above were necessarily compact and densely built, and up until World War I , ninety percent of the employment in cities was within 1 to 3 miles of the center. This is all the more amazing when one considers the size of the larger urban areas in 1910: New York City - nearly five million, Chicago - just over two million, and Philadelphia - one and a half million.

It was only shortly before the First War that motorized transport affected the structure of cities. The use of the truck had an important role in reducing the cost of inter- and intra- urban transport, and in permitting the deconcentration of industry within the core. In addition, the waves of inmigration from abroad (which accounted for more than 48% of national growth in the first two decades of the century) led to an expansion of the lower and lower-middle class areas around the core, and a further withdrawal of the middle classes. Nevertheless, the central city remained the undisputed hub of economic, social and cultural activities.

The initial steps in the disintegration of the geographically-contained and center-dominated structure of metropolitan areas occurred between 1940 and 1960, when urban growth reached an all-time high. It began with the suburbanization of the population, permitted by the widespread use of the automobile, and accelerated by a number of other factors: the national home finance programme that favoured new construction in the suburbs over rehabilitation in the central cities; the influx of poor and minorities to the core in large numbers; an erosion of the tax

base in the central cities that resulted in a decline in municipal services; and a lifestyle preference for cleaner air, less congestion, and more space to raise growing families.

The fifties also witnessed the decentralization of manufacturing during what was one of the most significant periods of industrialization in America's history. Between 1948 and 1954, central city manufacturing employment in the forty largest SMSA's decreased relative to suburban employment, although it increased in absolute terms. Between 1954 and 1963, the central cities actually lost manufacturing jobs, while the suburbs gained in roughly equal numbers.

The long-distance truck and the greatly expanded urban road system were key factors in providing industry with more locational flexibility. The suburbs offered a number of advantages - cheap land, proximity to airports, cheaper labor, less government regulation. In the central cities, on the other hand, land was a scarce commodity, wages and taxes had risen, and there was increasing regulation of industry. In addition, as industry became more capital intensive, efficiency increased, and the ratio of output to input grew larger. Thus the importance of material inputs decreased, and with it, the economies of scale that prompted industry to cluster around transportation nodes in the first place.

Retail, and to a lesser extent, commercial activities, also moved

out to the suburbs, sapping the city core of some of its of its economic vitality. In the 1950's and 60's, retail employment opportunities in the suburbs increased substantially, while the central cities suffered a net loss of jobs in this sector (6). By 1967, nearly half of all metropolitan retail jobs were located in the suburbs.

In summary, the forces that first propelled the growth of cities were inherently centrifugal. Industries needed to locate near like industries and a major transportation node. Labor and ancillary commercial activities gathered around, trapped by the high cost of personal travel, and poor communications. The population of the cities grew, the cores became increasingly congested, and advances in transportation technology permitted the more affluent to distance themselves from the industrial core and the ring of immigrant areas that surrounded it. The spurt of economic and demographic growth in the fifties, coupled with the widespread use of the automobile and truck, and deteriorating conditions in the central city, resulted in the suburbanization of the population and the era of the commutershed. Jobs, particularly in the manufacturing and retail sectors, followed, as the central cities began to relinquish their role as the centers of economic and cultural activity for an increasingly disperse suburban areas.

THE PRESENT: 1970 - 1980

The 1970's witnessed further fundamental changes to the traditional pattern of urban settlement. Notable among these was the regional shift of population to the South and West, the decline of large cities, and the rapid growth of non-metropolitan areas. Basic economic activities shifted from manufacturing to "advanced" services, and became increasingly "foot-loose" i.e. indifferent to geographic location and suburban areas outstripped central cities in employment growth. The population profile experienced some significant variations from previous years: there were more elderly; the "baby-boomers" started to work, buy shelter and consume goods and services; and households became smaller.

The growth rate in the U.S. dropped from 13.3% between 1960 and 1970, to 11.4% over the last decade, due, in great part, to a significant decline in the fertility rate which plummetted from 123 live births per 1000 women in child-bearing age in 1957 to 66 per 1000 in 1976. By the end of the 1970's, the rate of natural increase stood at 1.8 children per woman, considerably below the estimated replacement rate of 2.1. Explanations for this decline include a decrease in the "desireable" family size, an increase in the number of women postponing child-bearing, and a rise in divorces and marital separations.

