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An Analysis of Urban Sprawl in American Cities

by M. Robert Holland

Introduction

On the eve of the twenty-first century, most traditional meanings of the word “city” have changed. As early as the 1930s, Lewis Mumford commented that high density urban living was being replaced by a multitude of uniform, unidentifiable houses, lined up inflexible, at uniform distance on uniform roads in a treeless communal waste. Since World War II, the U.S. Census Bureau has counted residents according to Metropolitan Statistical Areas that may spread for many miles beyond the limits of the city proper. Fueled by inexorable growth, the City of Atlanta, for example, has recently surpassed Los Angeles as the most sprawled city in the nation, “creating an MSA sixty-five miles north to south and 110 miles east to west.” If these growth patterns continue, “Atlanta” will reach from Macon, Georgia, to the Tennessee Appalachians, and from Athens, Georgia, to the eastern border of Alabama. (Appendix A) Patterns of development can be detrimental, not only to the residents of the city proper but to the entire region. Atlanta has already been forbidden additional federal transportation funds until it is able to correct its ground-ozone level violations as determined by the Environmental Protection Agency. At present, the city exceeds daily limits during the summer as a result of excessive amounts of pollution from traffic. Local planning authorities are hindered from adequately managing “the best freeway system in the world” because most of Atlanta’s north side, where traffic is most congested, was created “by the auto and for the auto.” Atlanta defines the post-World War II city with its amorphous structure designed primarily for automobile accessibility. As local planners attempt to address these problems of development, they are confronted with the complications of providing alternative transportation methods for low-density urban
development. Even though they have provided housing at a marginally lower cost to the private owner, sprawling patterns of development have also left significant economic, societal, and environmental woes in their wake.

As sprawl rapaciously encroaches upon the countryside, it is causing irreparable sociological damage in the central cities where it originated, by isolating the less fortunate from adequate opportunities to succeed. Sprawl is also leaving community coffers in debt as municipalities and state governments facilitate illogical growth patterns through infrastructure investments. Despite the fact that the aforementioned problems relate specifically to the human element of sprawl, it would be remiss not to analyze the environmental impacts. Between 1970 and 1990, America’s urban population has increased 22.5% while population density has decreased by 23%. This occurred while 30,000 square miles of natural ecosystems and biospheres, an area approximately equal to one-third of Oregon’s land mass, were reclassified as urban. The situation is desperate in some areas: “In Chicago and New York, the land area has grown twelve times as fast as the population for decades.”

The underpinnings of urban sprawl have been facilitated by an increasing dependence upon the automobile. The majority of America’s suburban land was created as a result of inefficient land use patterns of segregation which differentiate among commercial, industrial, and residential development. Segregated land use was created for the car and is accessible only by the car, as an indirect result of the 1927 U.S. Supreme Court Case Euclid vs. Ambler. Not until the problem of inadequate urban transportation is resolved will current patterns of urban sprawl ever be eliminated.

As sprawling patterns of development lose their desirability, policy makers and urban planners must have a greater understanding of the historical influences and economic forces that led to the creation of urban sprawl. The role of transportation analysis will become more important in urban development, as city planners attempt to encourage residents to reside closer to their jobs. One important way to facilitate relocation is to determine where major employment centers will be located in each respective MSA. The planning of major employ-
ment centers could feasibly be the greatest accomplishment of modern planners, especially if public policy-makers follow with appropriate developer incentives for transit-oriented development in the vicinity of employment centers. Strategic placement of mass transit nodes will further increase the chances of creating higher densities. These changes will have the potential to create a vast sea of contained development that will continuously increase and decrease residential densities based upon location. This more efficient pattern of development would create a series of Regional Activity Centers, which will function as local centers of culture, entertainment, government, transportation, and employment. The role of the central city will diversify to include a sizeable residential population in retrofitted skyscrapers and other buildings formerly designated for commercial use. As a result of these actions, the life, vigor and vicissitudes of the past will return to America’s barren city centers.

Part One: Understanding Sprawl—Analysis of the Complications of Post-World War II patterns of development

The economic impact of sprawl is its most detrimental aspect. The cost of urban sprawl is a direct result of the fiscal insolvency of state and local governments that results from debts that these local municipalities assume entirely or in large part by themselves. The cost is also a result of the rifts in the sociological fabric of a community when the center city “becomes a home by default for poor residents who cannot follow (because of income or infirmity) or who are not allowed to follow upper-income residents to the suburbs (because of zoning).” As wealthier residents relocate to surrounding suburbs and countryside (the 1960s “White Flight”), the infrastructure must be expanded to accommodate population movement. A threat to the fiscal health of governments then arises when the demand for revenue is constant or increases as the sources of tax revenue diminish. The strain on local economies is exacerbated by the maintenance cost of the existing infrastructure. To combat rising expenses and lower population growth, cities are forced to raise taxes. A cycle ensues that increases
the rapidity with which corporate citizens and residents vacate the city for lower tax rates and less expensive land outside of the city. Both of these costs eventually cause prices of living and commerce to increase throughout the entire region: “As a result, wage and product costs increase, and companies and regions become less competitive.”

