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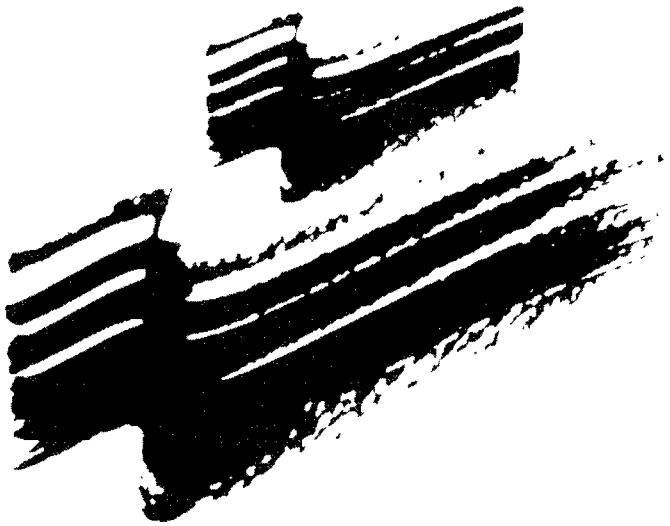
Edge City and ISTEA – Examining the Transportation Implications of Suburban Development Patterns



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Edge City and ISTEA – Examining the Transportation Implications of Suburban Development Patterns

Summary of Proceedings:
Seminar on Edge City and ISTEA – So What?

Sponsored by the Office of Policy Development
Federal Highway Administration

August 13, 1992
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The following is a list of other publications in the Federal Highway Administration's "Searching for Solutions: A Policy Discussion Series."

Number 1	March 1992	Exploring the Role of Pricing as a Congestion Management Tool
Number 2	June 1992	Exploring Key Issues in Public/Private Partnerships for Highway Development
Number 3	August 1992	Public and Private Sector Roles in Intelligent Vehicle-Highway Systems (IVHS) Deployment
Number 4	August 1992	Assessing the Relationship Between Transportation Infrastructure and Productivity
Number 5	August 1992	Transportation and Air Quality
Number 6	December 1992	Examining Congestion Pricing Implementation Issues

Foreword

This report summarizes a Federal Highway Administration (FHWA) seminar on the issues associated with the growth and development of "edge cities" — the major mixed-use activity centers in suburbs of many metropolitan areas. With nearly two-thirds of new jobs and housing going into suburban areas, edge city mobility may be the characteristic transportation problem of the future. The seminar focused specifically on the challenges posed by edge city development patterns, and the opportunities presented by the increased flexibility afforded by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) to meet those challenges.

The keynote speaker at the August 13, 1992 seminar was Joel Garreau, author of Edge City: Life on the New Frontier. In his book and in his keynote address, Garreau depicted the social and economic forces that have shaped recent urban development patterns. He looked especially at forces that have led to the concentration of commercial and office development outside of central cities. Mark Hughes of the John F. Kennedy School at Harvard University focused on the impact of metropolitan development patterns on the economic opportunities for the inner city poor and potential strategic solutions. Chris Leinberger of Robert Charles Lesser & Company described the varieties and evolution of edge cities and their economic consequences, as well as strategies to manage metropolitan growth. A series of panelists provided a range of alternative perspectives on these trends and their transportation implications.

For transportation policy, distinctions between urban and suburban areas are being clouded by the development of edge cities. In the 1980s, 19 of the 25 fastest growing "cities" in the United States were actually suburban. Some edge cities have more office space than all but the very largest downtowns. Indeed, metropolitan areas are increasingly "inside-out" — "suburban-focused," with urban and rural "fringes."

Edge city development places different demands on transportation systems than centripetal development. Trip origins and destinations are more dispersed, and the set of transportation alternatives to deal with highway congestion is currently limited. Edge city development has often been super-imposed on rural road systems, leading to massive congestion. At the same time, traditional transit services are less effective in the lower density context of edge cities, while ride-sharing, parking management, and other transportation demand management options are limited by labor force, household, and life style characteristics.

Traditional transportation system paradigms appear to have limited relevance in edge city contexts. Solutions in many areas may have to include retrofitting edge city land use to increase densities and improve mix while seeking innovative transportation demand management and IVHS strategies.

ISTEA gives State and local transportation agencies the flexibility and increased resources to develop improvements that promise to address current and future transportation needs in edge cities and other suburban areas. Through planning and management system requirements, ISTEA also places greater responsibility on local agencies to cooperate in the formulation of plans and programs to address areawide transportation issues. The new technology thrust of ISTEA may also play an important role in improving edge city service.

This report is the seventh issue of Searching for Solutions: A Policy Discussion Series. The series deals with key emerging transportation issues such as congestion pricing, privatization, transportation and air quality, as well as other relevant transportation policy topics. Issue papers will emanate from policy seminars sponsored by the FHWA and from FHWA policy research. We anticipate generating a wide-ranging dialogue on these and other important challenges facing transportation policy development.

Stephen C. Lockwood
Associate Administrator for Policy
Federal Highway Administration

Table of Contents

Executive Summary

Throughout history, development of cities has been based on the state-of-the-art transportation mode of the time. Before motorized modes existed, the dominant form of urban development centered around the agora, or marketplace. All the necessities of life for urban dwellers were found within a short walking distance from home.

The first stage of suburbanization in the United States began with the relocation of residential development outside the center city. As the population expanded, technology progressed, and motorized vehicles became common, the boundaries of most cities expanded accordingly. Radial transit lines allowed for city expansion in the early part of the century. Widespread availability of the automobile, development of the Interstate Highway System, Federal Housing Administration low interest home mortgage loans, economic prosperity, and population growth were strong incentives for suburban residential development after World War II. Persons could live in the suburbs and commute to their jobs in the city.

The second stage of suburbanization was the movement of retail businesses to the suburbs. Realizing that a large portion of their customers were no longer living the downtown areas, retailers moved their operations out to accommodate the growing number of people living outside of urban centers. Large regional malls grew in central locations to serve many communities while smaller strip malls provided the daily buying needs of suburban America.

The explosion of new office construction in suburban areas (it is estimated that 80 percent of new office space constructed since 1970 has been outside the central business district (CBD)) characterizes the third phase of suburbanization. Several factors influenced the move of many corporations out of the center city and into the suburbs. The changes from an industrial society to an information society lessened restrictions on where companies could locate. Manufacturing companies were usually tied to rail lines or water ports for easy access to the raw materials necessary for production. As the nation moved into the post-industrial era, location limitations were opened to more possibilities. As a result, according to Robert Cervero in his book Suburban Gridlock, the "white collarization" of business influenced growth and development of campus style office parks located near the labor force. Many companies realize that proximity to a vast pool of workers allows them to compete favorably for employees who live outside the central city.

Economics played a large part in business decisions to relocate. The high cost of land in the downtown areas has influenced many corporate decisions to relocate to the suburbs where real estate is less expensive and more abundant. Businesses that rely on computer functions such as car or hotel reservations, or telecommunications may split their back office or support operations to the less expensive suburban areas.

Suburbanization of jobs and residences has resulted in new cities, or edge cities, developing on the outskirts of old, traditional urban centers. Metropolitan regions have grown miles beyond their boundaries of twenty years ago. A new "metroplex" has been created with multiple high density activity centers surrounded by lower density residential.

While these new cities have reached and often surpassed the size of many of the traditional old downtowns, they have, in their growth, generated their own set of issues affecting transportation, governance, social impacts, and growth management.

Like it or not, edge cities establish the context for much of future transportation investment. It is estimated that the suburbs of the 60 largest metropolitan statistical areas (MSAs) now contain approximately 67 percent of the jobs in those areas, according to employment data collected for 1986.

With the recent passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) providing new planning requirements, new programs, and new flexibility in decision-making, it seems to be a propitious time to reconsider the importance of land use development and transportation in decision-making.

The Office of Policy Development of the Federal Highway Administration held a seminar entitled "Edge City and ISTEA—So What?" to look

at the transportation implications of this type of suburban development. More than 90 participants from the fields of transportation, land development, and social sciences were present. Mr. Joel Garreau, author of Edge City: Life on the New Frontier, was the guest speaker. He provided some valuable insight into the issues and how they relate to transportation policy.

Transportation

Historically, congestion has been primarily a peak period phenomenon affecting radial trips between the suburbs and the central city. With the development of edge cities, congestion occurs increasingly with suburb-to-suburb movements. New solutions are necessary to alleviate the primary concerns of travel delay and air quality, as well as the economic problems of congestion.

Road improvements, signal timing, carpool programs, and other transportation system management strategies have been used to accommodate some traffic generated by new development. Unfortunately, transit and ridesharing strategies are more difficult to implement in suburban areas because of dispersed origins and destinations, and also the growing phenomenon of linked work and non-work trips.

The widespread availability of free parking further encourages single-occupant auto trips. In edge cities, office parks are often surrounded with vast surface parking lots that are extremely inexpensive or free for employees to use. This feature encourages drive alone travel and contributes to the congestion problems on access routes to the office location as well as hindering internal circulation. Reducing the availability of free parking in commercial areas of edge cities in combination with other high occupancy vehicle incentives has been suggested.

Other factors influencing suburban traffic congestion include lifestyle changes, two-income families, and a host of non-work activities, each contributing to the number of automobiles on the road at any given time. It will take more than the traditional transportation solutions to deal with this. More innovative demand management strategies will likely be necessary to change the travel patterns of many people. This will be a difficult task due to the unwillingness or inability of individuals to abandon the single-occupant automobile and/or the time of travel.

Telecommunications developments offer the opportunity for major changes in transportation demand. Telecommuting, teleconferencing, and other innovations have implications not only for transportation demand, but they could have major urban development implications as "back office" functions move to increasingly dispersed locations.

ISTEA requires that the transportation planning process consider land use and transportation interaction. Alternate development and land use options will need to be considered. Although much of the urban development is already in place, issues such as retrofitting and in-filling of existing edge cities could encourage increased pedestrian and bicycle trips, and discourage auto dependency at the residential or work site.

