# The Future of Tysons Corner: A Fifteen-Point Blueprint for the New "Downtown" of Northern Virginia

Richard A. Etlin
Distinguished University Professor
School of Architecture, Planning, and Preservation
University of Maryland

Prepared for the McLean's Citizen's Association
And delivered at their meeting on October 21, 2004

Ladies and Gentlemen,

I thank Susan Turner and the McLean Citizens Association for its invitation to make a comprehensive proposal from my perspetive as an academic for the future of Tysons Corner.[1] Tysons Corner is undoubtedly world famous, thanks in large part, to the before-and-after two-page fold-out photos that bracket Joel Garreau's book, Edge City, published in 1991. Yet Tysons Corner and its neighboring suburbs are not unique. Everywhere that you go in the United States, you will encounter a similar pattern of land use, certainly with its wonderful virtues of suburban life but also now with major problems: congested roads, frustratingly long trips to and from work, unfortunate isolation of teenagers from their friends as well as from beneficial sources of recreation, and lack of convenience shopping for basic groceries that requires a trip in the car. It is a settlement pattern that contributes significantly to the pollution of

[1] I also am grateful to numerous colleagues on the faculty of the University of Maryland School of Architecture, Planning, and Preservation, as well as of the National Center for Smart Growth, who provided me with copious documentation and who made helpful suggestions to earlier drafts. To this end, I thank Gary Bowden, Jim Cohen, Karl DuPuy, Reid Ewing, Marie Howland, Gerrit Knaap, and Roger Lewis. I, alone, though, bear the responsibility for the ideas presented here and for any possible errors. Without the help of my research assistant, Deborah Bauer, I would not have been able to complete the research for this report in time for the October presentation. Over the course of the summer and then the fall semester, Ms. Bauer

the air we breathe, as well as of our streams and other waterways, with damage and, in certain cases, extinction, of local wildlife, and contribution to global warming both from vehicular exhausts and increased occupation of the land. A recent panel studying the Chesapeake Bay Watershed, for example, found that "residential and commercial development used 0.65 acre of land per person in 1988 compared with about 0.18 acre in the 1950s." And a Texas study of 1996 calculated that "urbanized area increased on average 43% faster than population growth." In a report dating from the year 2000, the Environmental Protection Agency noted, "Vehicle travel has increased substantially in recent decades. Between 1980 and 1997, vehicle miles traveled (VMT) in the United States increased 63%. This growth rate was almost three times more rapid than population growth during the same period." This report also observed,

> In 1991, air pollution from highways is estimated to have caused between 20,000 and 46,000 cases of chronic respiratory illness. Atmospheric deposition of vehicular pollutants into bodies of water also adversely affects water quality. The economic costs of air pollution in terms of health impact, crop damage, and building and materials damage are significant.[2]

What is to be done to ameliorate this situation and, in particular, what does Fairfax County intend for the future of Tysons Corner, where new construction is planned "to be almost twice the area's current (1993) development levels"[3]? The Fairfax County Comprehensive Plan as amended through January 27, 2003, contains a 78-page section devoted to the "Tysons Corner

---

assiduously tracked down various documents that I needed and promptly secured them for me. Finally, I have made a few changes to the text delivered on October 21.

[2] EPA, Our Built and National Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality (2000), 6, ii.

Urban Center," also called the Tysons Corner Plan. This Plan acknowledges the types of problems outlined above. For example, it observes,

> Tysons Corner's sprawling size has resulted in an auto-oriented suburban development pattern in which buildings are generally developed on individual lots, set well back from roadways, and surrounded by large areas of surface parking. Although Tysons Corner contains many unique and attractive buildings, there is little visual integration and few pedestrian and transit linkages among developments. The overall effect of the current development is a lack of cohesiveness and identity.

Moreover, the Plan presciently observes,

> The pattern of relatively tall buildings separated by large expanses of parking lots and some open space and the dispersion of uses -- a restaurant here, an office building a fair distance away -- forces people to get into their cars to travel even short distances. Walking is difficult because there is no integrated system of sidewalks or trails between individual buildings or complexes. Such a land use pattern is also difficult to serve by transit because places where people can be picked up or dropped off are spread out.