The economic implications of urban sprawl are often ignored because market forces are the predominant cause. It is a known fact that the farther away from the central city one lives, the more home one may buy, thus producing a higher return on investment for residents in the short run. The problem with this development is that the actual cost of residential building (sewer systems, water systems, streets, schools and storm drainage) drives up the overall cost of new home construction and becomes a severe drain on local economies in the long run. Rarely are the costs of these improvements passed on to the developer or the resident.

In 1992 the New Jersey Legislature prepared an Interim Development and Redevelopment Plan that called for directing more compact development patterns. The study showed that, if current sprawling patterns of development continued unabated, the state would be $16 billion dollars in debt by 2010. If new compact development patterns were followed, there would be a capital infrastructure savings of $1.3 billion dollars. When all capital costs were tabulated, it was determined that the cost for three dwelling units per acre was approximately $35,000 per unit, but, if development were to occur ten miles away from the main sewerage and water system, the cost would increase approximately $15,000 per DU for a total of $48,000. It was also found that in estate zoning of one DU per four acres the infrastructure cost was $92,000 per DU. Fortunately, by promoting compact developments close to the central city, it is possible to reduce the DU cost to about $24,000 for multifamily housing types and garden apartments and $23,000 for buildings in areas contiguous to current development. (Appendix B). In fact, “The relatively low cost of $18,000 per DU can be achieved with the construction of multi-story apartment buildings with more than twelve DU’s per acre.”
Under sprawling development, New Jersey would also have to provide 288,000 pupil spaces to the year 2010 (365,000 gross need less 77,000 usable excess spaces); If the state uses contained development policies, the need is slightly less at 278,000 pupil spaces. Overall, if new space had to be built to accommodate all new students the cost of new school facilities would be approximately $5.3 billion under current development patterns and $5.1 billion by promoting compact development.7

In California, the Sierra Club, in partnership with the San Francisco-based Bank of America, launched a study entitled “The Cost of Sprawl” that made several alarming conclusions about the effects of sprawl on various entities in the state. Sprawl has had adverse effects on the business climate. By reducing the quality of life, the state has become a less desirable place to live and do business. These costs have caused the state’s image to slowly deteriorate, and many businesses have relocated. There is also a higher direct business cost when state taxes rise to combat the cost of maintaining sprawl. Sprawl was found to create a geographical problem relative to housing costs as well. Workers are often forced to drive inordinate distances to find affordable housing. The Central Valley and South Bay area in northern California are currently experiencing this phenomenon, and the San Bernardino area of southern California suffers the same fate.

Transportation costs are extremely expensive as a result of sprawl. New residents of suburbs are forced to shoulder unnecessary debt through the costs of automobiles since “the average Californian spends 20% of his/her income on transportation.”8 There is also a loss of time caused by lengthy commutes and resulting sociological problems because of families left unattended. Residents were forced to suffer when they moved to “low-cost” suburbs because most new-home buyers in California pay additional taxes (called Mello-Roos) to cover the cost of new infrastructure: “New taxes often double the new suburban homeowner’s tax bill.”9
The report also determined that sprawl-induced ozone depletion is directly responsible for $200 million in annual agricultural losses. This is a result of a 30% loss in agricultural production. A direct loss of land due to sprawl has other effects as well. Between 1982 and 1987, the Central Valley, California’s leading agricultural region, lost almost half-a-million acres of productive farmland. Some of this land can be replaced by bringing new land into agricultural production but often at a high economic and environmental cost. Many of California’s microclimates also support unique agricultural products that cannot be replaced at any cost.  

Environmentally, it was found that sprawl has expensive costs in the air, on the land, and on water: “The South Coast Air Quality Management District, which has the strictest air-pollution regulations in the country, estimates that air pollution in the four-county Los Angeles area cost $7.4 billion per year, or about $600 per resident.” While “58,000 people died in the Vietnam conflict, 60,000 people die each year in Los Angeles alone as a result of respiratory illnesses that can be attributed to air quality.” After half a century of these patterns of development, 95% of California’s natural wetlands have been destroyed. The state also has the highest number of threatened or endangered species in the nation. As far as the water system is concerned, California has seriously over-drafted forty of its 350 ground water basins. It is predicted that “by 2020, the state will face a water supply deficit of between 2 million and 8 million acre-feet.”