Social Issues

Social impacts resulting from suburbanization include economic segregation and isolation of lower income households from outlying employment opportunities. Companies moving to suburban locations take jobs at all levels with them, leaving a labor force behind, many of whom do not have transportation available to make work trips to the suburbs. Alternative solutions such as reverse commute options should be considered to deal with this problem.

Environmental Implications

The sprawl aspect of edge cities can adversely affect the environment. Since lower densities are harder to serve with traditional transit and ridesharing options, single occupant automobile transportation is the dominant people mover to and around edge cities. Although the land use in edge cities allows for an abundance of green space, air quality in many of these large metropolitan areas often does not meet attainment standards set in the Clean Air Act Amendments of 1990.

Growth Management

In recent years, several statewide or metropolitan growth management regulations have been put into place. Metropolitan growth boundaries are intended to encourage in-fill growth to surround central city locations as opposed to leap-frogging to new outer rings of edge cities. The concept of the metropolitan growth boundary is not meant to act as a deterrent to growth or development, but as a way to channel

development. Setting geographic boundaries around an urban region are intended not only to guide development, but to create a framework for integrating transportation and land use policy considerations. It also addresses regional housing allocation including affordable housing issues. The effects of these relatively new initiatives are not yet clear.

Impacts of ISTEA

Multiple provisions of ISTEA offer opportunities to address issues of concern in edge cities. The metropolitan planning organizations (MPOs), in conjunction with the State are responsible for developing a long-range transportation plan and a transportation improvement program (TIP). Considerations such as land use, congestion management, intermodal connectivity, air quality, and methods for enhancing transit service will be included in the planning process.

The States will be responsible for developing statewide planning processes, and transportation plans and programs under the statewide planning provision of ISTEA. In addition, management systems for pavements, bridges, safety, congestion, and public and intermodal transportation facilities will be developed and implemented in cooperation with MPOs. Also, the States in cooperation with the MPOs must identify a National Highway System to serve interstate, interregional, and intraregional demands, and connect key intermodal generators.

The Surface Transportation Program (STP) offers considerable flexibility in financing new services or improvements for transportation systems. Eligibility is very flexible including highway or transit capital improvements, traffic management systems, ridesharing programs, and pedestrian and bicycle improvements and enhancements.

The Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides funding for transportation control measures in non-attainment areas to help them in meeting ambient air quality standards set forth in the Clean Air Act.

ISTEA provides flexibility to help solve transportation problems of edge cities. Each area must decide on a best set of transportation strategies to meet mobility and other goals given the metropolitan landscape that has been largely put in place.

Introduction

Decentralization of the nation's urban centers, promoted by the availability of motorized forms of transportation, has been going on since the late 19th Century. Electric streetcars, rail lines, and ultimately the automobile facilitated the movement of residential development, as well as business and industry, out of the central city into the lower density suburbs. Of course, there were many other social, demographic, and economic factors that contributed to the trend.

Growth and development concentrated in areas surrounding urban boundaries. These areas became major magnets for commercial and retail activities. Mr. Joel Garreau, writer for The Washington Post, coined the term "edge city" to describe these suburban cores, and authored a book, Edge City: Life on the New Frontier, which looks at the different issues affected by this type of development.

Although suburbanization is not a new phenomenon, large scale growth in terms of office park development in the suburbs is fairly new. Edge cities have only recently been thought of as cities. According to Joel Garreau, current forms of edge cities are meeting many of the needs of the traditional urban cores and have become true cities in their own right. He defines edge cities as those having:

- At least 5 million square feet of office space,
- At least 600,000 square feet of retail,
- A population that gets bigger rather than smaller on weekday mornings.

To create a better understanding of how this type of decentralization affects transportation policy, the Office of Policy Development of the Federal Highway Administration (FHWA) held a seminar entitled "Edge City and ISTEA — So What?" The seminar brought together approximately 90 experts in the field of transportation, land development, and regional sciences (See Appendix A). The featured morning speakers discussed urban development trends and their implications. Afternoon speakers then focused on transportation issues concerning edge cities. Discussants responded to each panel of speakers (See Appendix B).

Featured speakers were:

Mr. Joel Garreau, author of Edge City: Life on the New Frontier. He spent the past several years traveling around the country to examine the most relevant issues of edge cities. He was invited to give a general overview on edge cities.

Mr. Mark Hughes, geographer, regional scientist and research fellow at the JFK School at Harvard University. Currently, Mark Hughes is working as a consultant on urban poverty for the Ford Foundation. He spoke on the topic of regional economic and geographic forces that have influenced edge cities and some of the social impacts that have been created.

Mr. Christopher Leinberger, managing partner of Robert Charles Lesser and Company. He is a specialist in the field of metropolitan development trends, as well as strategic planning for the real estate community. His discussion was centered on the economic and market issues affecting edge cities.

The afternoon panel of speakers focused on specific topics primarily related to edge cities and transportation.

- Mr. Alan Pisarski and Mr. George Wickstrom, consultants, looked at the influence of edge cities on travel patterns.
- Mr. Michael Meyer, from the Georgia Institute of Technology, spoke on travel demand management (TDM) options for edge city transportation problems.
- Mr. Kevin Heanue, from FHWA, discussed the relevance of ISTEA to edge cities.
- Mr. Stephen Lockwood presented ideas for retrofitting edge cities.
- Mr. Henry Richmond, from 1000 Friends of Oregon, talked about growth management and transportation using the State of Oregon as an example.

- Mr. Thomas Horan, from George Mason University, spoke on the institutional and governance issues that influence edge cities.

The purpose of the seminar was to look primarily at transportation related issues surrounding the development of these suburban activity centers. Particular attention was paid to considering how provisions of ISTEA would allow State and local governments, as well as the private sector, the opportunity to meet some of the diverse transportation needs of edge cities.

Steve Lockwood began the seminar by welcoming the participants and thanking them for their interest. He mentioned that this seminar is part of a continuing series of policy sessions, and that the proceedings will be published as part of Searching for Solutions: A Policy Discussion Series.

Steve Lockwood pointed out that this seminar represents an interesting intersection between trying to understand the land use and transportation development present in edge cities and the relationship to policy and programmatic issues.

He cited statistics supporting the fact that the post-interstate era is clearly a suburban era. In 1960, the nation was one-third urban, one-third rural, and one-third suburban. Changes in the demographic distribution that have taken place in the past 30 years have resulted in approximately 45 percent of the population in the suburbs, 30 percent in the traditional urban centers, and 25 percent in rural areas. Two-thirds of the new jobs and housing are going to the suburban areas, and as a result this is where most of the new problems are occurring. This nation has become increasingly a suburban nation with urban and rural fringes. Unfortunately, transportation planning practices are still dominated by the traditional urban focus with little concern or emphasis on suburban edge cities.

Transportation planning concepts and tools, along with growth management concepts have not remained in line with the physical reality of urban geography. The planning models available tend to be out-dated and do not consider how technology and lifestyles have changed.

He postulated that planners have not been able to come up with viable concepts for the suburbs because planning is dominated by a kind of "urban nostalgia." There is no definition of what attractive suburban paradigms are, and there are no available sources to provide it. Improvements to traditional practices need to consider density, transportation, and environmental factors. New models that take into consideration the prominence of the suburbs are necessary to achieve solutions to the problem of edge cities. He then welcomed Mr. Thomas Larson, Federal Highway Administrator.

Tom Larson was delighted to see this topic being discussed. He believes it shows a new initiative in the way of thinking about transportation issues and their overall effect on land use and development. The ISTEA legislation did advance transportation into the post-interstate era, but there is much to be done. This seminar provides the opportunity to examine the flexibility ingrained in ISTEA and how it can and will affect edge city growth and development.

Seminar Presentations and Discussions

Edge Cities — Mr. Joel Garreau

Summary of Presentation

Mr. Joel Garreau's presentation focused on how edge cities have changed so much of our lives and how they will continue to do so. He looked at several issues of importance such as transportation accessibility, governmental control, environmental impacts and benefits, safety concerns, and ISTEA's potential impact on edge cities. A summary of his remarks follows.

Transportation Issues

He pointed out that with the steady decentralization of jobs and housing, it comes as no surprise that the private automobile reigns supreme as the preferred mode of passenger travel in the nation's most rapidly growing metropolitan areas, resulting in a whole new set of transportation related issues. Travel patterns have changed drastically over the past 20 years. Twenty-two million single occupant autos have been added to the system. Nineteen million drivers of those autos are new workers, while 3 million are past carpool or transit users. Trip lengths have grown, as have the average number of trips and vehicle miles traveled (VMT) per person.

In edge cities, transportation problems occur at two levels. First is external accessibility problems that occur as the employment levels increase, causing accessibility problems along the major routes into the edge cities. Internal problems are the second level. These problems occur when land use patterns do not allow for easy trip making within the edge city without the use of an auto. The additional trips have impacted traffic on local, State and Interstate roadways.

Accessibility, in the early stages of edge city growth, was good since initial development usually occurred at the intersection of major thoroughfares. Highways provided the essential access for travelers to get to their edge city destinations. As the employment centers have grown in edge cities, congestion has begun to take its toll on travel time and accessibility. Increases in commute time have naturally resulted from the increases in congestion.

Once a traveler gets to his/her edge city destination, there is the problem of internal circulation. The lack of transportation choices is apparent in most locations. Internal circulation in most edge cities is based on the single occupant automobile. Edge cities are forced to operate on the automobile scale due to the pattern of development — buildings surrounded by vast expanses of surface parking. This type of environment is extremely hostile to the pedestrian. Walking or taking any form of mass transit, if available, is difficult. The purely auto-scale is unfriendly and uninviting to a pedestrian, while the purely pedestrian-scale is extremely dense like Manhattan. Development that combines auto-scale and pedestrian-scale would discourage auto use for short trips such as lunch or errands, and would encourage pedestrian trips.