Despite the slow growth, the mobility of Americans manifested

itself in significant regional shifts in population. The North Central and North-east increased 4.1% and 0.2% over the decade, while the South and West registered growth of 20.0% and 24.1%. The population shifts in part can be explained by the rise of new industries in these regions, e.g. oil in Houston, computer technology in Santa Clara, California, retirement communities in Florida and Arizona, etc.. However, they are also indicators of a weakening of the "spatial barrier" that previously dominated the location of economic actvity, and the ascendency of amenity and quality of life as major locational determinants.

Urban growth reflected these regional adjustments, but was also marked by an internal reconfiguration, in which central cities experienced negative or stagnant growth, while the suburbs flourished. Between 1970 and 1977, 95 or 62% of the 153 largest cities in the U.S. lost population, including New York (-840,000), Chicago (-360,000), Philadelphia, Detroit, Baltimore, Indianapolis, San Fransisco, Cleveland, Boston and New Orleans. Overall, cities over 100,000 in population increased 1.9% over the decade - a virtual no-growth situation. The suburban areas grew at the healthier rate of 18.25%, with major increases in the growth regions of the South and West, and in the outer fringes of the older metropolitan areas.

The sixteen largest conurbations (SCSA's) increased by only 4.3%, and seven of these lost population. Only one (Houston-Galveston) grew at a faster rate than during the previous decade.

One of the more anomalous trends of the seventies was the rate of increase in the number of households that was almost three times that of the population. Household size nation-wide dropped from an average of 3.17 in 1970 to 2.74 in 1980. In central cities, the household size had traditionally been smaller, and decreased over the last decade from 2.98 to 2.57, resulting in a 14.7% increase in households. In the suburbs, the household size dropped more markedly (from 3.25 to 2.6), and the number of households rose by 50.6%, an indication that couples and singles increasingly seek out suburban locations.

Perhaps the most startling demographic trend of the seventies was the rate of growth of non-metropolitan areas, which for the first time since the 1800's exceeded that of urban areas. SMSA's grew at 10.2%, while the population outside SMSA's grew at 15.1%. In addition, there is evidence that the migration from SMSA's to non-metropolitan areas was greater in absolute terms than in the migration in the reverse direction. (6)

One obvious explanation for non-metropolitan growth is the spill-over of the metropolitan area across official boundaries. However, 40% of the growth registered by non-metropolitan areas was in counties not adjacent to SMSA's. This trend cannot be accurately described as a "back-to-the-country" movement, despite media articles to the contrary. The farm population continued to drop in the seventies, totalling losses of 1.4 million inhabitants between 1970 and 1976 alone. It was in fact the small and medium-size towns that experienced the highest rates of

increase. Places of less than 25,000 inhabitants grew 24.1%, while places of 25,000 to 100,000 increased 24.9%.

In the 1970's, the U.S. economy entered into what is variously known as the "information", "knowledge" or "advanced services" era. The manufacturing industry, although still a major force, continued to grow slowly. Jobs in the service sector, on the other hand, surged with substantial gains in personal services, but more importantly in services related to the handling and processing of information e.g. in fields of corporate and production management, research and development, branding, customizing, etc. As Noyelle (7) explains:

> "By any measure, the U.S. market has grown enormously during the Postwar years. Between 1950 and 1980, the population grew from 152 to 222 million (sic), the civilian labour force from 62 to 102 million, and disposable income from 362 to over 1,000 billion dollars (1972 prices)....This has led to not so much to the development of broad homogeneous markets as to the creation...of a large number of specialized markets....The result has been a proliferation of products and services, and an increased emphasis on product differentiation and styling."

National employment grew at about 25% during the decade, more than twice the rate of the population. In the 50 largest SMSA's, employment grew at the same rate as the U.S., but the geographic pattern of gains and losses continued to favor the ascendency of

the suburbs. In 1967, the central cities offered 19,861,000 jobs, which increased to 21,262,000 jobs in 1977. During the same period, employment in the suburbs increased from 10,602,000 to 16,879,000.

The central cities lost over 1,000,000 jobs in manufacturing as well as jobs in the related fields of wholesale and transportation. The greatest absolute gain was in government, followed by services and FIRE (finance, insurance and real estate). In the suburbs all sectors increased but services and retail showed the greatest gains. (8)

Overall, the number of new jobs in the suburbs exceeded those of the central city in a 4 to 1 ratio. The suburbs captured 95% of new employment in the retail sector, 63% in services, 99% in construction, and 47% in FIRE. By 1980, nearly half the jobs were located in the suburbs. The central cities had lost their dominant share in manufacturing and retailing, and they were losing their share in other sectors as well.