In addition, “The City of San Jose discovered in a 1993 study that sprawling development into the valleys would leave it with an annual deficit of $4.5 million, while building all new homes inside the city’s boundary will result in a gain of $2 million.” In another study, New York’s Dutchess County found that residential land requires $1.12 to $1.36 for every tax dollar it contributes, while agricultural land requires only $.21 to $.48 for every tax dollar it contributes. As early as 1974, the only federal study on sprawl determined that compact development (eight or more units per acre) saves approximately 15% in road and utility cost over less dense development. Furthermore, the total capital burden for local government could be as much as one-third less with compact develop-
ment, while operating costs for sewers, water, education and other services would be five to six percent less: “Higher densities (twenty to thirty units to the acre) are even more cost-saving—56% less for total capital and 11% for operation and maintenance.”

Other studies by Rutgers University, Loudon County, Virginia, and the State of Florida have made similar conclusions about the economic costs of sprawl. The Rutgers study found that each new house costs $12,000 to $15,000 more to serve with public facilities because of sprawled development than if development patterns were compacted. (Appendix C) Loudon County, Virginia, found that “net public revenue shortfalls occurred from new residential development for all densities.” The study also compared public costs in urban and non-urban service areas. It determined that, for every dollar in tax revenues received by the county, $1.28 in services was demanded by residential land uses, whereas only $.11 in services was demanded by open farmland.

As evidence that the United States is not the only nation suffering from sprawl, another important study was completed in Melbourne, Australia, where similar problems are being experienced. The report concluded that it is cheaper for cities to pay developers to build near downtown cores than it is to pay for the cost of sprawl, especially in terms of infrastructure development and pollution from automobiles: “Lower road, sewer and education costs amount to a net benefit of $21,760 for every household created in downtown rather than suburban Melbourne.” By luring developers downtown through property tax breaks, bargain prices on city land and density zoning, “Melbourne’s Planning Authority is estimating a net savings of $87.1 million over twenty years for every 8,000 residents who move downtown instead of to the city’s suburbs.” (Appendix D)

As evidenced in “The Cost of Sprawl,” transportation is seriously affected as well. It has been found that Americans spend 5% of the GDP on automobiles. These high costs are not necessarily found in dollar figures but can be felt in loss of time due to commuting. The city of Atlanta is now under a federal moratorium that bans them from receiving federal dollars to expand their road system. The north side of Atlanta’s freeway system is too crowded to sustain Los Angeles-style sprawl. The area’s significant development is too dispersed to be
accommodated by anything other than the automobile. Atlanta’s transportation problems are now adversely affecting the capital of the New South. The Wall Street Journal recently downgraded Atlanta’s rating as a city in which to invest, because of its formidable challenges in developing an efficient transportation system. The average speed on Los Angeles County freeways is below 20 mph, but in a two-mile stretch in the northern arc of Atlanta’s Interstate 285 the speed often drops to 4 mph. Another transportation-related cost is direct-parking subsidies, roads and services worth approximately $100 billion annually: “Low-income drivers typically spend 40% of their income on the automobile, often more than on food and housing.”

The National Round Table on the Environment and the Economy faulted sprawl for many other problems as well. These included poor recycling rates due to the large cost involved in collection, as compared to collection in compact housing systems, and high domestic heating energy, due to a lack of shared-insulating that occurs when buildings are grouped (50% differences are found). The NRT also cited high storm water pollution for extra-urbanized land (low-density areas have double the storm water pollution of medium density areas), as well as high land requirements in both block size and road systems required for service. Road provision is much greater in low-density than in medium density areas.

It has also been found that cars are harmful to trees. Particulates in the air from auto exhaust often have acutely toxic effects on plants. When these particulates settle on leaves, surfaces become coated and the amount of sunlight reaching the plant is reduced. In some cases, the pores of the leaves may be clogged with dust. The overall effect is poor growth, leaf drop, death of twigs, and, in severe cases, death of the entire plant. Auto emissions have been linked to the declining health of forests. For example, ground-level health of forests effected by the photo-breakdown of auto emissions can cause plant injury as far as sixty to seventy-five miles from the origin of the primary pollutants. Conifers and some deciduous trees are damaged by concentrations of ozone equal to less than what is commonly experienced in Canadian urban areas. In addition, “Winter-time can also dramatically increase the hardship cars impose on trees. Apart
from the damaging effect of winter-long doses of road salt, the concentrations of acid from the season’s total precipitation are delivered to the trees in one sudden dose during the spring thaw.” 23 Studies in London, New York, Tokyo, Toronto, San Francisco, and Chicago have made similar discoveries.