To develop the choices necessary for edge cities to operate on a combination of automotive and pedestrian scales, he believes retrofitting of these cities is required. A filling in process that develops interesting, walkable areas where a person can find a decent restaurant or deli for lunch and possibly the types of shops that people would run into during their lunch hour to purchase a card or small gift or even drop their dry cleaning off is necessary. If an easily walkable area is created, restaurants, bookstores and other trappings of civilization will soon follow.

One particular transportation choice mentioned was Taxi 2000. The concept of Taxi 2000 is to have a kind of "individual rapid transit" with stations in critical areas surrounded by a pedestrian-oriented area.

Garreau pointed out that part of the problem with the edge city transportation issue is the fragmentation of the planning process. Local governments (county, city, town, etc.) control the zoning and development, while transportation planning and development usually takes place at the State level. Many local governments are concerned with increasing their tax base and encourage

development without much thought to the impacts it will have on the current transportation infrastructure. Road improvements are often an afterthought or are given minimal consideration at the initial onset of building. In some areas, developers provide a legitimate traffic impact study that estimates the increase of traffic on each affected road at build-out. If the impacts are above the capacity of the available system, then the construction company should have to provide some sort of escrow account to provide for a portion of the transportation improvements that will be necessary at build-out.

Aside from the traditional approaches to alleviating traffic congestion, telecommuting is a viable option for congestion relief. Current state-of-the-art transportation devices are a combination of automobile, jet, and computer. Although it may be difficult to imagine the computer as a transportation device as well as a communication device, computers most definitely are used to transport information. The ability to "fax" something in a matter of seconds can close the mileage gap between companies and clients, or support staff and headquarters offices.

An example in the Washington area of opportunities afforded by telecommunications is the Marriott Corporation. Marriott's headquarters are located in Bethesda, Maryland, and their reservation staff work in Frederick, Maryland. Because of computers, the entire staff does not have to drive to the corporate headquarters. The reservation staff can live in the less expensive areas that are found farther out in the suburbs, easing congestion around the Washington metropolitan area.

Overall, he believes computers and telecommunications are helping to shape the future. Entire corporations no longer have to be concentrated in one area. The support staff can be located out in the fringes of the metropolitan area or work out of their homes or use nearby telecommuting centers.

Government Issues

Garreau's discussion turned to the governing factor of edge cities. He began by asking "Who controls edge cities?" The geographic location of most edge cities does not fall within the boundaries of an incorporated city. Many of these places have grown out of locations where cornfields or bedroom communities were predominant 30 years ago. They rarely have any traditional government, no mayor or city council, and no political boundaries. City and county governments are often not directly involved with the day-to-day running of the edge city because their concerns are more wide spread.

Edge cities are not anarchy, but are governed by "other means." Government or control of edge cities is usually by a group of stakeholders, often employers. Usually, those in control of the edge city have rallied around a particular cause that needs attention for the smooth functioning of the edge city. (Most often, it is transportation related.) Quite often, this form of government is relatively efficient, cheaper and faster at performing necessary governmental functions than traditional forms of government, and are usually supported by the private sector.

Americans are practical and will attempt to confront and deal with a problem if the government can not, or will not help in a timely manner. This type of action is occurring in edge cities where private enterprise is increasingly taking on the functions that used to belong to the government because they are not getting satisfaction or not getting it in a timely manner.

Environmental Issues

Garreau believes that edge cities are making positive contributions to the environment. He explains that what we are trying to do is take the functions of the city and the rest of our lives, bring them out to the edge of the urban area, and reintegrate them with nature. He stated that we have looked at what we built in what we used to think of as the suburbs, these green and leafy places, and we liked that. These are far and away the greenest and leafiest form of cities that have been built in 1,000 years.

He pointed out that the number one architectural motif for edge cities is the atrium. They are found in office buildings as well as shopping malls and are a characteristic part of most edge cities. He believes that people like the green, leafy places of the suburbs and now want to move the rest of their lives into some sort of balance with nature.

With the type of growth common to edge city development concentrated in the suburban areas, congestion, growth management, and air quality issues take on a special complexion. Transportation planners are not sure how to plan for a place with this relatively low density, and are being forced to

rethink the traditional planning process. Creative new ways of dealing with transportation in particular, in edge cities, are necessary. Possible non-traditional solutions should be considered to alleviate some of the problems affecting edge cities.

Growth and Expansion

The growth and development of edge cities has been the biggest revolution in city growth in the past 100 years. Every growing urban area is growing in the same fashion as Los Angeles, with multiple urban cores.

The Phoenix metropolitan area was one of the first places to understand that for planning purposes, it is a constellation of edge cities. The downtown is only one of many clusters, and in fact, is smaller than the uptown central area edge city. By understanding these circumstances, they are better able to plan placement of schools, fire stations, hospitals and the like.

The size of the metropolitan areas must be taken into consideration for planning purposes. Edge cities are not "out there" in the suburbs any more. Their growth and development has overtaken the suburbs and changed the old downtown into simply another activity center, though an important one.

Garreau asked the question, how much growth can rationally be expected in some edge cities? During the 80s, a massive building boom took place. However, with the over-abundance of office space, and with the new, more stringent lending regulations, that boom has come to an end. The most likely scenario for edge city growth will be aimed at the retrofitting and filling in aspect of current edge cities.

Some development choices have been made by the market. Growth is not expected to be as fast as in the past 20 years. Some areas have 20 percent office vacancy rates and because of these high rates, edge cities are already competitive with each other both within their urban areas and between metropolitan areas.

This growth and development in the edge cities is not meant to imply that the traditional CBDs are going to die. CBDs are doing fairly well. They had their best decade of this century during the 80s. They have been reviving (in absolute terms).

He suggested that some edge cities are beginning to differentiate. In the Houston metropolitan area, the Texas Medical Center/Rice University area has started to take on the feel of a university town. Art, music, and bookstores have become a part of that urban core. The Galleria suburban center is known for having the best restaurants in the metropolitan area, while west of Houston lies the Energy Corridor where many energy companies have located.

Retail remains in important activity in many edge cities. The telltale sign for King of Prussia, a part of the Philadelphia metropolitan region, is "Mall Next 6 Exits."

Many edge cities sprang up in areas that previously had been virtually undeveloped like Tysons Corner, Virginia. Others were built around pre-existing settlements such a Buckhead, Georgia and Bethesda/Chevy Chase, Maryland, in the metropolitan Washington area.

Joel Garreau questioned planners in Atlanta as to why edge cities in their metropolitan area developed as they did. Their response was that the mindset of planning has always focused on the traditional urban domain as the center of civilization. The belief of the planning field has always been that the downtown is the only kind of city there was and that to take away from these downtowns was to attack civilization. Edge cities are not thought of as being particularly interesting. However, they are now the centers of our civilization. They are the sum total of millions of value decisions and, in fact, are serving all the urban functions of downtowns.

ISTEA and Edge City

Garreau has several ideas as to how ISTEA (or the Edge City Retrofit Act of 1991 as he calls it) can help to solve some of the problems of edge cities. He stated that ISTEA is a large pot of money that is devoted to transportation choices, and choices are what cities have always been about. ISTEA can help to retrofit new choices into edge cities allowing them to develop into adult cities complete with personality and soul. Edge cities are now only in the first stage of the evolution. As they mature, more choices will be built in to the edge cities, hopefully so they can operate at the auto and person scales without being dominated by either.

The question is how are we going to allow this maturing of the edge cities to take place. Several questions have to be considered.

- How far out should the infrastructure go?
- Should roads be built endlessly; moved farther out?
- Should there be more beltways?
- Or, should more transportation choices be added to existing edge cities and if so, how can it be done?

Backloading or retrofitting these edge cities to create civilization is going to be important and the land use and transportation patterns that are chosen are going to have a big impact on this. He stated that the competition between edge cities in the future is going to be about the issues such as civilization, soul, identity, community, the very things that we know and treasure and love about the old cities, and the things we know are absent from the new ones.

ISTEA can provide the nourishment necessary to take these infant edge cities and give them the opportunity to develop and grow into adults with personality and character. We have never seen an adult edge city and what we are trying to do with ISTEA is to develop a place that encourages fitting edge cities with all the comforts of home.

ISTEA is not just about roads, or tax bases, or jobs although they play a part. ISTEA and transportation decisions related to it can help to create the civilized place that is a healthy combination of auto and human scale. It can also further encourage environmental awareness by stressing pedestrian access to different areas.

To summarize his presentation, edge cities are the new standard. They have been meeting the same functions that traditional cities have for 8,000 years, but at a different scale. Their development has not occurred in a rational, sequential fashion but often in chaotic, messy way. Growth of edge cities is evolutionary and does not fit in any neat or predictable pattern. Edge cities are still in their infancy and may remain there until we can figure out how to get good at this type of development. ISTEA may be extremely influential in the retrofitting of choices into edge cities.

Edge cities are about Americans trying to reintegrate their lives for the first time in 150 years. Edge cities have replaced suburbia. Suburbia was created as a place apart to separate the women and children from the evils of the city. Now, edge cities are an attempt to bring all aspects of life back together. We are trying to build a place where we can work and live and play and socialize and pray and die, a place we can show off and a place for the current and next generations to call home.

Discussion

After Garreau's presentation, time was allowed for several questions. The first question was from Andy Lemer of the Building Research Board. He asked how edge cities were going to work in the future without some form of traditional government? How will they provide services?

Garreau's answer was, "simple, government by other means." He explained that very often there is a collection of stakeholders that usually have a financial interest (because of their real estate holdings) in the edge city. They tend to organize around whatever the largest problem is. It is doubtful that they will ever metamorphose into conventional government.

Another governing option is public/private partnerships which are relatively efficient, cheaper and faster, but which are not democratic. They represent pragmatic Americans trying to provide services any way they can. If it works out that the private model is more functional, that will be the direction edge city governing will head.

Question two was asked by Mr. Bruce Douglas of Parsons, Brinckerhoff, Quade and Douglas, Inc. concerning public spaces in edge cities. He stated that one of the problems of edge cities is that the "public spaces" tend to be privately operated and consequently are not truly public spaces. What about these "public spaces?"