The goal of this plan is "to create a more urban living environment within the suburbs," through "mixed-use developments, including more residential development," such that Tysons Corner becomes "both pedestrian- and transit-friendly." In short, the Tysons Corner Plan wishes to make Tysons Corner into the "County's Urban Center," its "'downtown.'"[4]

---

[3] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 25, 26 ("over a 90% increase in development square footage").

[4] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 5-8, 10, 19.

Although amended in 2003, this Tysons Corner Plan, as the document explains, essentially dates back to the "major review" of the County's Comprehensive Plan undertaken in 1989-1991, with subsequent revisions reaching into 1993.[5] Herein lies the crux of the matter. Although the goals quoted above from the Tysons Corner Plan are highly laudable, that plan was completed at a moment when important new studies and significant new land-use strategies were emerging that shed new light on the potential effectiveness of the policies envisaged by the plan to implement its objectives and that consequently allow one to propose alternative strategies that might better realize the plan's own stated goals.

No doubt the plan developed between 1989-1993 reflected the wisdom of that period. Yet a decade of subsequent experience has shown that other strategies may be more efficacious. Consequently, the 15-point project that I will now outline is not a criticism but rather merely an attempt to update the plan with alternative strategies based on the most recent lessons in land-use development.

I am happy to assure all parties that my proposal will enhance the property value of residential and commercial land owners both within Tysons Corner and its surrounding neighborhoods and will enable developers to profit significantly from new construction, while helping to foster a pedestrian-friendly environment with less pollution, less traffic congestion, and a more lively urban center that will also feature a distinctive sense of place. I am a great believer in creating win-win solutions so that all parties benefit. I disagree with Charles Darwin about the

[5] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 7.

efficacy of the survival-of-the-fittest. All communities make better progress through cooperative endeavors in which the interests of all parties are taken into account.

A colleague at the university tells me that one of the most suggestive recent trends in land-use is the emergence of what are called "life-style centers," created by developers who take failing shopping centers or other large sites and largely raze them to the ground, which they then overlay with a grid of short blocks. What these modern developers understand is that the traditional city grid of walkable streets provides the best infrastructure for creating an ongoing and ever-evolving urban center, which also offers the most security for the maintenance of property values. I was recently reminded about the wisdom of the city grid when strolling along the main downtown streets of Naples in southern Italy. Those lively streets, crowded with native shoppers and tourists, were laid out by the Romans nearly two thousand years ago and they still serve admirably today. Like diamonds, great streets are forever. In our own country, let us remember that the vast majority of buildings in Manhattan, for example, are located along a regular street grid laid out nearly two hundred years ago. The urban grid is like the underlying skeleton of the body. It assures the continuity of a pedestrian-oriented urban fabric. It is the best means for creating a lively residential and commercial downtown.

The Tysons Corner Plan appears to accept the current street pattern, which is essentially a sprawling suburban shopping layout. My first point is to recommend that an attempt be made to overlay as rational as possible an urban grid, with walkable blocks of 220'-450' in length. Obviously certain buildings will come down to accommodate the grid; yet their remaining land will have greater value and over a longer period of time.

Now for point 2: in order for this new urban grid to be successful, the Tysons Corner urban center will have to accommodate a considerable number of residences spread relatively evenly throughout the downtown zone. This is necessary to create the requisite number of people who can support the existence of local commerce in the new store fronts to be located on the street and to provide a work force that will walk, bicycle, or take short, local bus rides to work within Tysons Corner or travel elsewhere to work, thanks to anticipated arrival of the Metro. This even distribution of residences is also necessary to provide what Jane Jacobs, in her classic study, The Death and Life of Great American Cities, called the eyes on the street, which are among the best crime preventors. The Tysons Corner Plans notes that "as of 1993, there were about 5,700 dwelling units" there and it anticipates increasing that number to 9,000, along with a supplemental 4,000 "if rail transit is introduced," such that these last 4000 units would be developed "in conjunction with redevelopment of designated transit station areas."[6]

Whereas I cannot give a precise figure, it might be possible that even more dwellings will be needed. Consider, for example, that Philadelphia, according to one of its local newspapers, "boasts the largest number of downtown residents in the United States who walk to work -- 38,000 people, -- comprising more than 50% of residents" in that area, thanks to "mixed land use developments."[7] In other words, it takes about 80,000 downtown residents to generate nearly 40,000 people who will find jobs locally enabling them to walk to work. In 1993, about 70,000 people worked in Tysons Corner. The Tysons Corner Plan calls for nearly

[6] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 5, 25, 59.
[7] Smart Growth Network, Getting to Smart Growth II: 100 More Policies for Implementation (International City/County Management Association), 1-2.

doubling that number.[8] A study needs to be undertaken to determine how many residential units are required such that a sizable percentage of those residents will find employment in the Tysons Corner downtown.

