

NEW URBANISM AND TRANSPORTATION

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Introduction

Transportation systems have direct and significant impact on the daily lives of all residents in the United States (U.S.). Whether the person drives or not, the type of transportation system available in the neighborhood affects one’s choice for walking, bicycling, and

driving. According to one of the U.S. House of Representatives¹ reports, “the average household spends 19 percent of its income on transportation, more than on any other expense except housing, and the average person travels 43 miles each day.” Sprawl Guides² report, “While average population growth since 1982 in 68 metro areas was 22%, road space grew by 33%.” Citizens for a Better Environment reports that in Southeastern Wisconsin between 1970 and 1990, population increased 3% while land use increased 26%. Since 1950, the numbers are even more staggering. The population increased about 17% while residential, commercial, industrial land use increased by almost 50%. Increase in land use has resulted in additional roadways, subdivisions with extra cul-de-sacs, and more driving to take care of everyday errands.

What we have today is more and more people driving to make shorter trips: trips that could have been made via walking or bicycling had the neighborhood design supported pedestrian/bike pathways and connectivity to local establishments. More driving trips has increased environmental costs. According to the Citizens for a Better Environment, an efficient land use plan and transportation options could cut total environmental costs from \$580 million in 1992 to \$317 million in 2040.

Creating livable communities by preserving open space and more compact development will bring back the sense of community and have stores and libraries within walking distance. Due to larger lots and homes being dispersed, there has been a lack of community sense in newer subdivisions. Increasing sidewalks in subdivisions and having stores and libraries within walking distance will help bring neighbors together, decrease automobile dependency and lessen air pollution.

Cooperation amongst the federal, state, and local entities could bring about balancing individual rights with community goals for more livable neighborhoods. Land use and transportation planning could be designed in a way to provide more boulevards to emphasize public transportation, streets that integrate many modes of travel and provide easy pedestrian/bicycle pathways, and roads that address automobile, pedestrian, and bicycle needs. Municipalities could use Portland as an example and have specific requirements for transportation planning at the local level. Portland’s Title 6 in the Urban Growth Management Functional Plan requires that “local jurisdictions review and modify their development codes as needed to promote multi-modal street designs that emphasize walking, biking and pedestrian travel in centers and corridors...limits cul-de-sac designs to promote better connectivity in local street systems to encourage non-auto modes of travel.”

Transportation design could also be used to improve public health. Since more and more people are driving to run everyday errands, and thus increasing the number of shorter trips, perhaps a street design that is pedestrian/bicycle friendly may encourage people to walk/bike than drive. If schools, libraries, and services (dry cleaning, shopping, etc.) were within walking distance, perhaps more people would walk than drive to run the everyday errands. Walking and bicycling to run the everyday errands could help improve one’s health. Walking is a good physical activity and could be a source of one’s everyday exercise routine.

¹ “Views and Estimates of the Committee on Transportation and Infrastructure for FY 2004,”
<http://www.house.gov/transportation/views2004.html>.

² Sprawl Guide, Planners website.

With the increase in population and sprawl, one needs to really look at the future impacts and consider what might mitigate these problems. New urbanism is not the only correct answer, but it is a viable option for cities and communities. One will need to concern what might cities become and how they will develop over the next 50 years. With the current trends of increasing congestion, sprawl, and pollution, cities could use new urbanism principles as one option in developing their communities over the next 50 years. New urbanism is a choice, a promising choice in community development since it may cope with trends and issues better. 2050 seems far away, but actually it is not that far away. New urbanism needs to be explored as a direction in community development so that future generations could enjoy a better quality of life

The issues of land use and transportation planning, and “new urbanism” need to be explored to find better ways of providing walkable and livable neighborhoods.

Objectives and Goals

The objective of this project is to examine the problems of land use and transportation planning that does not support walkable neighborhoods. This project will explore the issues surrounding “new urbanism” and present case studies of livable neighborhoods. In addition, this project will analyze what has been done and develop what could be done. The goal is to present the issues surrounding “new urbanism”, analyze the problem, and conclude with future implications of the problem for year 2050.

Scope

The project will be limited to secondary data obtained from various literatures (books, journal articles, and periodicals) and will not include primary data gathered from first-hand survey research. The project will use data gathered by other researchers and make an analysis from literature review and library research. This project does not entail going out in the field nor surveying people from different cities. Thus, this project will involve using data already gathered from previous research and surveys.

Effects of Congestion

According to the U.S. Department of Transportation’s Journey-to-work trends report, the U.S. population increased 39% from 179 million to 249 million, and the number of households increased 73% from 53 million to 92 million during the period from 1960 to 1990. Also during the 30-year period, workers commuting by private vehicle rose from 43 million to 101 million, an increase of 135.5%. Workers commuting by car increased, while use of transit decreased from 7.8 million in 1960 to 5.9 in 1990. People working at home increased from 2.2 million in 1980 to 3.4 million 1990. During the 1980 to 1990 period, the number of vehicle per household grew

from 1.61 to 1.66. During the period from 1960 to 1990, many factors influenced commuting behavior (e.g., population increase, workers, commuting activities, mode of travel, working at home, baby-boomers maturing into working adults and entering workforce, increase in women in the labor force, economic shifts from manufacturing to service).

According to Strathman and Dueker³, the increase in mean travel time among the 39 largest metropolitan areas in the U.S. was actually below three percent from 1980 to 1990. The authors assert that the little change in mean travel time is a result of the “off-setting effects of two forces affecting urban commuting in the 1980s.” The first force described in Strathman and Dueker’s article (“A Note on Changes in U.S. Metropolitan Commuting Times, 1980-1990,” 1995) is that with the increase of workers choosing to drive to work in the 1980s, the share of transit and walking trips were reduced by 18 to 30 percent, and thus decreasing the average commute time to work. However, the reliance on autos has contributed to increase in urban roadway congestion. There has been an increase of commutes within and between suburbs rather than from the suburbs to the central core. The increase in travel time was mainly due to congestion.

In the 2003 Urban Mobility Study⁴ by the Texas Transportation Institute (TTI, based at Texas A & M University), “the cost of congestion continues to climb...5.7 billion gallons of wasted fuel and 3.5 billion hours of lost productivity resulting from traffic congestion in 2001 cost the nation \$69.5 billion, \$4.5 billion more than the previous year.” The report states that “traffic congestion levels have increased in every area since 1982.” The Urban Mobility Study looked at 75 urban areas in 2001 and found the average delay per person is 26 hours. Also, from 1982 to 2001, “number of hours of the day when congestion might be encountered has grown from about 4.5 hours to about 7 hours.”