Garreau's answer to this is that edge cities are relentlessly the product of the middle and upper class. For a city to be successful, people, particularly women, have to feel completely safe surrounded by thousands of people. People tend to feel safe in edge cities because the public spaces have been privatized which limits behavior. Most people do not feel safe sharing space with homeless or vagrant individuals, but do feel safe knowing this sort of behavior is not allowed. He held up the shopping mall as an example of a space in which people feel safe.

The third question was from Mr. Ben Chinitz of Harvard University. He wanted to know how much of suburbia is contained in edge cities?

Garreau admitted there is a problem quantifying this. Most edge cities are not incorporated and rarely have political boundaries which makes it hard to collect data. Commercial real estate agents are the people with the computers and models available. He emphasized when comparing data, there is a need to remain consistent with the criteria being evaluated. It is necessary to apply the same standards to the edge cities as to the center cities. He also noted that edge cities are not measured in units of distance, but in units of time. These are time sensitive cities. Ten minutes away could equal ten miles. If time units are the chosen units of measure, then edge cities are more dense.

Regional Economics and Edge Cities — Mr. Mark Hughes

Summary of Presentation

Mr. Mark Hughes, a geographer and regional scientist at the John F. Kennedy School at Harvard next discussed regional economic and geographic forces that have shaped edge cities and the implications of edge cities for the urban poor.

Mark Hughes began by noting that the value decisions that played a decisive role in edge city settlement patterns were partly a result of the effects of the poor who, by their behavior, are often considered threatening. Central city locations that house urban poor are often characterized by the typical signs of blight including decaying, abandoned buildings, graffiti, and destitute individuals "hanging-out" on the street. These signs affect the security factor of individuals in nearby neighborhoods or even driving through the area. Most people do not feel comfortable in or near these types of conditions.

Conversely, the new settlement patterns also have an effect on the poor, increasing their plight and poverty. As more and more companies move out of the central city, the opportunity for the urban poor to find work becomes increasingly more difficult. Circumstances are less favorable for the urban poor to find employment within a practical travel distance.

Mark Hughes drew upon his recent work experience as a consultant on urban poverty to the Ford Foundation to guide his presentation. It centered around the concept of transportation policy, particularly reverse commute options, as part of the solution to poverty in the inner cities.

In the past 20 years, the majority of the population growth has taken place in the suburbs. In 1990, over half the population lives in 39 metropolitan areas containing over 1 million residents. The suburban population in these areas increased 55 percent from 1970 to 1990, while the traditional, central city population increased only 2 percent.

Suburbanization of housing and more recently employment has adversely impacted inner city poor. Employment in the suburbs in the 60 largest metropolitan areas between the years of 1976 and 1986 went from 16 million jobs to 24 million jobs. Two-thirds of the jobs are now outside central areas. Edge cities are where the new jobs are being created.

All types of jobs are moving to the suburbs. The new suburban office buildings may be the most visible, but manufacturing jobs are also moving to the suburbs.

One reason that the urban poor have difficulty finding work is that opportunities are no longer around the corner. In fact, they are occurring at greater and greater distances from the central cities.

Mark Hughes noted that there are three strategic approaches to inner city poverty problems:

1) Development approaches which try to recentralize opportunity towards the residences of the poor. The leading instrument of that strategy is the enterprise zone.

2) Dispersal strategies which seek to decentralize the residences of the poor from the central city toward edge cities and suburban employment opportunities.

3) Mobility strategy which seeks to improve transportation linkages between suburban employment opportunities and central city concentrations of unemployed or underemployed persons.

Individually, each option has its own inherent weaknesses. A key point to consider with the development approach option is the risk factor. The concept of an enterprise zone is valid, however, the risk of locating a business in an inner city neighborhood is often great. Success rates of businesses located in these areas are usually inferior. Crime rates are high. Insurance companies are often unwilling to cover inner city businesses without charging extraordinary premiums. Several strong forces work against this option.

Dispersal strategies are about up-rooting and moving entire families to new locations closer to jobs. There are several problems with this option. First, dispersal may just pick up the problem of one location and replace it in another area. The NIMBY (not in my back yard) attitude of suburban dwellers often does not allow this to happen. Second, the people living in the particular central city neighborhoods may not want to leave them. Very often, there is a sense of community associated with living in a neighborhood, even the most depressed one. The Department of Housing and Urban Development discovered this when they were involved with the Urban Renewal projects in the 60s.

This leaves the transportation-based third strategy as the most viable alternative. Settlement systems, such as edge cities, predicated on automobile-based mobility, creates a regressive schedule for transportation costs. Mobility by other modes has declined in the recent past and the relative costs of public transportation have increased. In many cases, there is little or no public transportation serving suburban employment centers. For the past 25 to 30 years, transportation policy has not dealt in a sufficient and sustained way with the regressive schedule of transportation costs. Reverse commuting alternatives are possible solutions to dealing with these costs and are a possible way to overcome the transportation shortfalls of the urban to suburban commute patterns.

Several reverse commute demonstration projects have been sponsored by the Federal Transit Administration (FTA) with some success. To ensure success, employers at suburban employment centers need to become involved possibly by helping provide transportation from inner city locations to their employment parks.

Discussion

Mr. Ed Risse from Synergy Planning, Inc. pointed out that concentrations of poor are often spread over a relative large geographic area which means dispersed origins and destinations causing problems with the suggested transportation solution of reverse commuting.

Mark Hughes agreed, however, he stated that there is still a large concentration of poor that is centralized that would benefit from any reverse commute program.

Mr. Tony Hiss of the New Yorker Magazine asked Mark Hughes what sort of policy recommendations could he suggest?

First, Mark Hughes stated, "we need to modify the ways in which we train people, and the organizational incentives by which we deliver job training services to these disadvantaged populations. In a spatial context, that means stop training people just for the opportunities that are present in the downtown or neighborhood labor markets. Look at the training opportunities for a much broader labor market. Start thinking beyond the limits of the neighborhood or the downtown labor market. Train for regional employment opportunities."

"Second, we need to change to organizational incentives of the people who are delivering employment search services. Once again, we need to think regionally."

"Third, we need to restructure transportation systems, both in terms of routes, schedules, and perhaps fares to better support this regressive set of transportation costs among the low income worker. Some very innovative small scale experiments and demonstrations are being done by FTA. To get these workers out to the suburban job site, employers are agreeing to contribute to some of the cost of the new service."

Economic and Market Issues — Mr. Christopher Leinberger

Summary of Presentation

Mr. Christopher Leinberger, a managing partner and co-owner of Robert Charles Lesser and Company, spoke next. He is a specialist in the field of metropolitan development trends, as well as strategic planning for the real estate community. He is also the managing partner and co-owner of the Metropolitan Futures Group which is a policy oriented entity. He was invited to discuss economic and market issues affecting edge cities.

Leinberger stated that his company works on approximately 50 to 75 development projects per year involving edge cities, and most are concerned with trying to retrofit existing edge cities or development of new ones in many of the metropolitan areas in the country.

He made several points necessary to the understanding of edge city development and growth.

- First, in the private real estate development community, a critical thought is that parking drives building development. Parking requirements for different land uses can greatly reduce the overall building area, limiting the size of the structure.

- Second is a natural corollary to the first. Transportation drives metropolitan development.

- Third is the point that over the last 20 years, 80 to 100 percent of all new jobs in all the metropolitan areas have migrated to either upper middle income, white housing areas, for primarily high end office jobs, or to middle income, white housing areas for the more light industrial and back office jobs.

He explained that there are three types of jobs in our metropolitan areas: local serving jobs, export serving jobs, and regional serving jobs. The export (meaning export outside the metro area) serving jobs are the most important category in any metro area. These are the jobs that create all the wealth, all the growth, all the new cash that comes into the area and that define the character of the metropolitan area. The export jobs are responsible for creating the regional serving jobs like lawyers, banks, real estate developers which are then responsible for creating the local serving jobs — teachers, fire fighters, clerks, etc.

The importance of export jobs to the metropolitan area is that for each export job created, several other regional and local jobs are created. This is known as the multiplier effect.

All edge cities are not the same. Leinberger and his colleagues have come to the conclusion that there are four and possibly five generations of edge cities. The first generation is downtown, and its character is primarily urban. While old downtowns are losing market share of jobs and will continue to lose market share through the 90s, there is increased vitality in the downtowns. Places like Boston and Baltimore have revived their downtowns and are now well-known tourist attractions.

The second generation of edge cities such as Towson, outside of Baltimore and White Plains, outside of New York City, emerged in the 60s and took off in the 70s. Since that time, many have died. These were the first alternatives to downtowns, and of those remaining, the 90s will show them declining in market share.

The third generation edge cities such as Tysons' Corner, Virginia, are the office driven urban cores located in the white, upper-middle class areas. Most of the growth in the cores slowed in the late 80s. Some were actually losing relative market share in their metropolitan area and are expected to lose market share throughout the 90s. This generation is expected to increase their densities and become more urban in nature. Higher density residential units, although not high-rises, are being built in these cores.

Fourth generation cores, those created in the 80s, may quite possibly get the lion's share of the job growth in the 90s. For example, J.C. Penney Company moved out of New York to a temporary location in a third generation core until their expansive fourth generation core facilities are complete. Quite possibly there will be fifth generation cores as far out as Leesburg in Loudon County, Virginia, for example.

Why do companies move to edge cities? Key motivators for companies to move out of the

traditional downtown include economic, political, and social issues. Real estate is less expensive in the suburbs and there is a vast labor market available in nearby neighborhoods.

The consequences of businesses moving to edge cities will cause further decline in the tax base of central cities, and will diminish employment opportunities for the inner city poor. If 80 to 100 percent of the new jobs go to the fourth generation cores as is possible, the commute distance becomes another barrier to employment opportunities for the inner city minority population. This will continue to exacerbate the downward spiral that many of our central cities are in fact dealing with right now in relation to higher social costs, higher crime rates, and lower tax base. Other consequences of movement out to subsequent generations of urban cores as mentioned in prior presentations is increased traffic congestion.