Doubling residential or population density reduces annual distance traveled by car per person or per household by 20% to 30%. Heat is used 20% more efficiently in semi-detached houses than in detached dwellings. Water consumption is reduced by 35% in high-density communities. Overall energy consumption by transport, space heating and cooling is reduced by 40%. 24

While the economic and environmental impact of sprawl is most dominant, the sociological dynamics of urban sprawl cannot be ignored. Over the last two decades, for example, there has been a notable movement of the African-American population from St. Louis to St. Louis County. Between 1980 and 1990, 30,000 African Americans moved to St. Louis County. At the same time, in twenty-five census tracts for St. Louis County, with almost all of them in north St. Louis County, 34,000 whites were shown to have moved out of the county. Of the 30,000 African-Americans who moved to St. Louis County, 21,000 of them moved into the twenty-five census tracts that experienced a loss in white population. The census also reported that in suburban St. Charles County in 1990, there were just over 34,000 people five years and older who had lived in a different Missouri county five years earlier. White north county residents did not move exclusively to St. Charles in the 1980’s, but the foundation for growth in St. Charles has been predominantly white north county transplants. The re-location trend continues today. The Census Bureau estimates that the population of St. Charles County has increased by 36,000 since 1990.

From 1982 to 1992, just over 38,000 building permits were issued for new private housing in St. Charles, resulting in a private capital investment of $380 million in the county’s infrastructure. A comparable expenditure of public funds has gone for road improvement to handle these additional residents. According to the Missouri Department of Transportation, its St. Charles County projects totaled approximately $236.5 million from 1987 to 1996. The St. Charles County
transportation sales tax paid for $88.5 million in projects over the same time period: “That is a total infrastructure investment of almost $750 million dollars in just 10 years! Assuming that 15% of the movement to St. Charles County is a result of ‘white flight’ (a number consistent with the percentage of communities that have turned over racially), $106 million has been spent on infrastructure as a direct result of social ills.”

Another less tangible effect of urban sprawl is the emptiness of most American cities. Until recently, most downtowns were devoid of population after the business day was over. When visitors from abroad come to visit our cities, they often want to be taken to “the city,” that is, the downtown area. Unfortunately, most American cities are nothing more than shadows of their former glory before sprawl enveloped the land. There once was a time, many years ago, when cities were accessible by foot, and there was a defined sense of place, a sense of community and inclusiveness. Residents greeted one another or at least saw each other as their daily routines unfolded. Neighborhood parks were places where individuals congregated and spent time together on Sunday afternoons. Although these patterns of development are not currently being promoted, there is still a desire to be part of a community. This fundamental human need to belong and be a part of something greater than one’s self is a major reason that sprawl is bad for communities. Many Americans today spend their entire existence living in single-use homes that are isolated from neighbors. They travel in their daily routines in isolated cars and live in subdivisions that are isolated from other people and other walks of life. Although America is more crowded than ever, it is a nation of isolation. By containing sprawl and bringing back a sense of community, perhaps a more congenial society based on interaction and respect can emerge in place of today’s shallow cities.

Urban Sprawl has proven to be a serious threat to America’s cities. On an economic level, it has depleted budgets through infrastructure costs and depleted tax bases of local municipalities and state governments. Sprawl has proven detrimental to the environment by producing auto emissions that cause poor air quality, destroy forests, encroach upon ecosystems, limit water usage, and de-
sstroy the quality of life in many areas. Sprawl has also proven to have serious effects on the sociological health of urban areas, when those less educated and socially sophisticated are left without influences that may potentially increase their ability to succeed. It has also proven to have a huge impact by forcing individuals to spend money on vehicles to live in areas that were created by the automobile and can be served only by the automobile. By living in this “auto-world,” innumerable hours are lost commuting daily, and Americans continue to live in an isolated world that threatens the fabric of the nation. After understanding the many effects of sprawl, it is unfathomable that local governments and public policy makers can continue to allow these threats to impose themselves upon the health of our cities.

Part Two: Solving the Problems—How to Build the City of the Twenty-first Century

The problems of urban growth are becoming increasingly apparent in the landscapes of the American prairie, desert, and coastal plains. Planned or managed growth is an attempt to limit the damaging effects of human encroachment at all costs. By containing growth within locations that are more efficient to service, planners will assist environmentalists in preventing developers from interrupting the pristine beauty of the countryside. Fiscal budgets will also be better maintained. Water and sewer services, road repair and maintenance, municipal functions, school facility development, and solid waste collection should be contained near existing developments, since most “urban” scale development projects cannot exist without these services: “These types of development controls limit the unrestrained use of undeveloped peripheral land and also limit the costs of providing public infrastructure to the land.

A counter-movement opposed to traditional post-World War II development patterns emerged that focused on creating a modern community with an organic layout, structured around the citizens of the community rather than around the automobile. This new housing philosophy also eliminated tradi-
tional segregated land use patterns that are indicative of auto-based Master Planned Communities. As an offshoot of the preservationist movement of the late 1950s, planners sought to recreate the often romanticized qualities of pre-World War II housing. Communities built from Florida to California are marked by straight and narrow streets, little or no accommodations for vehicles, diversified land usage, and highly developed town centers.