Nevertheless, the "boom" in the office market and widespread "gentrification" of older residential areas near the core led some observers to predict a return to the city, in response to rising energy costs, increases in housing prices in the suburbs, and decreasing household size. A study conducted under the auspices of the Urban Land Institute (9) found that in the 143 cities analyzed, 48% had experienced some degree of private

rehabilitation activity. Clay, in a later study, found private housing reinvestment in all 30 cities considered, and identified 53 areas of substantial "gentrification." The office market was strong not only in the major cities - New York, Chicago, Los Angeles, but also in "declining" cities; Philadelphia added 5.6 million new square feet of office space between 1970 and 1975; Detroit, 8 million square feet (1965 - 1975); Pittsburg, 3.5 million square feet, (1970 - 1975).

However, both the housing reinvestment and the new office construction have tended to occur in or very close to the city core. This revitalization trend, which exhibits every sign of continuing in the future, is unfortunately paralleled by a serious decline of the inner suburbs, as indicated by the the bleak picture presented by socioeconomic indicators in the central cities. In 1975, the crime rate in the cities was nearly twice that of the metropolitain areas. Per capita real income between 1969 and 1974 increased 9.9% in the SMSAs and only 8.3% in the cities. In 1980, the unemployment rate of the cental cities was 5.8% as opposed to the SMSA rate of 5.2%. The proportion of households with incomes under $7,000 was 27.4% in the central cities while in the suburbs it was 14.8%. Between 1970 and 1977, central cities suffered net losses of population in all income categories, except the lowest (under $5000), for which it registered a net increase.

THE FUTURE

The urban settlement patterns of the coming decades will continue to be shaped by three factors: communications technology, the new "service" economy, and demographic trends.

The impact of communications technology on the structure of future urban areas probably cannot be overstated, in that it will create an economic system in which locational determinanats are qualitative rather than spatial and in which physical proximity no longer serves as an indicator of functional relationship. The "foot-looseness" of employment does not necessarily mean continued dispersion but rather deliberate choice of location based on (1) amenity, i.e. the quality of life available to the labour force (2) regulations sympathetic to specific business needs and (3) availability of the utilities required to support the necessary telecommunications infrastructure, e.g., power sources that are cheap and reliable, a local telephone system with available circuits and switching capacity.

Consider operations such as credit card and check processing, car rental, hotel or airline reservation operations, insurance claims processing, or any other similar routinized or automated office function. From a communications or transporation point of view, the only locational determinant is availability of the basic technical infrastructure. The mode of communication with head office and with customers is an area code 800 number, a

computer installation, or the mail. Thus, the location of many of these facilities has been determined by the quality of life factors: better weather, less crime, and lower housing prices.

The regulatory environment for business is also a key locational consideration. A few years ago, a major bank requested the State of New York to increase the interest rate limit on credit card outstandings. Public officials, concerned over the political ramifications on an increase in the usuary limit, denied the request. The bank subsequently moved its credit card operations (which employed over 2,000 people) to South Dakota, which was only too happy to accomodate the bank's needs. A second similar operation is being established by the same bankin Nevada.

Another major effect of advances in communications technology is that the capacity of management to control operations over a large geographic area will greatly increase. With the rise of the giant "multilocational" corporation, the "headquarters" function in large cities will greatly expand.

Advances in communications technology will continue to dramatically diminish the barrier of geographic distance with regard to social interaction and cultural diffusion. With the divestiture of A.T. & T., it is expected that long distance calls, which formerly susidized the high cost of the local infrastructure, will in the near future be priced at the same levels as local calls, thus eliminating distance as a factor in

one's choice of a partner in socializing via the telephone. The television has already had a like effect in reducing cultural isolation. Paradoxically, it is increasingly used now not only as an instrument of cultural homogenization but also to heighten local awareness and identity. Community cable stations that can respond more closely to the tastes and interests of its local viewers are proliferating, and may soon prove to be strong competition to the national networks.

Projected trends in economic activities indicate increased "foot-looseness" for rutinized processes, smaller units of production, increased market segmentation and specialization, and a continued need for face-to-face contact among high-level executives and decision-makers. The experts predict that further expansion of the service sector will be the major trend, but it is also likely that manufacturing will continue to be a significant contributor to the economy.