ISTEA can be a very important Federal initiative regarding cities, and could greatly influence national urban policy. ISTEA could be used to accommodate suburban growth in the metropolitan areas, and also to focus development on the existing urban cores.

Suggestions on how to refocus on the metropolitan area as a whole include:

1) Consider Metropolitan Growth Boundaries – Encourage growth to rotate around the center city, like a clock instead of allowing the present elongated growth such as to the north of Atlanta or the east of Phoenix.

2) Designate Boundaries Around Edge Cities – This is a critical issue for transportation planning. Density within the boundaries of edge cities needs to be increased. Various neighborhood and community groups in edge cities need proof that they are not going to be negatively impacted by office development near residential areas. Community groups need to provide input and voice their concerns when dealing with the land use issues in edge cities.

3) Focus on Transit – Two transit related issues include getting to work, and once at work, circulating within the edge city. Focus needs to be on transportation systems within the edge cities, preferably having parking on the periphery and some sort of internal circulation system.

4) Modify Parking and Parking Requirements – The amount of urban space devoted to moving and parking a car is 100 times greater than the amount of urban space necessary to move a person on foot. Conversion of large surface lots to parking garages or underground parking would free up space for in-fill development and pedestrian friendly amenities. Leinberger believes that will help create the missing soul of edge cities.

5) Downtown Holding Actions – Reinvigorating commuter rail into the downtown will help to slow the eroding market share of employment the downtowns have experienced over the last thirty years.

   Business improvement districts encourage this type of rejuvenation. A good example is in midtown New York where the Grand Central Partnership raised $100 million to clean up the area, to deal with the homeless issues, and to improve the safety.

   Oriole Park at Camden Yards in Baltimore is a great example of how to take a regional service use and place it in the middle of downtown. Eighty percent of the parking requirements are accommodated by existing office tower parking. It is within walking distance to most of the attractions of the Inner Harbor in Baltimore. (The ball club had a 300 percent increase in attendance in its first year open.)

6) Officially Recognize Our Metropolitan Areas as the Fundamental Economic Unit in the Entire Country – Metropolitan areas are the fundamental economic building block. The collection of edge cities and traditional central city form a system, or network in this metropolitan economic unit.

   Urban cores each play a unique role in the metropolitan area which is not to say there is not some overlap, and that there isn't some competition. Generally speaking, there is more teamwork than competition within the metropolitan area.

Chris Leinberger's discussion ended the morning session of the seminar. After the lunch break, the afternoon session began with the scheduled discussants Mr. James Hughes, Mr. Richard Tustian and Mr. Robert Dunphy.

Mr. James Hughes – Discussant

Mr. James Hughes, Professor of Urban Planning and Policy Development at Rutgers University, is currently serving as director of the Rutgers Regional Report. James Hughes was asked to comment on the seminar up to this point. He began by reinforcing some of the preceding comments and analyses by providing some statistics from the New York metropolitan region which includes the tri-state region with Manhattan as its center and 30 other counties in Connecticut, New York and New Jersey.

During the 1980s, Manhattan added 54 million square feet of office space. The suburban ring, which is made up of many edge cities, added 173 million square feet (equal to the entire Chicago metropolitan office market). In sum, the surrounding edge cities captured two-thirds of the office growth in the region. Overall, Manhattan still accounted for 56 percent of all the office space in the region, but it is far diminished from what it was 10 years previously. In 1980, it had fully 85 percent.

A second measure of edge city development in the New York metropolitan area is retailing. The suburban ring now has 48 fully enclosed regional malls, encompassing 49 million square feet of retail space.

The future economic infrastructure of the region has been set in place. In 5 years time, a 15 year supply of space was built nationally, resulting in edge cities being over-built, over-leveraged and under-leased. It will take the rest of this decade to absorb the excess office space, so it will certainly slow any edge city expansion during the 90s.

Other factors that have changed the development game include the 1986 Federal Tax Act and the savings and loan crisis. Conservative lending reigns supreme. It is now increasingly difficult to borrow money, so the great decade of increased debt is over. Commercial office construction will be minimal, if any occurs at all.

Reinforcing the idea that there will be little or no growth is white collar restructuring, according to James Hughes. A number of corporations are following a strategy of downsizing as a way of responding to the economic situation of the nation. The intersection of development overhang and white collar restructuring virtually insures that the 1990s are going to be far different than the 80s in most edge cities.

Another influence on the growth of edge cities is the baby boom. Family raising shelter is in demand, and the demand profile is leaning toward slightly lower density neighborhoods. Baby boomers were born in suburbia, reared in suburbia, educated in suburbia, live and shop in suburbia, and really want to work in suburbia.

He summarized his points by noting that with the 21st Century economic infrastructure already in place, a great window of opportunity is available for infrastructure and transportation catch-up. Thickening up, filling out, and rounding off is going to define the bulk of the edge city development during the 90s given the lending posture and all the strictures today. Proven market locations are going to have the edge.

Mr. Richard Tustian – Discussant

The second discussant was Mr. Richard Tustian who was the Planning Director for Montgomery County, Maryland and was substantially responsible for developing and managing the growth management system for which the county is well known. He is a Senior Fellow at the Lincoln Institute of Land Policy involved with educational and research activities.

He pointed out that we, as a society, are much more concerned with function than with form, with process than with product, implying economics takes dominance over art. Sprawl is the natural spatial consequence of the diffusionary economic tendencies inherent in the building and development world. The current pattern of edge city growth is simply the playing out of economics with very few limits put on it, and with virtually no central planning.

If the goal is to retrofit edge cities into something more livable, two actions will be necessary. First, a complementary mix of new land uses must be channeled to existing edge cities, which means that land use at regional scale must be managed to prevent sprawl. However, land use control is fragmented among small suburban jurisdictions, and often is dominated by the development community. Without some sort of suburban planning regulation to limit this movement, market forces will continue to push sprawl outward. Hence, successful edge city retrofit will depend on the ability to achieve metropolitan coordination in transportation and land use planning.

Second, edge cities must be made pedestrian and transit friendly. Both the buildings owned by private interests and the spaces in between them must be designed to facilitate pedestrian amenity and transit functionality. It is unlikely that such parcel scale coordination in building and street design can be accomplished without some governmental regulation of an architectural nature.

Whether such macro-scale and micro-scale land use planning will be supported politically will depend on how much concern is given to tomorrow's looming problems of pollution and congestion. Planning for edge cities should be devoted to anticipating and developing responses to aspects of these problems that have not yet presented themselves, particularly concerning contingencies such as the future oil supply.

Dick Tustian had two thoughts on how to begin working out some of the transportation-related problems of edge cities.

- First, America must essentially learn from the past and reestablish a hub and spoke pattern. With edge cities as the nuclei of the hubs, it will be necessary to create a network of spokes and trails to link them.

- Second, lead with the infrastructure, which means that ISTEA is the single, most important option available for doing something about the larger problem. In the next decade, transportation investment will be the dominant pattern shaping investment. Transportation planning will have to become more diverse by expanding its horizons beyond what has been the traditional role of road building and get into the land use, economic, and the social issues involved with development.

Dick Tustian had three suggestions for DOT and FHWA.

1) Determine the time horizons ISTEA should address. Long term, at least three decades, will allow the country to get past the current economic problems and into the next century.

2) Determine the proper mix of rail and rubber tire strategy for the spokes in the hub and spoke pattern.

3) Shift management methods for the transportation planners from engineering emphasis to emphasis on defining the problem before creating solutions.

Dick Tustian reiterated the thought that in the 90s, developers will build little, and that the transportation sector will be responsible for building for the future.

Mr. Robert Dunphy – Discussant

Mr. Robert Dunphy was the third discussant. He is the Director of Transportation Research at the Urban Land Institute (ULI) where he is responsible for a wide range of research in transportation and land use. He has authored and co-authored numerous publications for ULI.

Bob Dunphy began by stating that the edge city type of development is not new. Decentralization has been going on since the 19th Century. However, as a result of the current trend in decentralization, cities and counties have been forced into rethinking the way they do business. Governments are having to change zoning ordinances and comprehensive plans to accommodate higher densities and mixed uses with more pedestrian oriented commercial areas.

He presented some statistics that need to be considered as decisions about transportation policy are being generated. The National Association of Homebuilders conducts a survey which includes a raft of questions about the importance of housing in relation to wants and desires of home buyers.

One part of the survey deals with proximity to work. The response ranked proximity to work fourth in terms of what people say is important to them in the home they buy. (The kind of features that they see as important are price, affordability, type of neighborhood, etc.) The average commute time was 26 minutes, but many were willing to add 10 minutes to their ride for the right house.

How important is commuting to the choice of job? A recent Gallup survey indicated the job characteristics that are important to people. Proximity to home ranked number 12. This opens the door for further sprawl and decentralization if no controls are present.

In Portland, planners have encouraged a higher share of multi-family housing, which gives them greater density as well as more affordability. What they are finding is sort of controlled sprawl within the urban growth boundary. It is not the kind of higher density in-fill development expected.

One of the major problems of these areas is that parking is not a community concern. It is developed on an individual project basis. Creation of a parking authority would provide and control parking in the edge city or metropolitan area. Montgomery County, Maryland has a parking authority which maintains and operates the garages for the multiple CBDs in the county. This concept recognizes the importance of parking in shaping an integrated business district, rather than perpetuating isolated, stand alone building and allows the public voice to be heard in the process of project planning.

Dunphy had two closing notes.

1) Keep the people close. There is no easy solution to this, but it must be done. It is clear, however, that once the people move out to the next tier, travel demand grows geometrically.

2) Take the "free" out of freeway. Toll roads and congestion pricing options may become real considerations in some areas. Limiting access to freeways is already apparent in some location.

Discussion

After the discussants completed their observations, the floor was opened to audience participation.