Getting to work without the car is not the only benefit or goal. A survey prepared in 2002 for the Brookings Institution Center on Urban and Metropolitan Policy found that "63% of Americans would like to walk to stores and other places." "The same survey," as the International City/County Management Association reports, "also found that 54% of Americans believed that there were too few shops or restaurants within walking distance of their homes."[9] In other words, by increasing the residential population significantly and by spreading it evenly across a well gridded urban center, Tysons Corner would be poised to create a vibrant and profitable urban community.

Point 3: a walkable urban street grid and a sizable urban residential population also require a suitable urban design configuration. The Tysons Corner Plan hopes to ameliorate the spread-out suburban nature of development "through the placement of buildings closer together and closer to the roads."[10] I recommend that the Plan simply require the construction of adjacent buildings all placed along the sidewalk, except, of course, where there would be urban plazas, and perhaps along certain through streets, whose main function would be to send vehicular traffic through the site as rapidly as possible. There are many patterns that these adjacent buildings with shops on the sidewalk might take, ranging from the traditional late

---

[8] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 3.

[9] Smart Growth Network, Getting to Smart Growth II: 100 More Policies for Implementation (International City/County Management Association), 11.

nineteenth- and early twentieth-century downtown of Philadelphia to the current trend in Vancouver, where three stories are built along the street and towers are set back from the street.

The fine-grain urban grid that I am proposing offers the opportunity to design sidewalks, bike paths, and bus and trolley stops directly into the urban fabric. Point 4 specifically addresses the need to plan for and accommodate the bicycle. Why not follow the example of the redevelopment plan completed in 1998 for the Pearl Court Apartment Complex in Portland, in which the 199 high-density urban housing units contain a storage room for 144 bikes. This storage room, along with pedestrian access to bus and rail lines enabled the city to reduce the number of parking spaces that the developer had to provide.[11] This is another example of a win-win situation. To quote the title of a recent publication sponsored in part by the Urban Land Institute and the Florida Department of Community Affairs, such a "best development practice" means "doing the right thing and making money at the same time."[12]

In recent years American cities and counties have adopted numerous other approaches to facilitating bicycle use so as to reduce auto use. The Tysons Corner Plan could easily avail itself of the following strategies, as reported by the International City/County Management Association through the Smart Growth Network:

> One of the barriers to wider bicycle commuting is limited access to showers and changing facilities. … In Sacramento...developments with 100 or more employees

---

[10] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 10.

[11] Environmental Protection Agency, EPA Guidance: Improving Air Quality through Land Use Activities (January 2001), 20.

may reduce their parking requirement by providing shower and clothing locker facilities for bicycle commuting employees.

Cities such as Denver and Iowa City "require bicycle parking for larger commercial buildings." Furthermore, "community bike programs are also growing. Tampa, Florida; Portland, Oregon; Madison, Wisconsin; Missoula, Montana; and Boulder, Colorado, offer bikes free and for charge in downtown districts."[13]

The Tysons Corner Plan does foresee "bicycle paths and secure bicycle parking at employment, business, apartment, and public uses" and wishes to "encourage [the incorporation of] showers and locker facilities…into office development for those who bicycle to work."[14] Only a short step needs to be taken to transform a good intention into specific requirements or incentives.