Manufacturing, with smaller units of productions and more widespread separation of processes, will tend to continue to locate where land and wages are low, regulations are sympathetic, and accessibility to highways and/or airports is maximized. These factors will favor an exurban location in the future. There is evidence however, that certain consumer-sensitive industries may relocate in cities or in dense urban centers, as market segmentation becomes more important.

The locational propensities of various components of the new

service sector are not completely clear. A number of functions, especially those that are rutinized, will have tremendous locational freedom. Other information industries where daily personal contacts are unnecessary (e.g. research and development) will also be increasingly "footloose". On the other hand, "headquarters" functions will locate in what Thierry Noyelle (10) calls "diversified advanced service centers", in order to insure face-to-face contact among high level executives. The largest cities will have a particular advantage in that they will increasingly provide centers for both national and international business. "High touch" services, such as advertising, legal services, financial advisers, will also continue to locate in these centers near the decision makers. It is not clear to what extent this latter group will separate functions internally, locating rutinized operations in one location and high level personnel in another.

Greater locational flexibility and increasing emphasis on market specialization could also mean that headquarters employment will be relatively reduced, as regional offices will locate closer to their markets. These branch functions will also spawn a myriad of "high touch" business services, outside the "diversified advanced service centers".

Population growth at the national level, is projected to decelerate further in the future, increasing by only 9.6% between 1980 and 1990, and 6.9% between 1990 and the year 2000.

Fertility rates, which are now below the replacement rate, will probably level off, although there is disagreement on this subject. On the other hand, there may be some increase in births as the number of women in childbearing age rises as a result of the "baby-boom". Immigration is also likely to maintain its present level, as America continues to present comparative advantages over its Latin American neighbors.

The anticipated shifts in the age pyramid are expected to have a significant effect on urban life over the next ten to fifteen decades. An increase of 30% in persons aged 25 to 44 will produce a higher rate of household formation than in the previous decades. Between 1980 and 1990, it is estimated that 17 million new households will be formed, 51% of which will be single-person. Many of these will be occupied by the elderly, who will increase in number by 4.1 million over the next decade.

Adolescents and young adults as a group, will decline from 10.6% of the total population in 1978, to 7.9% in 1990. Bradbury et al (11) have hypothesized that a result of this decrease could be a reduction in crime, which has traditionally registered much higher rates among males aged 14 to 24. The reduction in the number of young adults could also have the effect of lowering the unemployment rate as fewer people enter the labour market.

So what does this all mean for future population and job location? How will urban settlement patterns respond to the

expected advances in communications technology, the changes in the economic base, and the new demographics?

It would appear that there will be two opposing forces acting on urban settlement patterns over the next few decades. One will be an increasing locational freedom of both jobs and people; the other will be a greater need for a certain level of concentration and density.

The "concentrating" factors include:

- Face-to-face contact for decision-making functions.
- Face-to-face contact for social interaction as a lifestyle preference.
- Critical mass of population required to support increasingly diversified consumer services and goods.
- Smaller households.
- Increased housing and land costs that favor multiple-unit dwellings.
- Rising energy costs.
- High cost of new infrastructure.
- Agglomeration advantages for certain activities: live arts and culture, headquarters functions and related business services.

Factors that allow and, in some cases, favor increased "foot-looseness" include:

- o Rise of information industries that are based on "knowledge products as opposed to "material" products.
- o Cultural diffusion via telecommunications.
- o Separation of processes and small units of production in manufacturing.
- o Disadvantages of central city: high land, wages and housing costs, decaying infrastructure, and high crime rates.
- o Over-regulation in urbanized areas.
- o Increased ability of management to efficiently control branch operations over any distance.

Expert urban observers (12, 13) predict three possible scenarios for future settlement patterns: a revival of the core as the dominant urban component, continued dispersion around a declining centre, and a multi-nucleated system in which central cities become just one of many higher density nodes.

The revival of the central city is unlikely, although there may be substantial rejuvenation in the core. Land and housing prices are exorbitant, crime rates are high, the infrastructure is in decay, and there is an increasing number of poor and minorities. These are not the conditions that will pull back either the

middle class population or economic activities that have the option of locating elsewhere.