According to TTI, “the average cost per person in the 75 urban areas was \$520 in 2001.” To put the amount of fuel wasted into perspective, 5.7 billion gallons of wasted fuel would fill 114 super-tankers or 570,000 gasoline tank trucks. According TTI, placing 570,000 gasoline tank trucks side by side would stretch from New York to Las Vegas and back. In addition, “the average amount of wasted fuel per person in 2001 in the 75 study areas was 42 gallons.”

Congestion is not a problem for the big cities, but a problem for all cities of all sizes. According to the U.S. House of Representatives’ Views and Estimates of the Committee on Transportation and Infrastructure for FY 2004⁵, “the average annual delay per peak road traveler increased by 288 percent, from 16 hours to 62 hours from 1982 to 2000.” Due to traffic congestion, 5.7

³ Strathman, J.G. and K. J. Dueker, “A Note on Changes in U.S. Metropolitan Commuting Times, 1980-1990”, Portland, Oregon, 1995.

⁴ “2003 Urban Mobility Study,” <http://mobility.tamu.edu/ums/report/>, accessed December 4, 2003.

⁵ “Views and Estimates of the Committee on Transportation and Infrastructure for FY 2004,” <http://www.house.gov/transportation/views2004.html>.

billion gallons of fuel were wasted in 2000⁶. Using Texas Transportation Institute's estimates, "traffic congestion cost motorists in the nation's 75 largest urban areas a staggering \$67.5 billion in 2000 in terms of wasted time and fuel...this \$67.5 billion total cost equates to an average annual cost per peak road traveler of about \$1,160⁷."

What are adding to the travel times are not just commuters driving to work, but residents running everyday errands using the automobiles. If the neighborhood had been more pedestrian friendly, residents could have bypassed using their vehicles and walk or bike to run the everyday errands. A better and more pedestrian/bicycle friendly neighborhood design could help to lessen roadway congestion both in the urban and suburban areas.

As cities expand out to the suburbs and to the urban fringe, Pas⁸ asserts "travel is becoming more dispersed...a big increase in suburb-to-suburb travel is causing a type of congestion that is difficult to ameliorate with traditional transportation systems."

Effects of Sprawl

According to "A Guide to Smart Growth and Cultural Resource Planning," sprawl is described as the "opposite of Smart Growth" which is defined as "an umbrella term for a set of tools that communities can use to direct growth the way they want." Using the National Trust for Historic Preservation's definition of sprawl as described in "A Guide to Smart Growth and Cultural Resource Planning," sprawl is a "dispersed, low-density development that is generally located at the fringe of an existing settlement and over large areas of previously rural landscape. It is characterized by segregated land uses and dominated by the automobile."

Daniels⁹ describes sprawl as new housing and commercial developments in the countryside that are in one of two forms: 1) "a wave of urban or suburban expansion that sweeps into the countryside; or 2) scattered housing, offices, and stores outside of established cities and towns." In the U.S. Department of Transportation Statistics Annual Report 2000, sprawl is described as having the following characteristics: 1) dispersed commercial and industrial sites, 2) low density residential population, 3) single-use zoning (residential, shopping centers, commercial industrial and office parks are separated), 4) noncontiguous or leapfrog development, and 5) heavy reliance on highway vehicles for transportation. "Snyder and Bird¹⁰ defines sprawl as a "very low-density development outside of city centers, usually on previously undeveloped land."

⁶ "Views and Estimates of the Committee on Transportation and Infrastructure for FY 2004," <http://www.house.gov/transportation/views2004.html>.

⁷ Ibid.

⁸ Pas, E., "Mobility trends in U.S. Cities," Metro 2020 Conference on Urban Mobility, November 1990.

⁹ Daniels, T., "When City and Country Collide," p. 3, Island Press, Washington, D.C. 1999.

¹⁰ Snyder, K., and Lori Bird, "Paying the Costs of Sprawl: Using Fair-Share Costing to Control Sprawl," paper written for "New Market-Based Incentives for Sustainability", 1999.

According to the U.S. Department of Agriculture, the “loss of farmland and other open space to development has more than doubled in recent years¹¹” (Sprawl Guide, planners website). According to the report, the rate of loss grew to 3.2 million acres a year between 1992 and 1997. When agricultural land is lost, farmland productivity is reduced. Land use outpacing population growth has resulted in a loss of over 100,000 acres of farmland. Between 1963 and 1990, over 240 square miles of farmland was lost in Southeastern Wisconsin. According to the Sierra Club¹², “sprawl destroys more than two million acres of parks, farms and open space each year.”

Loss of agricultural land and open space is a consequence to a less mixed-use of residential neighborhoods and more single-family homes on larger lots. Heimlich and Anderson¹³ report that the “development of scattered single-family houses removes land from agricultural production and changes the nature of open space.” As for evidence of loss land use outpacing population growth (as reported in Heimlich and Anderson’s paper): 1) from 1950 to 1990, St. Louis’ population increased by 35% while land use increased 355%; 2) between 1970 and 1990, Kansas City’s population grew by 29% while land use increased by 110%; 3) over the last decade, Chicago’s population grew by 4%, housing use increased 46% and commercial land use increased by 74%; 4) population in the Chesapeake bay increased by 50% from 1950 to 1980, while commercial and residential land use increased 180%; and 5) Philadelphia’s population increased 2.8% while developed area increase by 32% from 1970 to 1990.

The Sprawl Guide from the planners website states, “urban sprawl is a burden on local government because it forces limited resources to be allocated to the creation of new infrastructure rather than to maintaining existing infrastructure.” Studies have shown that residential development requires \$1.24 in expenditures for public services for every dollar it generates in tax revenues, compared to farmland or open space generates only 38 cents in costs for each dollar in taxes paid. As Heimlich and Anderson point out, “low-density patterns of development result in a greater loss of sensitive environmental lands, including wetlands, flood plains, critical habitat, aquifer recharge areas, stream corridors, and steep slopes.¹⁴”

Perhaps public policy to foster “smart growth” and “livable communities” all throughout the 50 states is what we need to combat unplanned scattered growth. Perhaps following in the examples of Oregon and Colorado, an urban growth boundary should be initiated throughout all communities. On the regional level, scattered development can be attributed to the lack of planning and cooperation among communities and multi-agencies covering similar areas. Working together to share a common goal of creating livable communities can lessen traffic congestion and decrease the needs to widen or expand highways and freeways. On the local level, municipalities using the zoning powers to entice commercial development for collection of more taxes may have contributed to haphazard growth. An urban growth boundary will prevent haphazard growth, and with the cooperation among multi-agencies, residents and local officials can perhaps help to control and manage growth in a sensible way.