Mr. Carlton Robinson began by raising a valid concern about congestion pricing. If job accessibility is a real concern, then the social impacts of congestion pricing, particularly pricing that is established to be punitive, need to be considered. Congestion pricing is not meant to increase supply, but to decrease demand. It may have some very big social impacts and be counterproductive to the job accessibility concern.

Mr. Frank Francois from the American Association of State Highway and Transportation Officials (AASHTO) had several comments about the issues raised. He began with the concept of governance of edge cities. Basically they are run by associations, or business people and underlying that is the concept that they are making money. He asked the question "what happens when they stop making money?" Everyone walks away and government picks up the tab. This is going to be true with open space areas, atriums, and all other privately operated public areas just as it was with public transportation.

He further commented that there are other reasons for development to have occurred in this fashion. Cities and counties are often concerned with trying to improve their tax base resulting in competition not only between metropolitan areas, but also within them. Atlanta's metropolitan area elongated growth patterns exhibit just how this competition can affect development patterns.

He questioned tying social issues to transportation. Should housing or anti-poverty policy issues be tied to transportation? If these issues are to be addressed, mechanisms for dealing with them will have to be found. Most likely, it will become the responsibility of the State and local governments. Underlying that are the voters attitudes, a key issue no one has mentioned.

Money is the ultimate issue. Where will funding for the infrastructure that is necessary to support the systems come from? Does transportation guide development or does development guide transportation? The overall implication is that ISTEA will be a panacea for all these problems. The possibilities are numerous, but where each of these issues will fit into the provisions of ISTEA have not been fully explored as of yet.

Joel Garreau emphasized the point that trying to figure out how edge cities are to be governed is a central one. Conventional government is facing competition. Many edge cities are incorporating, not politically, but as a business with good effects and bad. One effect to think about is how these corporations will come together with government and planners to coordinate the activities of edge cities. The internal competition within their regions and between regions should provide a powerful economic incentive for the stakeholder which should give cause for them to invent a means of cooperation. If these corporations have a cheaper and faster means of building the infrastructure than can be provided by conventional government and planners, then this is the way to go.

Steve Lockwood felt that most of the early discussion seemed to have focused on the problems and how to deal with them. He sensed a bias that it

is still an undesirable situation and it ought to stop here. Are these edge city development trends so structured that this kind of dispersion is going to continue? Is there any mileage in trying to make that happen in a more efficient way? Nobody suggested that it was a good thing to do, or that is should be anybody's policy.

Alan Pisarski stated there will not be much growth in the future, and the notion of guiding or deflecting growth in certain paths requires a lot of growth to deflect. It is not very clear that restructuring the land use distribution is necessary at this point.

After the comments, the afternoon speakers began their presentation. The first speakers were Alan Pisarski and George Wickstrom who were to discuss the influences of edge cities on travel patterns.

Panel — Implications of Edge Cities for Transportation

Influence of Edge Cities on Travel Patterns – Mr. Alan Pisarski and Mr. George Wickstrom

Mr. Alan Pisarski, a private consultant, has been an active participant in most of the major national transportation policy documents developed in the last 20 years. Mr. George Wickstrom, also a consultant, was the Manager of Technical Services at Metropolitan Washington Council of Governments (MWCOG) and director of some of the most important studies that took place at MWCOG relating to the beltway and Metro.

In their presentation, edge cities were looked at as both agents and products of change. Alan Pisarski looked at the national scene to examine the influence that edge cities have on travel patterns. He began with data relating travel growth to changes in population, households and employment.

In the 80s, population growth topped out at 10 percent, the lowest in any decade in our country's history except for the depression decade. Auto usage grew 17 to 18 percent during the 80s, slightly more rapidly than household growth, but more slowly than the 19 percent growth in number of workers.

During the 80s, 19 million new workers were added to the labor force and 22 million new drive alone commuters were added to the roadways (2.5 million came out of carpools, several hundred thousand each from transit, walking and other). Drive alone trips increased 35 percent. The percentage of trip lengths below 1 mile dropped, between 1 and 4 miles stayed the same, those between 5 and 10 miles, and 10 to 20 miles jumped dramatically, and over 20 mile trips jumped. Work trip lengths increased with area size.

Edge cities have the potential for shorter work trip lengths, and for increased transit and walk trips. Presently, however, there are fewer pedestrian and transit trips with edge city development patterns than with downtown patterns. Within edge cities, the development of internal circulation systems rests on issues of cost and improved juxtaposition of land uses, and some notion of timely, efficient service for the people.

Alan Pisarski indicated that the relationship between land use development patterns and travel patterns is complex. The effect of edge cities on travel patterns will depend on whether the cities are specialized or homogeneous. When all centers offer the same mix of goods and services, then travel behavior should follow the classic gravity model. The number of intervening opportunities passed by a traveler should be reduced, and trip lengths should decline. Greater heterogeneity results in passing more intervening opportunities and thus greater trip lengths.

George Wickstrom presented travel characteristics for the Washington, D.C. metropolitan area. The most outstanding statistic for the past decade is the increase in drive alone trips to 63 percent of the Washington, D.C. metropolitan area. Housing prices, which are considerably less farther out, can be considered a major factor in the drive alone rate. People are willing to pay the price in commute time to live in an area that appeals to them and is affordable. As people move farther out, transit is lost as an option which has resulted in transit use dropping 13 percent. Related in an adverse way is the statistic that car pooling dropped to 15 percent from 23 percent.

It will be necessary to match transportation solutions to land use patterns. Access, line haul and distribution are the factors that must be considered when dealing with transportation solutions in the context of land use. Edge cities do not meet the requirements of all three. The problem is distribution. It is not only a macro-scale problem but also a micro-scale problem. Site specific solutions in conjunction with overall retrofitting edge cities will make them user friendly to other than the single occupant auto.

Transportation Demand Management Options for Edge Cities – Mr. Michael Meyer

Mr. Michael Meyer, from the Georgia Institute of Technology, presented transportation demand management (TDM) suggestions for edge cities. Transportation demand management is any action taken or designed to influence either the timing or the incidence of transportation demand. This includes ridesharing, car pools, van pools, flex-time

programs, site design to encourage transit, and telecommunication activities.

Mike Meyer suggested several characteristics of TDM that are interesting and important to consider in the absence of regulation.

1) Employer-based TDM – Employer support is critical for success of such programs. Issues and motivations of corporate America need to be understood to really encourage participation.

2) Infrastructure Support for TDM – The highway system needs to be kept at some level of accessibility and mobility for people and goods, particularly in the metropolitan areas. Internal circulation systems are not only for internal trips but also as an alternate means of getting to the edge cities.

3) Institutional Issues of Transportation – There is a question of who will provide the transportation services. Quite possibly, it could be the shadow governments or transportation management associations (TMAs) that play a major role in edge cities. It could be a combination of public and private providers.

4) Flexibility – Willingness to modify actions as travel behavior changes is necessary for TDM success.

5) Parking and Parking Management – It may be necessary to rethink traditional parking practices. Currently, most office parks provide an abundance of free or extremely low-cost parking for the employees. These actions encourage drive-alone trips. Creation of a regional or metropolitan area parking authority to enforce parking regulations may be in order.

6) Incentives vs. Disincentives to Influence Travel Behavior – Preferential treatment should be provided for those willing to cooperate in some form of TDM. The impacts of travel behavior in relation to time and money should be provided as further incentive for TDM cooperation.

7) Land Use – It is necessary to understand land use and land use markets. Planning needs to anticipate the needs that will affect the future of edge cities and not react to problems or situations after they happen.

8) Density – With density comes the ability to provide choices of transit or TDM measures. Although edge cities are becoming more dense, they have not reached the density necessary to accommodate these options.

Relevance of ISTEA to Edge Cities – Mr. Kevin Heanue

Mr. Kevin Heanue is the Director of the Office of Environment and Planning for FHWA. His office is leading the way in the FHWA efforts in interpreting the aspects of ISTEA that have to do with State and metropolitan planning regulations, development of the National Highway System, and the issues relating to conformity of the Clean Air Act.

Kevin Heanue noted that increasing highway capacity for edge cities would be easy if there were unlimited funding. However, most often the money is not there to solve the problems created when private developers build in excess of the capacity of the public systems available to them. System management options would allow edge cities to function more efficiently and solve some of the roadway capacity problems. Unfortunately, when travelers make their transportation choices, they tend to optimize individual choices which may be to the detriment of overall system efficiency.

A difficult problem to tackle is linking the unemployed or underemployed in the city centers with the jobs in the edge cities. This may involve a difficult trade-off between new highway capacity, new rail investments or the softer types of investments such as providing a reverse commute bus service. However, there is the much more difficult problem of working to resolve unemployment and related social issues. Social and transportation issues are not generally thought of as being closely related. ISTEA resources will most likely initially be used for some social planning to link the transportation program with some of the more difficult social issues.

In terms of financing new services or improvements to transportation systems, there is considerable flexibility in the Surface Transportation Program (STP). This flexibility is necessary because

of the need for creative solutions, not just for edge cities, but for broader issues such as capacity problems that will occur over the next several decades. Opportunities are going to open up for enhancement investments such as landscaping urban arterials, gateway treatments, and for providing pedestrian and bicycle facilities in both central and edge cities.

Planning, especially at the MPO level, is important for developing a better understanding of how to deal with the problems, to quantify options, and evaluate solutions. Metropolitan areas are, as stated earlier, the economic engines of the country, and planning and decision-making should accommodate these economic engines. It will be up to the State and local communities in each area as to whether they use the MPO option, or let the decisions be made elsewhere.

Management tools are available that will require all the parties involved in transportation planning and programs to look at the systems in new ways, and that will be particularly important in the edge cities area. Provisions in ISTEA also make it possible to form public/private partnerships and to provide creative solutions that were not possible under past legislation.

Retrofitting Existing Edge Cities – Mr. Stephen Lockwood

Mr. Lockwood, the moderator of the seminar, had several comments on retrofitting edge cities.