Let's talk about traffic now, -- and here is my fifth point -- because a rationalized and walkable street grid, with shops adjacent to the sidewalk, and a sizable population living throughout the downtown, requires a complete network of urban bus service, stopping every two or three blocks to pick as few or as many people as might be waiting at the stop, every five, seven, or twelve minutes, depending on the time of day, with less frequent late-night service. Once again, this would be an urban level of service, as found in successful cities such

---

[12] Reid Ewing, Best Development Practices: Doing the Right Thing and Making Money at the Same Time (Washington, D.C.: American Planning Association Planners Press and the State of Florida, 1996).
[13] International City/County Management Association/Smart Growth Network, Getting to smart Growth II: 100 More Policies for Implementation, 78.
[14] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 67, 75.

as New York, Paris, Rome, and Milan. Let's hope that this is what is meant by the references to a "shuttle bus system or 'people mover' circulation system" in the Tysons Corner Plan.[15]

The current Tysons Corner Plan sensibly hopes for the extension of the Metro system to the site, with the preferred location found across the middle of the area, with three Metro stops anticipated. This new Metro access is to be linked to the downtown with a bus or "fixed-guideway 'people-mover'" system – I assume this means trolley – in a linear or loop "circulator system."[16] It is not clear whether the Plan is referring to this circulator system that would interface with Metro or to any bus system to be developed at Tysons Corner when elsewhere it asserts, "Efficient operation requires that the number of stops be limited and that a relatively large number of people be picked up or dropped off at each stop."[17] The experience of the successful cities mentioned above suggests instead a strategy of saturating the grid with bus service that provides frequent stops at short intervals of time.

In the greater Washington, D.C., metropolitan area, we are so accustomed to thinking about the Metro as the primary means of downtown public transit, with the less frequently operating bus system serving as a supplement, that we might have difficulty imagining how effective a tightly woven bus network with very short waiting times can become the metaphorical and actual lifeblood of the city. Having lived for about a year in Rome and Milan, with work requiring me to move about town each and every day, going all the time to different

[15] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003 10.
[16] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 69-70.
[17] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 10.

places, I was thrilled to discover how buses and, in the case of Milan, trolleys, took me everywhere without needing to use the subway.

American cities, time and again, have learned so much from European cities, only to surpass their elders with new accomplishments. Frederick Law Olmsted and Calvert Vaux's magnificent Central Park in New York City, arguable the most beautiful urban park in the world, was an improvement upon Birkenhead Park outside of Liverpool, which Olmsted had visited and studied assiduously. The Washington Mall, in its present version, is the product of a team of designers working for the Macmillan Commission at the turn of the last century, which visited the great cities and parks of Europe, only to return to create this most inimitable space, the symbolic core of our federal city. It is time again now to learn from the Europeans, who have been constructing livable cities for hundreds and in some cases thousands of years.

And not only do these historic cities have extensive and frequent bus service, they also have trolleys, what we now call light rail, that conveniently and rapidly link the urban downtown with peripheral suburban communities. I am talking about big cities such as Berlin and Milan, about medium cities such as Strasbourg, and about even more modest cities, such as Caen in Normandy. Modern light rail, sleek in its design, silent and rapid, non-polluting, also adds an element of dynamic visual excitement that brings life to an urban center. And liveliness attracts people, and people spend money. Let us remember that our first suburbs were made possible by the trolley, which is now being reintroduced into American cities as well. Recently, Smart Growth America reported that light-rail lines have opened "to higher-than-expected ridership in

cities from Minneapolis to Houston."[18] And the New York Times subsequently reported that the Denver metropolitan area was initiating work on "one of the most ambitious urban transportation projects in the nation's history – 120 miles on six new rail lines," providing a mix of commuter rail and light rail to accommodate the anticipated regional influx of 900,000 new residents over the next two decades.[19] So trolley service across the urban core and reaching out into the neighboring suburbs is point 6.

Three years ago the EPA pointed out that "In a 1998 review of literature on the link between urban form and travel behavior, Apogee/Hagler Bailly concluded that urban form can have a discernable effect on travel behavior." The report cited a series of factors: density, land-use mix, transit accessibility, pedestrian-environment/urban-design factors, and regional patterns of development. The six points for Tysons Corner that I have presented so far address all of these factors with the most effective contemporary urban-design strategies. One of the most interesting findings of the EPA report was that "Rates of vehicle ownership are lower in places where personal vehicles are not required for personal mobility, even when income/economic factors are considered."[20]