Neo-Traditional Development:

The most prominent firm leading the effort to create more livable communities is Miami-based Duany-Plater Zyberk. After leaving Miami’s cutting-edge Architectonic in 1981, Duany-Plater Zyberk, or DPZ, began working with another Miami architect, Robert S. Davis. In conjunction with Davis, DPZ initiated the first neo-classical town in American history—Seaside, Florida. Seaside was originally an empty patch of land that the architect had inherited from his father. Davis decided that, in contrast to traditional sprawling patterns of development in the Panhandle, he would create a visionary town with the features of a livable city.

Seaside’s design plan was aided by an absence of zoning in Walton County, Florida, that allowed the planners and the architect to manufacture a “perfect community” with its own codes and pseudo homeowner’s association:

The code aspired to harmonious diversity by including guidelines for proportions, dimensions, and materials and by designating features that are required, such as deep front porches, tall narrow windows, straight narrow streets which frame a view of visual terminations such as a gazebo or the community pool and bathhouse, on-street parking, separate garages situated toward the back of lots, galvanized steel roofs, screen porches which cover a certain percentage of the facade, picket fences, underground utility cables, and colors which fall within a specified range of pastels.27
It is a small-town environment that these codes attempt to preserve, and they are the most important factors in the survival of Traditional Neighborhood Developments. The creation of Seaside is not just an architectural achievement but a “social synthesis which applied nationally will allow a much larger range of people and talents to become active citizens, in the full meaning of the phase,” said Duany.

Avalon Park in Orange County, Florida, is another project being proposed by DPZ. (Appendix E) In Avalon Park, like Seaside, DPZ intends to create a mixed-use city comprised of a number of towns and villages as immediate focal points for the daily activities of living, shopping and recreation. The Avalon plan utilizes the neighborhood concept as the fundamental component of the city plan: “Located within each neighborhood are public buildings, convenience stores, day-care centers, bus stops and playgrounds, all within walking radius of two to five minutes from most homes.” Where four of these neighborhoods come together as a quadrant, town centers are formed at the intersections. Located at these points are more intense concentrations for retail, office and residential uses. The entire plan is laid out on a grid to provide free traffic flow with a multiple choice of routes for shortened travel time to destinations. The town-center and neighborhood streets are tree-lined, employing traditional architectural themes and a specific spatial ratio of street width and relative height, creating the charming feeling of older towns such as those found in New England or Virginia, Charleston or Savannah. These are places that command some of the highest property values in America because of their allure, livability and functionality. The resulting plan creates an integrated, orderly hierarchy of housing, employment and services, most of which are within walking distance of residences. Affordable housing, shortened or eliminated car trips, mass transit, and an efficiently flowing local road system replace the usual scattering.

The use of alternative transportation methods is the focal point in all forms of TND, as planners and developers attempt to create a city of functional design and pleasing aesthetics so that the complications of traffic can be averted. In other places, “Planners...are at a loss to make automobiles and cities com-
patible with one another." According to a report released by the Nationwide Personal Transportation Study, “vehicle miles traveled (VMT) increased by 41% between 1983-1990 as the population increased by only 6%.” Two-thirds of this increase is attributed to an increase in trip distances, as more individuals depend upon their autos for daily travel. During the same seven year span, commuting distances increased 25%. The analysis proved that for the next generation of cities the existing relationship between work, home, and recreation must be further explored to ensure that these transportation problems that are the underlying causes of nationwide sprawl can be alleviated.

Transit Oriented Development:

As focus for a regional scale of development, Transit Oriented Development is becoming increasingly prevalent. Transit systems are usually built on existing rail or light rail lines that snake through a metropolitan area. Along the rail system exists a series of transit nodes that are designed to house approximately 5,000 people of various socioeconomic backgrounds and accommodate 3,000 jobs on approximately 100 acres. (Appendix F) In addition, “Areas of intense development, known as transit ‘nodes,’ are designed with specific use patterns for each individual node.” While some are primarily for residential or light commercial use, others are intended for manufacturing or industrial transport. Each node is signified by a series of paths throughout lavishly landscaped public areas, paths that allow interaction among various groups that would otherwise be separated in traditional suburban development patterns. Building construction in the nodes is designed with a maximum of two to three stories, so that the human scale is preserved and there is no more than a quarter-mile walk to the nucleus. In contrast to DPZ’s efforts in Seaside, here there is minimal focus on the specific guidelines for development of the structure. The focus of a TOD is on the creation of amicable public areas for interaction and accessibility.

Northern California is home to Calthorpe’s most prominent example of a TOD—Laguna West. Located twelve miles south of Sacramento, Laguna is the first large-scale orchestrated effort to integrate mass transit patterns with TOD.
In this 800-acre development that is entirely walkable, Calthorpe created five neighborhoods with houses that are pushed to the street, creating “a public face,” on-street parking, and garages at the back of homes. Neighborhoods are gathered around a sixty-five acre lake, traversed by three causeways that meet at the center of the development: “At the center are elaborate civic buildings, high-intensity commercial areas, tree-lined plazas, and low-rise apartment buildings and town homes.” The plans for Laguna also include an extension of the mass transit routes of Sacramento’s light rail system. Once this occurs, the development will truly become a series of Pedestrian Pockets.