He began by pointing out that there has been very little systematic development of what might be called planning models or benchmarks. There has been no new discovery of how to make what is currently in edge cities better, even though the problems have been identified. Part of the thinking in dealing with edge cities has to do with retrofitting what is there, or in guiding the evolution of what may be simply a primitive form into something more sophisticated and satisfactory. In looking around the country, there has been little of that kind of work done.

Steve Lockwood believes it is possible to retrofit and improve these areas using market based strategies that can simultaneously do well while doing good. This was tried in an edge city of Dallas to reduce the sprawl effects, and increase the tax ratables (a consideration of the local jurisdictions) in a competitive environment. The initial steps were to improve the relative attractiveness of what is in a particular edge city compared to the potentially competing and more outwardly located alternatives. This involved options such as:

- Regional access improvements into the freeway system,
- Complete internal circulation system,
- Basic transit service,
- Commute alternative program that incorporates ridesharing programs with a supply and demand element,
- Series of transportation demand activities powered by a locally based TMA, and
- A series of image features designed to improve the marketability of the area compared to the competing centers.

A second program was designed to improve the efficiency of land use and infrastructure, and at the same time, reduce the impacts on the adjacent neighborhoods. It was necessary to look closely at the ability to involve and approve mixed land use.

Applying high standards of building, site design and landscaping, and increasing density through in-fill offered other options for major activity centers to be somewhat more self-contained in their non-work related travel. The notion was to make better use of the available land while making the area work better. Quality of life improvements include an amenity package of pedestrianization improvements, architectural and urban design features.

Retrofitting can be done profitably. With some infrastructure investments by the State and local governments, land owners, property owners and businesses could supply some of the pedestrianization needs (shops, delis, etc.) on a relatively self-supporting basis, while mechanisms like public improvement districts could capture the tax increments.

There is a palette of tools that can be used in combination to make a difference in edge cities. Infrequently, this has been done in conventional edge cities, and it seems that this is something that needs to be part of the thinking and planning process for the future of edge cities.

Transportation and Growth Management – Mr. Henry Richmond

Mr. Henry Richmond is the Executive Director of 1000 Friends of Oregon and a leading land use attorney. Henry Richmond was asked to discuss transportation and growth management issues drawing from the land use program in effect in Oregon.

Growth management is not a stop growth or anti-growth concept, but is a determinant of the location of new development. If properly conceived, it will take care of the property rights issues that emerge from growth as well as help to resolve the tension between the pro-development and anti-development factions. An integral part of Oregon's growth management program is the development of urban growth boundaries around metropolitan areas.

Urban growth boundaries attempt to define the extent of the area in which public agencies will provide urban infrastructure, over time. It is also a policy tool that creates a framework for addressing regional housing allocation, affordable housing allocation issues, and provides a framework for integrating transportation and land use policy consideration. It is an urban form concept.

The Oregon land use program requires every city and county to have a comprehensive plan. It created a State planning agency, and adopted 19 statewide planning goals, including one requiring cities to work in conjunction with counties, and another requiring each city or regional planning agency to adopt urban growth boundaries. In the Portland metropolitan area, the comprehensive plan required 23 cities working with 3 counties and a regional planning agency to develop the boundary.

In the 1960s and 1970s, Portland area suburbs zoned vacant residential land for low densities. It took 4 years to get all cities to change their zoning to 1) permit smaller single-family lots, and 2) to increase the percent of the residential land base zoned multi-family (from 7 percent to 28 percent), as required by the state land use goals. The capacity of the land increased dramatically from 130,000 to 305,000 units on essentially the same vacant residential land base. Developers realized at that point that they had much to gain from this process.

Oregon has Goal 12 that relates to transportation and land use policy. A recently added rule requires the use of alternative land use policies and transportation system enhancements, and demand management techniques to reduce vehicles miles traveled (VMT) by 10 percent over the next 20 years and by 20 percent over the next 30 years. This can not be done without the urban growth boundary, or reliable policy tools to guide development within the established boundaries, not permitting any "leaks."

Under the land use, transportation, air quality (LUTRAQ) project, land use and transportation investment decision-making processes are expected to be integrated. The project is attempting to use the land use policy, as well as improvements to transit services and facilities, and TDM techniques to reduce single occupancy auto travel and related impacts on energy consumption and emissions of air pollutants. The purpose is to guide construction of new higher intensity development onto lands within walking distance of existing or planned transit services. Sixty-five percent of new single-family and 100 percent of new multi-family units projected for the study area over the next 20 years would be located within one-half mile of a rail stop, or one-quarter mile of a bus line. Computer models are being enhanced so they will be able to analyze the effects of land use heterogeneity and the pedestrian environment on travel behavior.

To further encourage this type of development, strict zoning classifications and rules covering partitioning are in effect for non-farm or non-forest development. The Farm Bureau and the forest products industry, the principal owners of these lands, have become increasingly supportive of the restrictions.

As part of LUTRAQ, some TDM strategies such as parking fees and possibly congestion pricing are being proposed. Pricing options are not designed to be punitive, but would reflect costs that driving generates that will be internalized.

When various participants in the social and economic system can see that policies are accommodating growth, and that landowners in the countryside are being treated the same as landowners in the city (each has restrictions on use), and it is allowing the capital inputs of their enterprises to be treated on the basis of the values on which they generate their income (farm and forest

values and not speculation values), there is support for that kind of a process politically. If the land use system is presented as fiscally responsible, evenhanded, and understandable to the citizens, relating it to objectives that most people understand such as reducing taxes or affordable housing, or clean air, then it is possible to handle the politically difficult question of countryside "property rights" in the same way that city property rights have been handled for the last 50 years.

Henry Richmond believes in being more thrifty in our development patterns, and that is the concept behind the urban growth boundary. It took 11 years, but every city in the State of Oregon has an urban growth boundary, including a boundary for which the analysis was basically done in 1977 for the Portland metropolitan area.

Institutional Issues Affecting Edge Cities – Mr. Thomas Horan

Mr. Thomas Horan is a Senior Fellow for Transportation and Evaluation Policy at George Mason University where he is engaged in a variety of national as well as local studies. He was asked to discuss the institutional and governance issues in edge cities.

Tom Horan commented on 5 points related to edge cities and the implications of ISTEA. Each of the points relates to the overall issue of governance of edge cities.

1) Structural Fragmentation – Within the metropolitan areas, there is a governance process that considers input from the multiple levels of government within the area. This leads to a fairly complex situation where the controlling power of edge cities can not really be defined. ISTEA will not change that, but it will affect the cost of not achieving some sort of agreement among the various parties. A consensus is necessary among the multiple parties involved on how to move forward with regard to transportation plans to avoid increasing current problems. Funding under ISTEA is flexible and can be used for transit (downtown-related), or to support capacity additions that might be needed at the fringe. ISTEA funds could provide the catalyst needed to unify the multiple jurisdictions found in metropolitan areas.

2) Functional Fragmentation – The metropolitan planning provision of ISTEA requires MPOs, in cooperation with the State, to develop a long-range transportation plan that will have to consider congestion mitigation and air quality issues. The planning process must take into consideration land use, intermodal connectivity, methods of transit service enhancements and needs identified throughout the six management systems identified in the Act. It will not change the fact that land use moves separately from transportation. However, this provision will force the entities to look at the overall picture of the metropolitan area particularly in relation to air quality and transportation.

3) Public/Private Sector Relationships – Public/private relationships are currently present in edge cities usually in connection with TMAs. The Intelligent Vehicle-Highway Systems Act (IVHS) of ISTEA may introduce a new wave of private sector involvement. It is highly probable that private companies would be running the transportation management center or operational program in metropolitan areas with IVHS facilities.

4) Public Support Issues – People choose to live in suburbia even though they are troubled by problems of traffic congestion, and encroachment of urban problems. ISTEA includes provisions that invite the general public to participate in the planning process allowing citizen groups to more easily get their views into the process.

5) Urban Form – ISTEA does not contain a massive, prescribed, capital intensive investment program such as the interstate program. To the contrary, ISTEA encourages improving existing capital facilities. Thus, the legislation will not, by itself, be a major impetus for further decentralization. Still, it is not clear as to how ISTEA will affect urban form.

In sum, ISTEA will have some effect on urban development, but the economy over the next ten years will say as much about further development as the transportation bill.

Mr. Ed Risse – Discussant

Mr. Ed Risse, Co-principal of Synergy Planning, Inc. provided overall comments on the seminar. He began by saying there are three categories that need to be considered in edge city policy planning.

- Vocabulary – There is an urgent need for consistent vocabulary to help in the understanding of edge city policies and planning needed to deal with them. Ed Risse presented a very good example of what the consequences would be if the medical field did not use consistent terms. He pointed out that throughout the seminar, speakers used the same word, but implied different meanings providing multiple opportunities for misunderstandings. There needs to be standardized definitions to avoid confusion when dealing with policy and planning of edge cities and the regions of which they are a part.

- Lack of Reliable Data – Care is necessary when using the currently available data for planning purposes. An example of how data can be misinterpreted involves a "loss" of car-poolers on the carpool facility that was present in northern Virginia in 1980. From 1980 to 1990 in this region, statistics showed a net loss of 8.5 percent in the number of car-poolers, yet the flow on that high occupancy vehicle facility (HOV) increased by more than 30 percent. The reason for the discrepancy is that a 1970 region was used to compare 1980 data with 1990 data. A more effective way to collect and analyze data needs to be found to overcome this type of misinterpretation.

- Reality – Edge cities are the most blatantly obvious example of our new urban regions, but there are no definitions or data with which to measure or define these new urban regions or parts such as edge cities. New planning concepts and models are needed to deal with the problems of suburban development as it is occurring, but first it is necessary to understand the many parts that make up the total metropolitan region.

Mr. Peter Koltnow – Discussant

Mr. Peter Koltnow, a private consultant, provided closing comments on the edge city seminar.