¹¹ Sprawl Guide, planners website

¹² Sprawl Overview, Sierra Club, <http://www.sierraclub.org/sprawl/overview/>, accessed November 26, 2003.

¹³ Heimlich, R.E., and W.D. Anderson, “Development at the Urban Fringe and Beyond: Impacts on Agriculture and Rural Land,” p. 2, Economic Research Service, Report No. 803, 2001.

¹⁴ Ibid, p.33.

In Colorado, a comprehensive plan and an urban growth boundary helped to stem sprawl. In 1959, the city of Boulder “enacted a ‘blue line’ ordinance that banned any development above the 5870-foot mark on the mountain overlooking the city” (Daniels, p.76). Residents approved a cap on the number of building permits issued each year with preference for multifamily housing. The city’s comprehensive plan spelled out where development could or could not go. The city required that new housing projects set aside 15 percent of the units for low-and moderate-income residents. In the 1980s, a one-cent sales tax was passed and bonds were sold to raise funds for purchasing open space around the city. Colorado claims, “nearly twenty thousand acres of preserved greenbelt now discourage sprawl and create a buffer between the city and the countryside.” “The city estimated that the cost to the public of servicing development land was about \$3000 per acre per year, while the public expense to maintain open land was only \$75 per acre per year.”¹⁵ Daniels asserts that in accommodating development, urban or village growth boundaries and rural residential zones are good growth management techniques. These techniques can “promote more compact development that is cheaper and easier to service, and reduce sprawl by keeping urban services from stretching into the countryside.”

To stem sprawl, a balance between the rights of individuals and the interests of the community is necessary. According to Rusk, “there are no permanent right answers...the task is always to keep pursuing the proper balance.”¹⁶ Daniels describes a successful growth management programs consisting of two types of techniques: “carrots,” which encourage good development, and the “sticks,” which regulate development. There is no one solution to stem sprawl, but it can be curtailed by federal, state, and local entities working together to balance individual rights with community goals for more livable neighborhoods.

Creating livable/walkable neighborhoods will not only help to lessen congestion but stem sprawl and contribute to an overall increase in the quality of life for everyone

New Urbanism

Background

Before the 1950s, many cities around the U.S. had that quaint town/village feel where people knew their neighbors and walking was used extensively to run the everyday errands. With suburbanization and the high demand for the automobiles, communities were built not to accommodate residents, but automobiles. Streets were built to accommodate traffic and not pedestrians or bicycles. According to Great Streets¹⁷, “a grass-roots revolt against these auto-only designs has emerged in the past two decades.” Great Streets describes the “common threat” in new urbanism, smart growth, and context sensitive design as “a new respect for local communities and traditions in how streets are planned, built and maintained.”

¹⁵ Daniels, T., “When City and Country Collide,” p. 76, Island Press, Washington, D.C. 1999.

¹⁶ Rusk, D., “Inside Game Outside Game,” p. 166, Brookings Institution Press, Washington, D.C. 1999.

¹⁷ <http://www.greatstreets.org>

Some areas around the country have been working to turn their main street into “centerpiece of a renewed main street or downtown.” Some of the communities that have turned their streets into great “Main Streets” include Troutdale and Lake Oswego in Oregon, Annapolis in Maryland, Charlottesville in Virginia, and Vancouver in Washington¹⁸. Due to the ever-growing demand for the automobiles, street design has become nothing but building asphalt lanes for vehicle access. What used to serve, as the center of town providing recreational opportunities and civic activities has become nothing but thoroughfares for the automobiles. Land use has become single-use only, rather than form based with mixed use of residential, retail, and office.

Congress for New Urbanism

Peter Katz, who served as the first Executive Director of the Congress for New Urbanism, was responsible for bringing together Peter Calthorpe, Andres Duany, Elizabeth Moule, Stefanos Polyzoides, Elizabeth Plater-Zyberk, and Daniel Solomon (all architects) to form the Congress for New Urbanism with the purpose of spreading the word about New Urbanism. These founders were interested in creating neighborhoods that provided a high quality of life while protecting the natural environment through their buildings and designs. Founded in 1993, CNU today has more than 2,300 members in 20 countries and 49 states.

Congress for New Urbanism (CNU) advocates the “restructuring of public policy and development practices to support the restoration of existing urban centers and towns within coherent metropolitan regions...stand for reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy¹⁹.”

New Urbanism promotes for neighborhoods with open space for civic opportunities, sidewalks and streets based on the grid system, connectivity with developments and surrounding residential areas, and an integrated use of mixed-residential, retail, and office space within walking distance from residential units. One could apply the “popsicle test” as described by CNU (a criterion used by New Urban News) to decipher whether a neighborhood project is “new urbanist.” As described by CNU, if an “eight-year-old child in the neighborhood is able to bike to a store and buy a popsicle without having to battle highway-size streets and freeway-speed traffic²⁰,” the neighborhood is a new urbanist.

New urbanism is not just about creating walkable neighborhoods but includes “infill projects in existing urban areas, redeveloped neighborhoods including public housing developments, and regional guidelines for development” (Congress for New Urbanism website). Some of the new urbanism projects in Milwaukee include the Park East Redevelopment Plan (retail and residential), East Pointe (residential, neighborhood retail, parks, and parking), Cityhomes (redevelopment of two blocks into middle-income single family homes), and Beer Line B (redevelopment of former rail and canal corridor). Some of the projects in Madison include Midtown

¹⁸ “Main Street Profiles,” <http://www.greatstreets.org/MainStreets/MainstreetsProfiles.html>.

¹⁹ Congress for New Urbanism, <http://www.cnu.org>, accessed October 2003.

²⁰ Ibid.

Commons (which is the first traditional neighborhood design in Madison with a diverse mix of residential, retail, office, civic, and parks) and Middleton Hills (which will consist of a town center, park, and independent senior living facility). Cities like Milwaukee and Madison are already in the process of creating or redeveloping areas into walkable neighborhoods by using mixed use of residential, retail, and office developments.