Calthorpe envisioned a place that will eliminate traditional post-World War II development patterns, if plans are followed properly. In the beginning, the success of Laguna was moderate at best. A surprising outbreak of rashes and sores, presumably from the swampland that was drained to create Laguna, quelled much initial interest in home purchasing. In the past few years, however, home sales have improved dramatically, and Laguna is now “the” place to live in the Sacramento area.

What differentiates TOD from TND is that TOD is located around a mass transportation “node” or congregation of high-density development. On a large scale, TOD development patterns allow an individual to navigate an entire region by living in close proximity to mass transit, thereby decreasing automobile dependency.

The entire Laguna development has a radius of one-quarter of a mile, the ideal size of a transit-oriented community. The human scale of TND is at the nucleus of this type of development and is facilitated by traditional grid street patterns and a respect for all open lands and community spaces. Seaside even forbade the construction of homes directly on the beach because such buildings would have caused immediate depreciation of all property that was not beachfront—a major problem in most American beach towns.

These alternative development styles have yet to be proven effective nationally because they have not infiltrated all areas of the country. In certain isolated situations, however, it has been proven that TND can produce 57% less VMT
than a comparable-sized project laid out in a conventionally planned urban development: “The evidence to date, albeit largely hypothetical, suggests that neo-traditional and transit-oriented plans could effectively combat traffic growth by shortening trip distances and, potentially, by reducing the number of auto trips made. Higher densities, integration of land uses, and efficient circulation systems are also essential contributing factors.” Through proper implementation of these alternative development patterns, it could be possible to alleviate many of the environmental, sociological, and economic problems that have long been associated with traditional patterns of sprawl and to start a new tradition of great American cities.

Portland and Metro 2040—America’s Most Visionary City:

The Pacific Northwest city of Portland, Oregon, is in the midst of a bold and unprecedented twenty-five year long experiment to reinvent the American dream of a livable community. Portland took the road less traveled by promoting smart growth without perpetuating the negatives of more cars and freeway lanes. Not long ago, a visiting reporter called Portland a shining example of effective sprawl control, and another reporter described its land use process as the most modern in the world.

Portland offers a quality of life that is the envy of much of the nation. Transit has been a defining color in the palette Portland uses to paint its future. The metropolitan area has seen transit as a vehicle to move people, to shape growth, to clean the air, to reinvest in the downtown, and to defer highway investments. Regional residents also recognize that land use planning will determine the viability of high quality transit, while limiting sprawl and creating more attractive communities. Citizens, businesses and governments support both transit and land use planning because of the tools that Portland has used successfully to achieve a livable community. The Portland story is more about community building than transportation or light rail building, however. The most important element is that transit is seen as a means to an end. That end, the community’s goal, is livability.
The city’s bold experiment with transportation and land use planning is starting to produce dividends which set it apart from other American cities. The livability of America’s cities is at risk. Because automobile use and sprawling development patterns are increasing, transit ridership and the vitality of urban cores are down. The Portland story is significant because something different is happening there. As a result of Portland’s land use policies, transit is starting to do the unthinkable—it is winning over automobile dependency. Between 1990 and 1996, Tri-Met’s ridership grew 20% faster than growth in vehicle miles traveled, 41% faster than growth in transit service, and nearly 150% faster than growth in population. This growth is particularly significant, given the fact that “An Urban Growth Boundary (UGB) legally separates that which is urban from that which is rural. Since the adoption of the 235,000-acre boundary in 1979, Portland has urbanized 39,000 acres.” At the same time, the population within the UGB has increased by more than a third, and “the core of Portland is healthy and vital. Employment has grown from 56,000 to 109,500 since the mid 1970s, a 100% increase.” No new roads have been built in the downtown core for twenty years, for the city would not be able to sustain additional traffic. Transit carries the equivalent of two lanes of traffic on every major thoroughfare to the downtown area. Transit also provides the transportation capacity to serve downtown growth. One third of work trips to downtown are by transit. It has become the mode of choice for two thirds of Tri-Met’s riders, meaning they choose not to use an available car for the trip or choose not to own a vehicle. After many federal air quality violations in the 1970s, the city has now achieved all standards required by the federal government.