The Tysons Corner Plan calls for "18 additional lanes of roadway serving the area," a measure adopted in the July 1991 Transportation Plan recommendation.[21] Once again, more recent developments in transportation policy and practice lead me to believe that this

---

[18] newsletter@smartgrowthamerica.org (October 21, 2004).
[19] Kirk Johnson, "Newcomers Reinvent Denver, with a Train System," New York Times (November 11, 2004), A20.
[20] Environmental Protection Agency, EPA Guidance: Improving Air Quality through Land Use Activities (January 2001), 15-17.
[21] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 25, 59.

recommendation might profitably be revisited. The problem is the phenomenon of induced traffic. In 1993 a University of California-Berkeley team led by Mark Hansen produced a study on the "auto traffic effects of changes in road capacity" that the EPA in 2000 was citing as an industry standard: "The peer-reviewed results are statistically robust and quite clear: induced travel can occur and can absorb all new capacity." In fact, the "full increase in VMT [vehicles miles traveled] materializes within five years of the change in road supply." Moreover, these eighteen additional lanes may very well produce even greater traffic congestion on other roads. The Berkeley studied found that "adding lane miles in a given county increases VMT throughout the wider region."[22] This outlook would be dismal enough, even if the Tysons Corner Plan had anticipated an amelioration of the traffic by adding these eighteen lanes. Yet the Plan, without considering the phenomenon of induced traffic, was pessimistic about the traffic situation even while advocating the creation of these additional eighteen lanes:

> Traffic levels of service in several Fairfax County employment centers[,] including Tysons Corner, are expected to continue to deteriorate based on forecasted levels of population and employment growth in the County's Comprehensive Plan. Tysons Corner is expected to continue to attract a significant share of work and retail trips to Fairfax County. The majority of these trips are expected to continue to occur in low occupancy vehicles. As a result, traffic demand in and out of the area is forecasted to

[22] EPA, Our Built and National Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality (2000), 22-23.

exceed supply even with full implementation of the adopted July 1991 Transportation Plan recommendation, which adds 18 lanes of roadway capacity to the area.[23]

So point 7 is too avoid creating induced traffic.

What is to be done? To address this problem the Plan rightly turns to "carpools, vanpools, buses and rail transit."[24] Perhaps additional lanes should be added to some of the roads. What is needed is a three-part road hierarchy that distinguishes between primary arterials whose main function is to take vehicles through or around the site, secondary roads that distribute vehicles to the various districts, and tertiary roads within the districts themselves. Fortunately, the Tysons Corner Plan does make these distinctions. What is also needed – and here is point 8 – is the creation of parking nodes strategically located by the primary and secondary roads, so that large numbers of cars can be left outside of the urban core, with people being transported rapidly into the center via bus and trolley. Cities in France post the number of available parking spaces in downtown parking garages with large electronic signs over the roadway at the periphery of the city, so that informed drivers will know whether they should take advantage of peripheral parking, which can be made more extensive at Tysons Corner than downtown parking. One hopes that this is what the Tysons Corner Plan envisages when it refers to the possibility of creating "parking management programs."[25] In addition, and here the problem surpasses the bounds of Tysons Corner, the Metro system has to consider

---

[23] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 59.

[24] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 59.

[25] [25] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 61.

implementing a single fare with free bus transfer, which is a transit strategy that increases ridership dramatically, as is demonstrated by the example of New York City.

Now for point 9: to foster an urban mentality and to encourage urban practices, such as urban shopping and delivery policies. Whether shopping for groceries or for home appliances, urban dwellers are accustomed to having their purchases, when they are too bulky or to weighty to carry, delivered to their home the same or next day for a nominal fee. New Yorkers can even do grocery shopping over the internet, with top-quality food delivered in refrigerated trucks. Not only should we be able to grocery shop from home, we should also be able to work, at times, from home. In last Wednesday's Washington Post Express, a brief notice, with a dateline appropriately from Tysons Corner, reported that "Officials…at a telecommuting forum sponsored by the Metropolitan Washington Council of Governments urged companies to let employees work at home at least one day a week," thereby reducing rush-hour traffic. Fairfax County Board of Supervisors Chairman Gerald E. Connolly reported that the "annual State of the Commute Survey shows telecommuting has increased from 290,000 workers to 320,000 since 2001, accounting for 12.8% of the region's work force." The Council of Governments hopes to raise that number to 20%.[26]

In the same spirit, perhaps the state could develop a program of Stressed Transportation Zones, with Tysons Corner being the prime case, where people who use public transport rather than their car to go shopping there could be given reductions on sale tax for the items purchased. Such a program, conceived in the spirit of an Urban Enterprise Zone, could use the Smartcard to certify that the shopping trip was made from home to the store with public

transport. A similar benefit could given to bike riders whose Smartcard would be validated at the bike parking rack.