New urbanism is not against automobiles, but rather does not favor designing “places for the sake of easy car access, free vehicle flow, or easy parking.” The emphasis of new urbanism is walkable, interesting streets, and livable neighborhoods. The CNU considers the following belief: “we believe in choice...people should be able to choose to walk, bike, take transit, use a scooter, ride a motorcycle, or drive a vehicle...too much urban planning assumes that everyone will drive a car making life miserable for those who don’t.”²¹

The CNU advocates the following: “CNU aims to change the way America builds its cities and towns...we want regions that are made of thriving neighborhoods, connected by efficient, effective transit...we want neighborhoods that feel alive, where people from all walks of life can cross each other’s paths and meet their needs...we call this form of development new urbanism, and the policies that support it are called smart growth.”²²

What is “new urbanism”? Neo-traditional neighborhood design? Walkable neighborhoods?

New urbanism, also known as “traditional neighborhood design” and “neo-traditional neighborhood design” is a planning principle that provides for more livable and walkable neighborhoods in a more pedestrian friendly environment. Some argue that new urbanism is the answer to suburban sprawl and it’s an effective way to counter communities so dependent on the automobile that every trip made is by car.

New urbanism strives to provide a mixed-residential use from apartments to single-family homes both affordable and expensive in efforts to have residents of varying income levels. At the same time, new urbanism strives to protect critical habitats and natural environments by having more dense developments. For example, rather than having one to three units per acres in the suburban areas, new urbanism provides for neighborhoods from eight to 50 units per acres. This helps to stem sprawl while protecting natural areas. New urbanism combines elements of the 18th and 19th century American and European towns to give that “neighborhood feel where everyone knows your name” with interconnected streets, easy access to transit, and bicycle and pedestrian pathways.

²¹ Congress for New Urbanism, <http://www.cnu.org>, Ibid.

²² Fregonese, J., L. Peterson, and C. Nelson, Correcting the Record, Comparing development policy in Portland, Oregon and Atlanta, Georgia, Congress for the New Urbanism.

New urbanism advocates sidewalks, grid network, an integration of housing, retail and office, a neighborhood/town center within walking distance to residents, and bicycle paths. Residential areas that are gated or have “tree-like street system” do not constitute new urbanism. New urbanism promotes connectivity with “surrounding neighborhoods, developments, or towns, while also protecting regional open space.” Land use designated for single use, whether it’s for just residential or retail or office does not constitute new urbanism. In addition, new urbanism supports having a neighborhood/town center that is within walking distance from all residential units in the neighborhood, and has open space for public use.

Walkable neighborhoods are “compact communities designed to encourage bicycling and walking for short trips by providing destinations close to home and work, and by providing sidewalks and a pleasant environment for walking and biking.”²³

Since the 1950s, new streets were built to accommodate automobile traffic and not pedestrians. According to Great Streets²⁴, “streets are central to building these new, traditional communities because of the critical role they play in creating a unique community identity, healthy business environment and public space for citizens to use and enjoy.” Street design is essential to good land use planning, especially in efforts to create walkable neighborhoods. Streets need to provide pedestrian and bicycle access. Neighborhoods need to be designed in a way that provides pedestrian and bicycle access for the residents, thus creating a walkable neighborhood.

Traditional Neighborhood Design is a planning principle based on “town planning” that encourages compact developments. According to the U.S. Department of Transportation’s Federal Highway Administration²⁵, “traditional neighborhoods are more compact communities designed to encourage bicycling and walking for short trips by providing destinations close to home and work, and by providing sidewalks and a pleasant environment for walking and biking...these neighborhoods are reminiscent of 18th and 19th century American and European towns, along with modern considerations for the automobile.”

Some of the qualities in a traditional neighborhood design include the following²⁶:

1. sidewalks are usually wider to entice walkers
2. sidewalks are laid out in a grid pattern to provide easy access to neighboring streets and areas
3. because the streets are in a grid pattern, streets are designed to slow traffic; vehicle speed is 15 to 20 mph
4. freeways are usually located on the outskirts of town, and no way near the neighborhood center
5. interconnected streets and sidewalks encourage walking and bicycles, and spread out vehicle traffic, thus reducing congestion

²³ “Lesson 6, Neo-Traditional Neighborhood Design,” <http://safety.fhwa.dot.gov/pedbike/univcourse/swless06.htm>.

²⁴ <http://www.greatstreets.org>, accessed October 2003.

²⁵ “Lesson 6, Neo-Traditional Neighborhood Design,” <http://safety.fhwa.dot.gov/pedbike/univcourse/swless06.htm>.

²⁶ Ibid.

6. garages are located in the back in an alley, which allows narrower lots with fewer driveways on local streets
7. smaller homes make it more affordable for purchase
8. from the town center, retail, restaurants, office and residential units are only ¼ mile away, about a 5-minute walk
9. streets are designed in such a way to control vehicle speeds; street landscapes force drivers to drive slower
10. encourage mixed-use with no minimum building setbacks, to encourage integration of residential, retail, and business activities

Biggest roadblocks to new urbanism are “existing street design standards geared to traffic volume and efficient movement, and zoning that prohibits small lots and mixing building types.”²⁷ In some municipalities, both the fire department and the sanitation departments want wider streets so that two fire trucks could pass each other from opposite direction with cars lined on the streets if necessary.

According to Burden²⁸, principles guiding health neighborhood development consists the following:

1. higher traditional neighborhood design densities of 6-12 dwelling units/acres instead of conventional densities of 1-5 dwelling units/acre
2. mixed uses, including parks each 1/8 or ¼ mile
3. homes that face the street and garages located in the back
4. accessible transit within ¼ of a mile

By reducing vehicle use and using land more efficiently, walkable neighborhoods provide a higher quality of life.

Transit Oriented Developments

Transit-oriented development has various definitions, but it is basically a “mixed-use community that encourage people to love near transit services and to decrease their dependence on driving.”²⁹ The developments around light rail stations in the Portland areas exhibit a good TOD example. Calthorpe Associates is a leader in TOD guidelines, where “principles emphasize a pedestrian-oriented street network, street facing architecture, a mix of complimentary uses, and the use of public transportation.”³⁰ According to

²⁷ “Lesson 6, Neo-Traditional Neighborhood Design,” <http://safety.fhwa.dot.gov/pedbike/univcourse/swless06.htm>.

²⁸ Burden, D., Street Design Guidelines for Health Neighborhoods, Transportation Research E-Circular, Urban Street Symposium Conference Proceedings, Dallas, Texas, June 1999.

²⁹ Transit-Oriented Development, <http://www.realtor.org/SG3.nsf/Pages/transitdev?OpenDocument>, accessed December 4, 2003.

³⁰ Calthorpe Associates, <http://www.calthorpe.org>, accessed December 4, 2003.