Dispersion is also doubtful, and in fact, does not really characterize accurately the trends of the 70s, as much of the population movement was to small and medium sized towns, inside or outside the SMSA's. Classic dispersion occurred in the 1950s when families with automobiles bought three bedroom houses on large lots, and commuted to work in the city. It should be noted that this dispersion occurred around a central core, not as a phenomenon in its own right. It is not probable that we will see a revival of this trend: costs and other inconveniences discourage commuting; single and two person households tend to seek a certain level of density, for reasons relating to social preference, and choice and costs of housing.

The most likely scenario is a system of independent nodes or centers that offer work, living and recreation in close proximity. These centers will have a certain level of density to allow social and business interaction, and will be of sufficient scale to support a strong retail and service market. It will be a new urban form in the sense that, unlike a metropolitan area where the component parts have a clear relationship with the center in terms of employment, culture, and entertainment, in this new configuration, economic, social and cultural interdependencies will be non-proximate, i.e., not spatially defined.

The existing large cities that can successfully exploit the opportunities available in the new service sector are likely to experience decline in the older suburbs and continued revitalization within their cores. The scale of agglomeration represented by these areas will continue to have comparative advantages for the highly affluent and the poor. The highly affluent, the decision makers, require face to face contact to carry on business; they can afford the escalating housing prices; they support the live arts that are aglomeration oriented; and they are less affected by poor servies in infrastructue. The poor will continue to locate in the old cities for completely different reasons: the greater availability of social service infrastructue, the increasing political base of minorities at a local level, and the greater opportunities for unskilled labor. Thus the central city will survive, but at a certain cost, as the economic gap between its inhabitants widens.

SOME DIRECTIONS FOR FUTURE POLICIES

What does all this augur for the development of planning policies in the future? What will be the role of planners in the evolution of this new urban structure?

Planners in the United States have a curious role. The basic purpose of their activity is somewhat at odds with a society that

puts a high value on individual freedom and the rights of the free marketplace. Thus American planners tend to act as regulators rather than initiators, followers of trends rather than trendsetters. As members of a vocally pluralistic democracy, they play the role of mediator and middleman between various interests. They do not have the status or the influence of technocrats in more socialist or communally-oriented countries, and thus tend to largely reflect political realities - the views of the voting majority, or compromise solutions between political opponents.

This is not to say that planners have not had, or will not have an impact on the evolution of U. S. cities. As we have noted, regulatory policies in the past have been responsible for stemming and spurring trends in growth and location of people and jobs. However, the nature of the future changes and the dynamics of the market for housing and jobs must be thoroughly understood, so that regulations and policies may be developed to optimize the opportunities for an improved quality of life. Planners should focus their efforts to ensure that the rising centers develop in an orderly and desireable manner, and that the problems of decline and decay in the old cities do not become insurmountable.

Land use regulations outside the older metropolitan areas should be shaped to facilitate the development of centers that include multi-family dwellings, and allow a mix of work, residence and leisure activities. If the overly restrictive and complex regulations that presently govern many suburban areas

are not revised, new jobs and housing will be forced to locate outside urbanized areas, incurring unecessary costs in new infrastructure, and restricting the development of the critical mass that will be necessary to maximize choices and diversity in living conditions, services, goods, employment and leisure-time pursuits.

A combination of strategies should also be adopted to prevent severe decay of central cities. Architecturally and historically significant areas should be protected to encourage private reinvestment. There should be an increase in transfer payments so that the tax burden on central cities is on a par with outlying areas. The older suburbs, where the severest decay is likely to occur, should be the target of tax incentive programs to encourage new housing. Privatization of municipal services, such as sanitation and garbage pickup, should also be considered to relieve the tax burden. A number of cities are currently experimenting with programs to "balance the equities" between the booming core areas and outer ring by taxing downtown construction projects in order to fund low and moderate income housing in the less advantaged areas of the city.

Creation of jobs in the "new service sector" should be a key objective of central city policy in the future. Land use controls should encourage expansion of growth industries such as personal services (e.g., health clubs, restaurants, entertainment), consumer-sensitive manufacturing (e.g., apparel), and components of the information industry (e.g., data processing). Tax breaks

should be made available to a targeted group of major employers, and programs should be undertaken to train the unskilled worker for employment in the growth sectors.

Technology and communications will continue to shape the cities of North America. The challenge for the planners of the future will be to acquire the sophistication and knowledge necessary to deal with the new phenomena competently and humanely.

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