Now for points 10-13. The last decade has seen important developments in the domain of sustainability, which involves a more efficient use of natural resources so as to produce less waste and to consume less energy, as well as lessened dependence upon toxic materials, and a fostering of improved environmental quality with respect to air, light, plants, and wildlife, while also enhancing worker productivity, health, and satisfaction. Sustainability can be seen as referring to three different domains (1) sustainable, or so-called green, buildings; (2) low-impact development with respect to the impact of impervious surfaces on the water cycle; and (3) unbuilt or planted open space, including parks, landscape, and land around rivers, streams, ponds, and other bodies of water. Only the third item appears, albeit only in cursory form, in the Tysons Corner Plan and not within a comprehensive strategy to foster sustainability, which is largely a new issue that has emerged in a convincing manner in the decade since the writing of the Plan.

The commonly accepted standard for sustainable buildings, the so-called green architecture, is the LEED rating system. LEED is an acronym for Leadership in Energy and Building Design, a rating system developed by the United States Green Building Council, a national nonprofit membership organization. A few weeks ago in a talk at the National building Museum, Gregory H. Kats, an expert in LEED architecture, quantified the financial benefits of LEED-certified buildings in a summary of a report prepared by the firm Capital E in partnership with the U.S. Green Building Council and California's Sustainable Building Task Force for 40+

---

[26] "'Telework' Touted As Traffic Fix," Express (October 13, 2004), 10.

California state agencies. Mr. Kats, by the way, "served from 1996 to 2001 as the Director of Financing for the $1.1 billion dollar Office of Energy Efficiency and Renewable Energy at the U.S. Department of Energy." We all know that global warming is caused largely by the excess production of carbon dioxide from human activities. Fewer of us are aware that "U.S. buildings alone are responsible for more carbon dioxide emissions than those of any other country in the world except China."[27] In other words, our buildings pollute as well as our motor vehicles.

LEED-certified buildings contribute significantly to saving precious energy. They are "on the average 25-30% more energy efficient." Not only do they make good environmental sense, they make good geopolitical sense as well. For that reason, the Air Force and the Navy will only construct green buildings now so as to free our country from dependence on Middle Eastern oil. Moreover, green architecture is cost-effective.[28]

The upfront additional cost of LEED-certified buildings is just short of 2%, or $3-5/square foot, more than conventional buildings. Yet LEED buildings offer substantial savings and even profit over a 20-year cycle: energy savings of $5.80/ square foot, emissions savings of $1.20/square foot, water savings of $0.50/square foot, and operations and maintenance savings of $8.50/square foot, yielding a total savings of $16.00/square foot, minus the $3-5 of added cost. This added cost, Kats emphasizes, is incurred largely because of "increased architectural and engineering design time," a factor that decreases with experience. For example, "Seattle

[27] Gregory H. Kats, "Green Building Costs and Financial Benefits" (Barr Foundation; Environmental Business Council of New England, Inc.; Equity Office Properties; Massachusetts Technology Collaborative; Massport, 2003), 2.

[28] Gregory H. Kats, "Green Building Costs and Financial Benefits" (Barr Foundation; Environmental Business Council of New England, Inc.; Equity Office Properties; Massachusetts Technology Collaborative; Massport, 2003), and "What Are the Costs and Benefits of Green Buildings?" lecture at National Building Museum, September 28, 2004.

has seen the [additional upfront] cost of LEED silver buildings -- [the second of the four LEED quality levels] -- drop from 3-4% several years ago to 1-2% today." In addition to these direct savings related to energy and maintenance, there are even larger savings derived from increased worker productivity and better worker health and hence fewer sick days, yielding a savings of an additional $37 to $55 per square foot. LEED buildings, moreover, rent at higher premiums -- 8-10% more at Battery Park in New York City, for example -- and have fewer vacancies than conventional buildings.[29] In short, LEED building standards belong in every community's master plan, which is point 10.