Sprawl Watch, "TOD advocates the importance of coordinating land use and transportation decisions and the need to cluster housing, commercial activities, and overall density along transit routes."³¹

Ballston Station in Arlington, Virginia is a good TOD example. The development of a transit village in Ballston has resulted "2,471 residential housing units and 3.7 million square feet of commercial space were built within a one-third mile radius."³²

According to RTD Denver, TOD has many benefits and impacts. Some of the social impacts include "providing choices in transportation allows more freedom in mobility for people, health experts conclude that TOD promotes walking on a regular basis leading to long-term health benefits, villages and neighborhoods bring people together through casual encounters, increasing sense of community, and less time spent driving means more time for other activities."³³

In Denver, the free MallRide bus service in the 16th Street Mall in downtown is a prime example of transit villages. Opened in 1982, the free MallRide has brought in a mix of housing, office, shopping, and entertainment to the Central Business District.

Vuchic³⁴ asserts, "transit...as the most effective mode and, for many trips, the only feasible alternative to the car, transit must be included in the basic decision about the form and character of the city and its metropolitan area."



Denver 16th Mall
Source: <http://www.rtd-denver.com/Projects/TOD/>

³¹ Transit Oriented Development: Development with People in Mind, <http://www.sprawlwatch.org/reducingmotor.html>, accessed December 4, 2003.

³² Ibid.

³³ Transit Oriented Development, RTD-Bringing transit to your community, and community to your transit, <http://www.rtd-denver.com/Projects/TOD/>, accessed December 4, 2003.

³⁴ Vuchic, V.R., Transportation for Livable Cities, pg. 253, Center for Urban Policy Research, Rutgers University, New Brunswick, New Jersey, 1999.

Benefits of New Urbanism

There is research supporting the correlation between walkable neighborhoods and lower body mass indices, because it provides an environment where people could complete the every errand via walking or bicycling. Walkable neighborhoods provide more opportunities to walk or bike which helps with one's exercise regimen. Having to walk to run the everyday errands will enable people to get more exercise than planned. In reference to the obesity problem in the U.S., Eberstadt³⁵ asserts "still other observers point naturally to the greatly diminished physicality of American life: the fact that vehicles rather than feet get most people where they want to go, that recess and other run-around time has been curtailed in schools around the country, that sedentary pursuits of television and electronic games are climbing alongside those juvenile body-mass indices."

According to Vuchic³⁶, "the availability of transit adds to the diversity of transportation options and can help create more livable cities...congestion and environmental problems could be mitigated by the availability of competitive transit...by increasing accessibility to retail, office, and civic spaces, congestion can be reduced." Steiner³⁷ asserts, "creating greater accessibility to community services may reduce the burden of travel of both men and women irrespective of the role they take in the household." This will enable residents to combine recreation with retail activities and reduce the level of travel. According to Steiner³⁸, "women in households with children made a significantly larger number of stops while shopping especially a grocery stores, specialty food stores and at store that sold clothing and other comparison goods."

Traditionally styled land use developments have many benefits: decrease in traffic demand, convenience from the integration of residential and commercial developments, close proximity to work, shopping, and entertainment, land/street amenities with street lighting fixtures and sidewalks, and ambience not existent in most suburban communities.³⁹ With destinations located ¼ mile from the town center and people only having to walk about 5 minutes to reach their destinations, this will mean families will need fewer cars, thus helping to curb congestion and decrease emissions.

³⁵ Eberstadt, M., "The Child-Fat Problem," Policy Review, February & March, 2003.

³⁶ Vuchic, V. "Mobility trends in U.S. Cities," Metro 2020 Conference on Urban Mobility, November 1990.

³⁷ Steiner, R., Women's Travel for Shopping in Traditional Neighborhoods: How does a Woman's Role in the Household Affect Activity and Travel for Shopping, University of Florida, Women's Travel Issues, Proceedings from the Second National Conference.

³⁸ Ibid.

³⁹ Wolshon, B., and J. Wahl, Planning and Design of a Suburban Neotraditional Neighborhood, Transportation Research E-Circular, Urban Street Symposium Conference Proceedings, Dallas, Texas, June 1999.

Criticism of New Urbanism

According to Realtor.org, “not everyone is sold on transit-oriented development, however...for starters, they only work in metropolitan areas dense enough to have mass-transit systems that efficiently move people...if it takes as long to commute by bus as it does by car, most people will stick with the car.”⁴⁰

Some have argued that new urbanism will fail because homebuyers will continue to choose to live in conventional suburbs. Free market forced the current development patterns. On the other hand, Bernhardt argues, “new urbanism offers planners a chance to return to comprehensive town planning in its most meaningful sense: planning that is based on a fundamental understanding of the relationship between the region, neighborhood, and street.”⁴¹

Litman⁴² presents various criticisms of Smart Growth in “Evaluating Criticism of Smart Growth” but also provide additional information to counter those criticisms. Critics have argued that current trends of people buying homes in the suburbs will continue due to past trends and market forces. Litman counters, “trends and surveys also indicate that many people would like to live in more accessible communities with nearby services and more transportation options.”⁴³ Critics have also argued that Smart Growth will not be able to respond to the needs of the modern family dependent on the automobile. Litman argues, “many Smart Growth strategies provide time savings...Smart Growth increases accessibility so travel distance are shorter, improves travel options so parent spend less time driving, and improvise walking and cycling.”⁴⁴ Critics have also argued that Smart Growth reduced personal freedom due to excessive regulations. Litman asserts, “Smart Growth may increase restrictions on large-lot, urban fringe development but reduce restrictions on building type and land use mix...increases freedom by improving overall accessibility and affordability.”⁴⁵ Some have argued that Smart Growth is unfair to low income and minority groups because of higher home prices in traditional neighborhoods. Litman counters, “Smart Growth directly benefits lower income people with improved land use accessibility, improved walking conditions and improved travel alternatives.”⁴⁶ Some critics have said that Smart Growth increases traffic congestion and air pollution. Litman said, “Smart Growth includes a variety of strategies that reduce vehicle mileage and improve overall accessibility

⁴⁰ Transit-Oriented Development, <http://www.realtor.org/SG3.nsf/Pages/transitdev?OpenDocument>, accessed December 4, 2003

⁴¹ Bernhardt, R., Planning, Vol. 67, Issue 7, pg. 55, July 2001.