Peter Koltnow pointed out that Joel Garreau's real contribution has been to give us an understanding and a grip on the scale of things that are already known. He believes that Joel Garreau has made it clear that edge cities are not an aberration of form, but are normal. However, he did have some concerns about some issues mentioned.

The issue of whether edge cities are good for the environment is questionable to Peter Koltnow. He suggests that a better measuring system is needed to analyze how the changing shape of our urban areas, particularly in relation to transportation, affect air quality.

He realizes that it is difficult to get away from the idea of centrality in a metropolitan area, even though it might not be a valid notion any longer. He believes it is necessary to look at transportation system needs in terms of multiple centers.

Peter Koltnow made a general observation that many seem to think that edge city development has reached a peak at least for the time being. This should allow for the chance to be more thoughtful about how the funds from ISTEA are used to improve edge cities.

Comments Added for the Record

Written comments for the record were received from several people. Mr. Anthony Downs, of the Brookings Institute, offered some insights and suggestions for dealing with edge city issues. First, he suggested regarding transportation planning in the broader context to include social planning, not just as an engineering solution to moving people and goods from Point A to Point B. The metropolitan planning organization emphasis of ISTEA provides a unique opportunity to adopt this broader perspective, but if the decision-making and planning are left up to the State and local governments, then the end result will be much of the same—the minority once again falling between the cracks.

Mr. Eli Cooper, from the New Jersey Office of State Planning, provided comments on how the New Jersey State Plan promotes development patterns in the form of centers, but notes that there is little literature to assist communities that desire to move toward a more intense, higher density land use form. He suggests a mandatory detailed analysis be done that would express the advantages of this type of development in terms of traffic and transportation as well as other areas. The more information that becomes available on this type of clustered land use, the more acceptable and, hence implementable it becomes.

Mr. Bruce Cannon, of FHWA, pointed out that the edge city geographic area, as determined by commute pattern, is very large. Long commute trips, often 40 to 50 miles each way, are associated with the lack of affordable housing near edge city employment sites. The edge city-transportation-affordable housing issue may be addressed by the congestion management and air quality programs in ISTEA. These programs will also develop a policy and programmatic approach to address the root causes of the congestion and air quality problems.

Mr. Rolf Schmitt, of FHWA, noted that edge city travel patterns depend on whether the cities are specialized or homogeneous. When all centers offer the same mix of goods and services, travel behavior should follow the classic gravity model. Travelers will not pass intervening opportunities and trip lengths will be shorter. If the type of retail and other establishments vary among edge cities, a complex web of travel patterns will emerge with longer trip lengths because intervening opportunities are ignored. He also stated that many edge cities are located along radial corridors and may generate sufficient density to support transit use. He cited the example of Frederick-Rockville-Bethesda corridor, which provides intermediate destinations for MARC train service between western Maryland and downtown Washington, D.C.

Appendix A

Seminar Attendees

Ms. Donna Aggazio
Federal Transit Administration

Ms. Jane Armstrong
U.S. Environmental Protection Agency

Ms. Sharon Barkeloo
Office of Management and Budget

Mr. Jerry Bastarache
Highway Users Federation

Mr. Salvatore Bellomo
Bellomo-McGee

Mr. Wayne Berman
Federal Highway Administration

Ms. Madeleine Bloom
Federal Highway Administration

Ms. Cynthia Burbank
Federal Highway Administration

Mr. John Callow
Callow Associates, Inc.

Mr. Bruce Cannon
Federal Highway Administration

Mr. Joseph Canny
Office of the Secretary
U.S. Department of Transportation

Mr. Benjamin Chinitz
Harvard University

Mr. Kevin Connolly
Howard/Stein-Hudson

Mr. Eli Cooper
New Jersey Office of State Planning

Ms. Melanie Crotty
Federal Transit Administration

Ms. Grace Crunican
Surface Transportation Policy Project

Mr. Michael Danielson
Princeton University

Mr. Ted David
Apogee Research, Inc.

Mr. John Day
Federal Transit Administration

Mr. Pat DeCorla-Souza
Federal Highway Administration

Mr. Bruce Douglas
Parsons, Brinckerhoff, Quade & Douglas

Mr. Anthony Downs
Brookings Institute

Mr. Robert Dunphy
The Urban Land Institute

Mr. Larry Dwyer
Federal Highway Administration

Ms. Barbara Faigin
National Highway Traffic Safety Administration

Ms. Patricia Faux
The Edge City Group

Mr. Francis Francois
American Association of State Highway and Transportation Officials

Mr. Joel Garreau
The Edge City Group

Ms. Susan Gaskins
Federal Transit Administration

Mr. David Goldstein
Federal Highway Administration

Mr. Richard Hartman
Consultant

Mr. Kingsley Haynes
George Mason University

Mr. Kevin Heanue
Federal Highway Administration

Mr. Tony Hiss
New Yorker Magazine

Mr. Thomas Horan
George Mason University

Mr. Edward Hromanik
National Capital Planning Commission

Mr. James Hughes
Rutgers University

Mr. Mark Hughes
Harvard University

Mr. Shelton Jackson
Office of the Secretary
U.S. Department of Transportation

Mr. Donald Knight
Eno Transportation Foundation

Mr. Peter Koltnow
Consultant

Mr. Thomas Larson
Federal Highway Administration

Mr. Christopher Leinberger
Robert Charles Lesser & Company

Mr. Andrew Lemer
Building Research Board

Mr. James Link
Federal Highway Administration

Ms. Susan Liss
Federal Highway Administration

Mr. Stephen Lockwood
Federal Highway Administration

Mr. Thomas Luebke
The Mayors' Institute on City Design

Mr. William Mallett
George Mason University

Mr. James March
Federal Highway Administration

Mr. George Marcou
American Planning Association

Mr. Gary Maring
Federal Highway Administration

Mr. Paul Marx
Federal Transit Administration

Mr. David McElhaney
Federal Highway Administration

Mr. Lee Mertz
Consultant

Mr. Michael Meyer
Georgia Institute of Technology

Ms. Ann Mladinov
Office of the Secretary
U.S. Department of Transportation

Ms. Linda Morris
Federal Highway Administration

Mr. Paul Nissenbaum
Apogee Research, Inc.

Mr. George Oberlander
National Capital Planning Commission

Mr. Kenneth Orski
Urban Mobility Corporation

Mr. Robert Patten
Rails to Trails Conservancy/STPP

Ms. Kristin Pauly
Chesapeake Bay Foundation

Mr. Craig Perry
WETA

Ms. Fern Piret
Maryland-National Capital Park
and Planning Commission

Mr. Alan Pisarski
Consultant

Ms. Reena Racki
Architecture and Planning

Mr. Henry Richmond
1000 Friends of Oregon

Mr. Edward Risse
Synergy Planning, Inc.

Mr. Carlton C. Robinson
Consultant

Mr. Morris J. Rothenberg
JHK & Associates

Ms. Elizabeth Rumelhart
Federal Highway Administration

Mr. Rolf Schmitt
Federal Highway Administration

Mr. James Shrouds
Federal Highway Administration

Mr. Robert Skinner
Transportation Research Board

Mr. Jack Sommer
Department of Housing and Urban Development

Mr. Frank Spielberg
SG Associates, Inc.

Mr. Richard Steinmann
Federal Transit Administration

Ms. Jocelyn Stevenson
Office of the Secretary
U.S. Department of Transportation

Ms. Jessie Strauss
Federal Highway Administration

Mr. Bo Strickland
Federal Highway Administration

Ms. Mary Anne Thompson
Tysons Transportation Association

Ms. Mary Lynn Tischer
Virginia Department of Transportation

Mr. Frank Turner
Consultant

Mr. Richard Tustian
Consultant

Mr. Robert Washington
Federal Highway Administration

Mr. Ed Weiner
Office of the Secretary
U.S. Department of Transportation

Mr. George Wickstrom
Consultant

Mr. Julian Wolpert
Princeton University

Mr. Clyde Woodle
Trucking Research Institute

Mr. Robert Yaro
New York Regional Plan Association

Mr. Jimmy Yu
Federal Transit Administration

Mr. Sam Zimmerman
Federal Transit Administration

Mr. Charles Zucker
American Institute of Architects

Appendix B

EDGE CITY AND ISTEA — *SO WHAT?*

Sponsored by
the Federal Highway Administration

AGENDA

AUGUST 13, 1992
WASHINGTON, D.C.

ROOM 2201

8:30 am	Introduction/Research Orientation
8:45 am	Opening Remarks – Thomas D. Larson, Federal Highway Administrator
9:00 am	Keynote Presentation, "Edge City," by author Joel Garreau and discussion
10:00 am	Regional Economic, Geographic Forces that Have Shaped Edge Cities – Mark Hughes, Harvard University
10:30 am	Economic and Market Issues Affecting Edge Cities – Christopher Leinberger, Robert Charles Lesser & Co.
11:00 am	Discussants: 1) James Hughes, Rutgers University 2) Richard Tustian, Lincoln Institute of Land Policy 3) Robert Dunphy, Urban Land Institute
11:30 am	Lunch

ROOM 2230

12:45 pm	Open Discussion
1:30 pm	Panel - Implications of Edge Cities for Transportation Steve Lockwood, moderator (Note: Series of short presentations/discussions)

Influence of Edge Cities on Travel Patterns –
Alan Pisarski, Consultant and George Wickstrom, Consultant

What is the Relevance of ISTEA to Edge Cities –
Kevin Heanue, FHWA

Transportation Demand Management Solutions for Edge Cities –
Michael Meyer, Georgia Institute of Technology

Retrofitting Existing Edge Cities – Steve Lockwood, FHWA

Transportation and Growth Management –
Henry Richmond, 1000 Friends of Oregon

Institutional/Governance Issues in Edge Cities –
Tom Horan, George Mason University

3:00 pm	Break
3:15 pm	Discussants: 1) Ed Risse, Synergy/Planning, Inc. 2) Anthony Downs, Brookings Institute 3) Peter Koltnow, Consultant
3:45 pm	Closing remarks

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