LEED standards are not limited to buildings. The "latest generation of LEED ratings evaluates the environmental aspects of location":

> The LEED 2.0 scorecard includes a section on sustainable sites, including urban redevelopment, reduced building footprint, and proximity to transit and bicycle amenities. (...) The State of Maryland has translated its Smart Code into a LEED score. The Smart Code program was developed to reduce code and permit barriers to renovating older buildings in developed areas.[30]

A revised Tysons Corner Master Plan could incorporate such features while extending them to new construction. Mr. Kats announced the other day that LEED is about to issue standards for neighborhood development. So point 11 would be to apply a LEED score to all aspects of land use.

---

[29] Gregory H. Kats, "Green Building Costs and Financial Benefits" (Barr Foundation; Environmental Business Council of New England, Inc.; Equity Office Properties; Massachusetts Technology Collaborative; Massport, 2003), 3, 8, and "What Are the Costs and Benefits of Green Buildings?" lecture at National Building Museum, September 28, 2004.

The second major area of sustainability has to do with water quality. According to the EPA,

> Many watersheds are rapidly becoming developed. For example, urban land use in the Occoquan watershed in northern Virginia is projected to increase from 7.3% in 1977 to 55.7% in 2020. Impervious cover -- the imprint of land development on the landscape, composed of the sum of roads, parking lots, sidewalks, rooftops, and other impermeable surfaces -- in the watershed is expected to grow from 11% of the basin in 1995 to 20% in 2020. This development has serious environmental consequences. Stormwater runoff has been identified as one of the major contributors to ongoing water quality problems in this country.[31]

We have the opportunity to retrofit Tysons Corner and to guide appropriately designed new development so as to lessen the deleterious effects of stormwater runoff, which include, as the EPA explains,

> pollut[ion] by pesticides and fertilizers from homes, farms, heavy metals, antifreeze, lead and partially oxidized hydrocarbons from gasoline- and diesel-fueled vehicles, oil, urban debris, and spillage from accidents. Pollutants accumulate on impervious surfaces. These pollutants are quickly washed off during storms and delivered through pipes and

---

[30] Smart Growth Network, Getting to Smart Growth II: 100 More Policies for Implementation (International City/County Management Association), 75-76.

[31] EPA, Our Built and National Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality (2000), 15.

ditches to streams, lakes, and estuaries. Monitoring and modeling studies have shown consistently that urban pollution levels increase with watershed imperviousness.[32] The result is the death and even extinction of wildlife and waters too polluted for drinking or swimming. The Tysons Corner Plan is not insensitive to these issues. After all, it does offer a general statement calling for "encourage[ing] improvement of environmental management regarding air and water quality."[33]

Specifically, though, what is to be done? The answer is a new approach to handling stormwater, called low-impact development, which is point 12. According to Harvard University's Robert France, a leading expert in water quality, Prince George's County's Department of Environmental Resources has been at the forefront of low-impact development.[34] The philosophy behind low-impact development is to mimic as closely as possible the pre-development conditions of the water cycle, so as to prevent (1) excessive volume of water discharge, (2) excessive speed of discharge, and (3) excessive temperature in the discharged water, while (4) cleaning the water of pollutants. Since the threshold for urban stream stability occurs at about 10% of site imperviousness,[35] we can appreciate how much attention has to be paid to designing a system that mimics the natural conditions of the site before there was any construction there. The Prince George's County 1999 handbook outlines an entire panoply of strategies, which can be combined with other suggestions found in Yale University's LAND

---

[32] EPA, Our Built and National Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality (2000), 17-18.

[33] Fairfax County Comprehensive Plan, 2003 Edition, Tysons Corner Urban Center, Amended through 1-27-2003, 12.