⁴² Litman, Todd, Evaluating Criticism of Smart Growth, Victoria Transport Policy Institute, 2003.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

that can offset traffic density impacts...programs might improve walkability and transit services...encouraging people to reduce peak-period motor vehicle trips.⁴⁷”

Case Studies

Portland, Oregon

The urban growth boundary in Oregon helped the revitalization of the central cities. In reference to Oregon’s urban growth boundary, Rusk states, “the urban growth boundary can take credit for herding people inward...community patrols can take credit for standing toe-to-toe with crime.⁴⁸” One of the goals of Oregon’s Statewide Land-Use Planning Act required that each “municipality establish an urban growth boundary in a perimeter around each urbanized areas with sufficient capacity within an urban growth boundary for twenty years of anticipated growth.”

Other municipalities could follow in Oregon’s example and expedite building permit process for private development inside the boundary; and reserve land for exclusive farm and forest industry use, or for parks and natural areas outside the boundary. According to Daniels⁴⁹, “an urban growth boundary can limit the extension of public services-especially growth-inducing sewer and water lines-and so discourage sprawl. Infrastructure planning by state and local governments coordinated with local zoning provides greater certainty for private developers about where development is desired and will be adequately serviced.”

Rusk⁵⁰ advocates a regional comprehensive plan, an urban growth boundary, adequate facilities requirements, and transportation planning for growth management. Because of Oregon’s success, an urban growth boundary seems to be feasible for many communities. Daniels states that the results of an urban growth boundary in Oregon have been fairly good because “more land has been zoned for industrial development, and the farm economy has continued to grow, thanks in part to extensive agricultural zoning.” Rusk⁵¹ asserts “controlling peripheral growth the urban growth boundary has turned market demand inward” (p.166). Portland’s urbanized population grew 14 percent while urbanized land grew only 11 percent during the first decade of the urban growth boundary’s inception⁵². Other results of Oregon’s urban growth boundary include: 1) multifamily housing construction increased to 54 percent during 1985-89, 2) lot sizes were lowered and prices on new single-family housing decreased, and 3) an economic resurgence in many of its “traditional” and older neighborhoods within the city of Portland.

⁴⁷ Litman, Todd, *Evaluating Criticism of Smart Growth*, Victoria Transport Policy Institute, 2003.

⁴⁸ Rusk, D., “Inside Game Outside Game,” p. 166, Brookings Institution Press, Washington, D.C. 1999.

⁴⁹ Daniels, T., “When City and Country Collide,” p. 178, Island Press, Washington, D.C. 1999.

⁵⁰ Rusk, D., “Inside Game Outside Game,” p. 161, Brookings Institution Press, Washington, D.C. 1999.

⁵¹ *Ibid*, p. 161.

⁵² *Ibid*.

The development of the Westside MAX light-rail stations in the Portland area has resulted in the building of about 7,000 dwelling units, and more than \$505 million has been invested in projects within walking distance.⁵³ The goal of the Westside MAX light rail was to “increase light-rail utilization capacity by creating magical, high-density, mixed-use pedestrian districts within walking distance of transit.” According to CNU⁵⁴, “in 1999, the year after Portland’s Westside light rail opened, the number of transit users in the corridor increased 137 percent, to 33,900 average daily trips, 12,000 new people were riding transit for the first time...as of 2001, the light rail system carries approximately 70,000 trips per day.”

In accord with the 2040 regional growth management plan adopted in 1996, “cities and counties implemented the state transportation planning rule (TPR).⁵⁵” As a result, the Westside light rail was built to service surrounding areas (Hillsboro and Portland) in September 1998. The Westside light rail is 18 miles long with 20 stations, nine park and ride lots, and three transit centers. The Westside light rail project was based on the Transit-Oriented Development (TOD) to “increase the density of people near transit, including residents, employees, visitors, and customers in a built environment that is pedestrian friendly and connected to transit.⁵⁶”

The Orenco Station in East Hillsboro, Oregon is now a transit-oriented development with residential and retail developments of 2000 housing units, retail, and office space.⁵⁷ This site was originally designated to be a commercial-industrial park until zoning was changed to residential. According to Broberg, “the Rose Garden, Paul Allens arena for the Portland Trailblazers, is located along the MAX track in the Lloyd District...without light rail the arena would have been built in the suburbs and would have needed more parking; 20 percent of fans arrive by rail.”⁵⁸

The success of Portland is due to having “safe and pleasant ways to walk or bike such as sidewalks, pedestrian crossing, bike lanes, and places to walk to...have a convenient bus system...under such circumstances, people anywhere will drive less.⁵⁹” According to

⁵³ Transit Oriented Development, Portland, Oregon, <http://www.metrokc.gov/kcdot/alts/tod/portland.htm>, accessed December 4, 2003.

⁵⁴ Fregonese, J., L. Peterson, and C. Nelson, Correcting the Record, Comparing development policy in Portland, Oregon and Atlanta, Georgia, Congress for the New Urbanism.

⁵⁵ TOD Case Study, Portland, Oregon, <http://www.todadvocate.com/pdxcasestudy.htm>, accessed December 4, 2003.

⁵⁶ Ibid.

⁵⁷ Broberg, B., A look at Portland’s experience with rail, real estate, Commercial Marketplace, <http://www.djc.com/special/comm99/10050100.htm?10050100>, accessed December 4, 2003.

⁵⁸ Ibid.

⁵⁹ Fregonese, J., L. Peterson, and C. Nelson, Correcting the Record, Comparing development policy in Portland, Oregon and Atlanta, Georgia, Congress for the New Urbanism.

the Sierra Club⁶⁰, Oregon's planning statutes allowed "Portland's population to grow by 50 percent since the 1970s while its land area increased by a mere 2 percent."



Source: Seattle Daily Journal of Commerce,
<http://www.djc.com/special/comm99/10050100.htm?10050100>



Source: <http://www.lcd.state.or.us/tgm/smart/orengo.htm>

⁶⁰ New Research on Population, Suburban Sprawl and Smart Growth, Sierra Club, <http://www.sierraclub.org/sprawl/whitepaper.asp>, accessed November 26, 2003.

Charlottesville, Virginia

The City of Charlottesville in Virginia has experienced an influx of new residents, contributing to the rapid growth in the city and surrounding five-county region. As a response to the growth, the Sustainability Council of the Thomas Jefferson District Planning Commission came up with the “Sustainability Accords and a New Vision of Sustainability” in 1998. One of the initiatives that the commission undertook in 2001 was the Jefferson Area Eastern Planning Initiative (EPI)⁶¹ that had two main objectives: develop a modeling tools to evaluate transportation and land use options and develop a 50-year transportation and land use vision for the five-county region surrounding Charlottesville.