The Portland region is still facing one of its toughest challenges yet, in attempting to accommodate significantly more people without lessening its livability: “Approximately 645,000 new residents will be added to the four county MSA in the next twenty years. That is the equivalent of another one and a half cities equal in size to Portland.” Once again, transit has been called upon to alleviate this problem. Transit is at the forefront of the region’s strategy, to coordinate transportation investment with land use and to leverage the kind of
future Portland’s citizens want. An unprecedented modern rail revolution is underway to focus growth along corridors while expanding Portland’s rail system from fifteen to seventy miles:

Recent projects have included the $935.5 million extension of Max to the west opened for service to Hillsboro; Bechtel Enterprises entered into an innovative partnership in December 1997 to build a 5.5 mile $125 million extension of Max to Portland International Airport without using any federal transit funding or an increase in local taxes; Portland’s voters are being asked to reauthorize $475 million in property tax based bonds to extend the Max to the north and south. \(^{38}\)

The city is also underway with engineering work on a Central City streetcar project. The streetcar promises to link thousands of new homes to the city’s core without the need for any federal transit funds.

The citizens of Portland have significantly raised the bar for transit performance in the next millennium with Metro’s 2040 project—the region’s unparalleled long range transportation and land use plan: “Region 2040 asks the questions; how do we want to grow and what do we want the region to look like and how do we get there?” \(^{39}\)

There are two fundamental differences between the planning practices of Portland and most other American cities post-World War II. First, the Region 2040 plan is simultaneously testing both alternative land use and transportation futures. Secondly, the legal authority to implement these strategies lies entirely within the jurisdiction of the Metro Council.

Region 2040 proposes the end of the traditional suburb because the whole region will theoretically become urban. The plan’s goal is to accommodate most anticipated new growth inside the region while protecting valuable farm and forest land that surrounds Portland and its suburbs. By carefully focusing density into centers and corridors, the suburbs will urbanize and fade away. Region 2040 is also intended to improve air quality, reduce auto dependency and demand for more roads and highways, and preserve the region’s livability—all this...
while continuing to absorb a tremendous influx of new residents and future generations.

In 1990, Portland’s voters gave Metro unprecedented legal authority to require local governments to change their plans and zoning codes in order to be consistent with Metro’s adopted regional framework plans. The lengthy process—to change plans and fund priorities, to use transportation investments explicitly as a tool to help leverage future land use that the region envisions—is now underway. Since 1994, Metro, Tri-Met, and local municipalities have developed and evaluated three basic alternative growth concepts. The idea was to frame a range of reasonable choices. As prototypical plans, all of the city’s proposals were not intended to survive the analysis. The best elements of each concept were finally crafted into a recommended alternative and adopted in December 1994. Three concepts were analyzed: 1) continuing outward growth identical to that found in the majority of American cities by expanding the Urban Growth Boundary; 2) freezing the Urban Growth Boundary, substantially increasing density in transit corridors; and 3) decanting some growth to satellite cities, with the majority of activities concentrated in the center of the city.

The Recommended 2040 Alternative adopted by Metro builds on the region’s past success by focusing on transit and a tight UGB as a means to grow and preserve the region’s livability. The identified building blocks involve maintaining a tight UGB. The plan forecasts a “40% increase in population by 2017 and the need for a 2% expansion of the urban area. Seattle, for example, saw a 38% population increase and expanded its urbanized area 87% in 20 years.”

Focusing growth on centers and corridors is another important aspect of the plan: “Two-thirds of the jobs and 40% of households would be in existing centers and along corridors served by buses and light rail. Residential neighborhoods would be preserved as the dominant land use. To accommodate increased densities, inner neighborhoods would have smaller lot sizes—70% of existing neighborhoods would be left in their current size.”

Desiring to develop a system of urban green spaces for active use and nature, voters approved overwhelmingly a $35 million Greenspaces bond measure and moved green space preservation from theory to practice.
The plan calls for about 34,000 acres of open space in the land within the Urban Growth Boundary. Most importantly, the plan includes an aggressive expansion of Max and the bus system. The 2040 plan includes a 300% increase in the level of transit service. Transit has become a primary means to accommodate increases in regional travel and to reduce reliance on the automobile. For example, in regional centers the mode share of work trips on transit has increased over 300%.

Local governments cooperated with each other to raise the standard for regional planning to new heights. To accelerate implementation of the Region 2040 growth concept and help maintain a tight Urban Growth Boundary, local governments came to Metro and asked them to prepare an early implementation strategy that would be binding for local governments. The “Urban Growth Management Functional Plan” was approved unanimously in July 1996 by the Metropolitan Policy Advisory Committee of local officials who represented 89% of the region’s population. Never before in the history of this country had several local governments been incorporated into a single entity to form a Mumfordian regional government.

This legally binding document gave local governments until February 1999 to accept regional twenty-year growth targets for residences and employment. Local plans had to be changed to increase permitted densities and to assure sufficient capacity consistent with the 2040 growth concept. Municipalities also had to adjust local codes to provide for reduction in parking minimums and maximums. They were required to manage the location of new “big box” retail so that investment and reinvestment in retail, as well as in commercial developments at existing centers, would be maintained. Transportation impacts were to be minimized while still reducing levels of acceptable congestion on road systems in high-density areas and providing good transit and/or pedestrian networks.

The city’s voters placed a phenomenal amount of power in Metro’s hands. Since acceptance of Metro 2040, the region has embarked on a groundbreaking effort to intensify development within the urban growth boundary and to pro-
tect precious natural resource areas while still creating transit-friendly communities. The plan will reduce reliance on the automobile, and it is unlikely that the region would have agreed to its cutting edge strategy without light rail’s successful track record of revitalizing neighborhoods.

By any objective standards, the Portland area can be viewed as extremely successful in integrating land use and transit: “Investment in new development adjacent to Max already exceeds the cost of the project by nearly 900%.”

Thirty years ago, Portland’s downtown, like many in America, was a place of decay and poverty. Portland’s civic leaders then made a concerted effort to grow smart. Through its transformation, Portland has provided America with an example of how to grow and enhance livability. Defying conventional attitudes that air pollution and traffic congestion are unavoidable effects of growth, Portland attributes such problems to poor planning. The city’s successes are the culmination of twenty-five years of hard work and preparation.

Downtown Portland provides an example of smart choices—the results of which are growing the right way. The key element of Portland’s success is the collaboration of strategies between public and private sectors. The Central City Plan focuses the most intensive development in places adjacent to transit—by design, transit is put in the center of the action. Transit has proven to be the genetic code from which all development patterns emerge. Strict limits have been placed on commuter parking. Downtown office buildings have tight parking maximums but no minimums. The closer one is to Max and the transit mall, the less parking one is allowed. For example, the maximum ratio of parking in new office developments on the mall is set at one parking space per four employees. Portland’s parking limits have been extended to follow Max to the Lloyd District. Development is required to occur at a pedestrian scale with a mix of uses—blank walls are illegal, buildings must come up to the street, and 60% of ground floor uses are required to be retail. Because of their “investment in improved transit, since 1971 Tri-Met has expanded service by more than 150% and seen a nearly 260% increase in ridership.”

Today, the downtown benefits from investments in the Portland Transit Mall Fareless Square and Max. Fareless
Square is a downtown circulator maintained by federal transportation dollars. Downtown Portland has also benefited from a balanced transportation strategy. For the last twenty-five years, no new road capacity has been added to the downtown area. Portland actually removed a six-lane expressway to create a downtown river-front park and then used more funds to invest in transit. Portland has easily become, in the words of Architecture magazine, “the biggest downtown success story in America,” a vital, vibrant downtown anchored by the Transit Mall and Max. The long-term effects of land use planning are irreversible. Even if the city wanted to change course, twenty-five years of policy cannot be corrected as a result of downsizing of arterial and collector streets with transit in mind: “A 1984 study estimated that it would tax approximately six forty-two story parking structures to accommodate the vehicular traffic and two additional lanes would have to be added to every major highway entering the downtown.”

For American cities, Portland’s experience provides a model for the vibrant compact city. The twenty-year marriage of transit and land use has paid large rewards. The city as a planning and civic stewardship can make a positive difference in people’s lives. The Urban Growth Boundary is showing that the genetic code of cities can be re-engineered. Traffic jams and urban sprawl are not inevitable products of growth because transit is actually starting to win the war against the auto. Pedestrian transit ridership is growing faster than the growth in service expansion, population growth or VMT, and “the city has managed to make its Max station a magnet for new development as the $2.4 billion dollars in new investment proves along the east side and west side Max locations.” The neighborhoods of Portland have also proven to be magnets for new capital, stimulated by the influx of residents to the center city. New transit-oriented communities after the style of Calthorpe theoretical models are rising out of fields along the undeveloped west side Max route. Portland has proven, for the first time in this nation’s history, that attention can be paid to the structure and functionality of cities before developers construct projects with little or no benefit to the greater community.
Ultimately, Metro 2040, Transit Oriented Development, and Neo-Traditional Development are means of rebuilding communities. For too long pollution, traffic, and other issues have infringed upon our enjoyment of life. Grassroots organizations, as well as the general public, have been forced to lead lives of diminishing quality as a result of America’s haphazard development patterns. A better way is needed for contemporary society and for future generations of Americans as well. Unless more legislation and political action occurs, Americans will be forced to live in vast urban wastelands—devoid of centers, snarled in traffic, impossible to maintain, and consuming astronomical quantities of time and money.

Winston Churchill once said that Americans could be counted on to do the right thing after they had exhausted the alternatives. On the eve of the twenty-first century, we have to reacquire the lost art of civic planning and redesign our rules for building. We need to recreate a nation of places worth caring about, places of enduring quality and memorable character. Human beings long for a sense of permanence. It touches the profoundest aspects of our existence and yields a sense that life is short, fraught with uncertainty and sometimes tragic. In short, “we know not where we come from, still less where we are going, and to keep from going crazy while we are here, we want to feel that we belong to a specific part of the world.”

Endnotes

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