East Market Street, Charlottesville: urban mixed-use area

Source: <http://www.fhwa.dot.gov/tcsp/cvadeflt.htm> (Courtesy of University of Virginia School of Architecture)

The Planning Commissions created a 35-member Advisory Committee of elected officials, business leaders, residents, community group leaders, and environmental representatives to help guide EPI. The committee met nine times and held four public workshops to gather information on how to improve livability, how to locate future developments, and transportation and land use goals for the region. The EPI study resulted in the following recommendations⁶²: “urban transportation network, a system of paths that connect designated development areas support a balance of transit, pedestrian, bicycling and auto travel within and among developed areas, with streets no more than four lanes wide and designated speeds of 35 mph or less, and priority transit, such as busways or light rail in which transit vehicles operate in their own right-of-way.” With regard to transit, EPI⁶³ gave the following insight: “study participants realized that fixed-guideway transit was not currently cost-effective for the region, yet they wanted to ensure that it remain a viable option in the future in case the region continued to experience rapid growth...participants agreed that creating transit-oriented development patterns and preserving rights-of-ways were fundamental strategies to ensure the feasibility of future transit systems.”

⁶¹ U.S. Department of Transportation, Federal Highway Administration, Case Studies, Charlottesville, Virginia: Jefferson Area Eastern Planning Initiative, <http://www.fhwa.dot.gov/tcsp/cvadeflt.htm>, accessed December 4, 2003.

⁶² Ibid.

⁶³ Ibid.

EPI identified key success factors in implementing the EPI recommendations: grow only in designated development areas (each locality will prepare a sub-area plan to become part of the local comprehensive plans), maintain small towns and villages, invest in supportive infrastructure, preserve rural areas, and regional equity to name a few. The EPI provides suggestions and recommendations for the municipalities to develop a transportation and land use vision for a region.

Other cities could follow Charlottesville footsteps in developing an initiative similar to EPI to help municipalities create more livable communities

Kentlands, Maryland

Kentlands is considered to be one of the most successful traditional neighborhoods in the nation. Located in the City of Gaithersburg, Maryland, Kentlands is a 352-acre neo-traditional development consisting of mixed-use of residential, office, civic, cultural, and retail.

Developer Joseph Alfandre, who had been developing in Gaithersburg, bought 352 acres of Kent Farm, now known as Kentlands in 1987. In 1988, Alfandre hired leading new urbanists, Andres Duany and Elizabeth Plater-Zybeck of Duany Plater-Zyberk & Company (DPZ) to create a master plan for the community. When development plans with shopping mall developer Mel Simon fell through and Alfandre was unable to make payments, Chevy Chase Bank took over the project in 1991. According to Miller⁶⁴, when demand for condominiums and single-family houses grew, development in Kentlands turned to building multi-family housing and eventually a shopping center.

Kentlands consists of six neighborhoods, a market square that serves as the town square with a movie theater, village shops, restaurants, hair salon, and a spa. In Kentlands, residents could walk to go to the movie theater, kids can get a job without needing a car, residents can run everyday errands via walking, and most of the establishments are within walking distance. Kentlands has the “greatest degree of mixed-use...grocery stores, movie theater, schools, churches, convenience and entertainment retail.⁶⁵” In fact, Kentlands’ mixed-use developments are the “town’s primary amenities.” For example, open spaces include parks, squares, and the plaza, civic building include an elementary school, commercial buildings have both residential and office units, and banks, grocery store, restaurants, and the eight-screen movie theater are all within walking distance. Miller asserts, “Life is lived well in Kentlands, which caters to a wide variety of people and family types by offering several housing choices...these include multi-family apartments and condos, apartments above garages, townhouses, and single-family houses.⁶⁶”

⁶⁴ Miller, J., “Walking in Kentlands,” Traditional Neighborhood Design, <http://www.tndhomes.com/tour03.html>, accessed December 4, 2003.

⁶⁵ Ibid.

⁶⁶ Miller, J., “Walking in Kentlands,” Traditional Neighborhood Design, <http://www.tndhomes.com/tour03.html>, accessed December 4, 2003.



Source: <http://www.tndhomes.com/tour03.html>

According to Kentlands' town architect, Michael D. Watkins, "all elements are planned around the distance the average person will walk before thinking about getting in the car."⁶⁷ This means retail, office, residential units are all located maximum of ¼ mile from the town center and people could reach their destinations in a matter of 5 minutes via walking. Residents praise Kentlands for its variety of offerings within walking distance and opportunities to meet more people while strolling around town. Kentlands currently has a population of 5,400 residents, 1,600 residential units, 600,000 sq. ft. of commercial, elementary school, church, clubhouse, conference and cultural centers, firehouse, restaurants, and a movie theater. As for the future, a 20-acre regional park is planned.

⁶⁷ "Lesson 6, Neo-Traditional Neighborhood Design," <http://safety.fhwa.dot.gov/pedbike/univcourse/swless06.htm>.



Movie Theater in Kentlands.

Source: <http://www.tndhomes.com/tour03.html>, Photo courtesy of [The Town Paper](#)



Mixed-use development.

Source: <http://www.tndhomes.com/tour03.html>, Photo courtesy of [The Town Paper](#)

Novi, Michigan

Wolshon and Wahl assert, “new urbanism promotes the revival of traditionally styled land-use developments in which people live, work, and shop all within a pedestrian-oriented community⁶⁸” and describe the City of Novi, Michigan, “as an effort to revive a traditionally styled community within suburbia.”

The City of Novi, Michigan is a suburban community with about 50,000 residents located 30 miles northwest of downtown Detroit. With rapid growth in the area and to address issues related to growth, the City’s Community Development Department initiated the Main Street concept in 1988 to address the city’s lack of meeting places for residents, workers, and visitors to the city. The City of Novi has become a self-sufficient community, which is one of the objectives of neo-traditional neighborhoods.⁶⁹

In attempts to create a downtown area, the City of Novi and a private real estate developer began construction of Main Street in 1995. Construction costs and financing requirements were roadblocks faced in Novi, but the potential for significant financial gain of Main Street overshadowed the impediments. In order to pursue a development of traditional neighborhood in Novi, planners had to rewrite existing zoning codes to allow mixed-use developments. Many zoning codes restrict dense mixed-use developments and Novi was one of the cities that had such a requirement. A new zoning ordinance, TC-1 was developed to allow construction of homes with a separation of 10 feet between buildings and densities of 9 units per acres in contrast to other residential zones in the city where single family homes are 1 to 2 dwelling units per one acre and typical spacing of 25 feet between buildings. Commercial building requirements were also modified to allow increased density. The new ordinance allowed a zero setback from the streets in contrast to 50-foot setback requirement. In addition, the use of traffic signs was minimized, and speed limit, stop, parking/no parking signs were used instead. In the Main Street area, travel lanes were limited to 13 feet wide, 8 feet parallel parking lanes, and pedestrian sidewalks were 12½ feet wide. With respect to traffic control, instead of installing traffic lights for more efficient traffic movements, the city installed all-way stop to reduce vehicular mobility and provide “full-time right-of-way to pedestrians.”

The following pictures are from Wolshon and Wahl’s paper, Planning and Design of a Suburban Neotraditional Neighborhood.

⁶⁸ Wolshon, B., and J. Wahl, Planning and Design of a Suburban Neotraditional Neighborhood, Transportation Research E-Circular, Urban Street Symposium Conference Proceedings, Dallas, Texas, June 1999.

⁶⁹ Ibid.



FIGURE 2 A residential street within Main Street Village.



FIGURE 3 Main Street Village residential area.

The development of Main Street in Novi enabled the city to host three Christmas Walks, City's annual 50s festivals, and is in the works to host future 4th of July celebrations, and Memorial Day parades. Wolshon and Wahl assert, "no one can accurately predict if the combination of the residential and commercial land uses in a suburban area will be a passing fad or a growing trend...Main Street represents a significant effort to improve the community of Novi, Michigan.

One of the foremost anticipated benefits for having traditionally styled land-use developments in Novi was a "decrease in traffic demand resulting from the pedestrian-oriented nature of the development."⁷⁰

Conclusion and Future Implications

Possible policy implications from the analysis concern speed limit, tax on gasoline, sprawl, highway construction, economic shifts from central city to suburban areas, and environmental impacts (pollution, emissions standards, SUV standards) to name a few. Because people are so dependent on automobiles, it will be difficult to ascertain their reception to possible changes in travel mode and behavior.

In addition to a comprehensive plan and an urban growth boundary, states could initiate higher taxes to buy open space following in New Jersey's example. "New Jersey voters approved higher taxes to provide almost \$1 billion over the next decade to preserve open space, farmland, and historic sites" (CRS Report for Congress, 2001). With taxes, states will need to bear in mind that there will always be opposition to higher taxes, no matter what the circumstances surrounding the issue. Sprawl is a problem with many dimensions, and hopefully, municipalities and communities can take one step at a time to create a more livable and aesthetically pleasing community.

Wisconsin's Main Street Program is one effort that could be combined with TODs to create more livable communities. Established in 1987 to encourage and support downtown revitalizations in Wisconsin, the Main Street Program⁷¹ is a "comprehensive revitalization program designed to promote the historic and economic redevelopment of traditional business districts in Wisconsin." The passage of the Wisconsin's Smart Growth legislation on October 27, 1999 requires municipalities to adopt a comprehensive plan to ensure consistency of land-use decisions. As part of the comprehensive plan, municipalities could consider the TODs in their transportation and land-use components to ensure more livable communities.

⁷⁰ Wolshon, B., and J. Wahl, Novi's Main Street: Neotraditional Neighborhood Planning and Design, *Journal of Urban Planning & Development*, Vol. 125, Issue 1, March 1999.

⁷¹ Bernstein, R.A., "A Guide to Smart Growth and Cultural Resource Planning, Wisconsin Historical Society.

According to TTI, “transit service, while the average speed may be slower, is operated according to a schedule” can be more reliable than battling the congested highways. Perhaps, transit-oriented developments could be the key to a better livable future.

Kloster et al.⁷² described six connectivity principles to guide future development of local street designs:

1. “anticipate opportunities to extend and connect local streets over time”
2. “allow local street systems to serve a mix of development types within a continuous street pattern”
3. “encourage pedestrian travel by ensuring shortest, most direct routes are provided to nearby existing or planned commercial services, schools, parks and other neighborhood destinations”
4. “ensure local residents have access to existing or planner commercial services”
5. “allow narrow street designs to conserve land, calm traffic or promote connectivity”
6. “limit closed street systems and cul-de-sac designs”

Vuchic⁷³ asserts, “the challenge of urban transportation, then, is to devise methods for implementing a transportation system that will reduce the present excessive dependence on the private car while providing more efficient transportation service that supports, rather than impedes, development of livable cities.” Because people have been so dependent on their automobile, the issue is whether the individual will change their travel behavior or be resistant to change

According to the U.S. Census Bureau, population is projected from 281 million in 2000 to 338 million in 2025 to 404 million in 2050. According to Journey to Work: 2000, out of 128,279,228 workers 16 years and older, 87.9% used a car, truck, or van as their means of transportation, 4.7% used public transportation, 0.4% used the bicycle, 2.9% walked, and 3.3% worked at home. With the population projected to increase and congestion definitely to worsen, the question is will walkable communities promote more walking and decrease driving. The only way to find out is for cities to look at new urbanism and develop more walkable communities. New urbanism or walkable communities is not for everyone, but it needs to be seriously considered a choice.

After all, “everything that happens to land use has transportation implications and every transportation action affects land use.”⁷⁴ Vuchic⁷⁵ best summarizes what is needed for livable cities, “careful planning, design, and operation of transportation systems and

⁷² Kloster, T., J. Daisa, and R. Ledbetter, Linking Land Use and Transportation Through Street Design, Transportation Research E-Circular, Urban Street Symposium Conference Proceedings, Dallas, Texas, June 1999.

⁷³ Vuchic, V.R., Transportation for Livable Cities, pg. 232, Center for Urban Policy Research, Rutgers University, New Brunswick, New Jersey, 1999.

⁷⁴ Beimborn, E., S. Vijayan, A. Horowitz, and M. Bordewin, Alternative State Approaches to Transportation/Land Use Interactions, Center for Urban Transportation Studies, University of Wisconsin-Milwaukee, May 1999.

⁷⁵ Vuchic, V.R., Transportation for Livable Cities, pg. 257, Center for Urban Policy Research, Rutgers University, New Brunswick, New Jersey, 1999.

facilities is needed to achieve efficient, livable cities and metropolitan areas in which transportation plays its important functional role without excessive negative impacts.”

New urbanism is not the only correct answer, but it is a viable option for cities and communities. With the current trends of increasing congestion, sprawl, and pollution, cities could use new urbanism principles as one option in developing their communities over the next 50 years. New urbanism is a choice, a promising choice in community development since it may cope with trends and issues better. Looking to 2050 new urbanism is a viable choice and direction. New urbanism needs to be explored as a direction in community development so that future generations could enjoy a better quality of life.

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