[34] Robert L. France, ed., Handbook of Water Sensitive Planning and Design (Lewis, 2002), 9, 124 ("Prince George's County, MD, is the originator and leading implementer of low-impact development (LID)."

code, published this year as the environmental counterpart to the LEED code. The main low-impact development tools are replacing impervious with pervious surfaces, especially for sidewalks and parking, and even for certain roads; using small on-site retention areas, beginning with shallow depressions in the ground, called vegetative swales, which are planted with native vegetation, and progressing to on-site rain gardens and then to bio-retention basins; and planting rooftops with vegetation to retain rain water, with the excess used for non-drinking purposes within the buildings.[36]

Low-impact development is not simply a philosophy; many of its features are now federal law. The 1987 Clean Water Act, for example, requires "best management practices to reduce pollutants in stormwater runoff from construction sites, including site planning that considers potential water quality impacts." Municipal separate storm sewer systems (MS4s) are also required to "describe practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact of discharges from their stormwater structures on receiving waters."[37] These are the types of water management and pollution considerations that need to be applied to the further development of Tysons Corner.

The rationalized urban grid that I suggested at the beginning of this talk offers an excellent opportunity for integrating many of these low-impact design features, just as it would

---

[35] EPA, Our Built and National Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality (2000), 17.

[36] Prince George's County, Department of Environmental Resources, Programs and Planning Division, Low-Impact Development Design Strategies: An Integrated Design Approach (June 1999); Diana Balmori and Gaboury Benoit, eds., The LAND Code: Guidelines for Environmentally Sustainable Land Development, Working Paper Number 5 (Yale School of Forestry & Environmental Studies, 2004). See also Larry S. Coffman, "Low-Impact Development: An Alternative Stormwater Management Technology," in France, ed., Handbook of Water Sensitive Planning and Design, 97-123.

[37] James M. McElfish, Jr., and Susan Casey-Lefkowitz, Smart Growth and the Clean Water Act (Washington, D.C.: Northeast-Midwest Institute, 2001), 13.

allow an amended Tysons Corner Plan to address the issue of open space, whether urban plazas or parks or planted boulevards, along with their connection to pedestrian trails. An amended plan could proceed beyond general, stated goals to providing an actual map of the landscape and plaza network throughout the site, which is point 13. Moreover, this outdoor network could be coordinated with the conservation plan that every state must have by 2005 "to qualify for millions of dollars in federal financing for wildlife programs."[38] Why not recoup your own tax dollars designated for wildlife programs, which means landscape areas, by integrating the open space of the Tysons Corner urban core with those of the peripheral suburbs and of the larger surrounding region into one comprehensive project?

And finally, points 14 and 15, an important, recent land-use planning tool, which has two parts, called phasing and concurrency. Phasing refers to establishing sequential development within the total area of the master plan. Concurrency means that transportation "'improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years.'"[39] Robert H. Freilich, an eminent land-use attorney in this field, points out that the 1990 Howard County General Plan, which is "oriented toward environmental protection and growth management" by taking "previous general plans further, which traditionally relied on zoning and subdivision regulations, by providing timed and sequenced growth," was awarded a 1991 American

---

[38] Jon Christensen, "Second Thoughts for a Designer of Software That Aids Conservation," New York Times (September 21, 2004), F2.

[39] D. Collies, R. Freilich, and T. Roberts, "From *Ramapo* to the Metropolitan Council: Crystallization of the Tier-Concept," in Eric D. Kelly, ed., Growth Management Programs (Matthew Bender, 1996), 630, as quoted in Robert H. Freilich, From Suburban Sprawl to Smart Growth: Successful Legal, Planning, and Environmental Systems, Section of State and Local Government Law, American Bar Association (Chicago: American Bar Association, 1999), 139.

Planning Association Award for Outstanding Comprehensive Planning. The Howard County plan, explains Freilich, makes "transit ...an essential part of [the county's] balanced growth," with "the utilization of each transit mode to its maximum efficiency and cost effectiveness within the context of a broad spectrum of transportation needs and dependency."[40] It behooves us to study what our neighbors have accomplished in the area of phased growth strategies.

These fifteen recommendations, then, constitute the basic elements of what planners today call smart growth, defined most succinctly as "an approach to development that emphasizes greater density, mixed uses, redevelopment of underused areas, transportation choices, and open space protection."[41] Here they are in summary form:

1. Overlay Tysons Corner with a rationalized street grid with pedestrian-sized blocks;

2. Distribute mixed-use development with substantial residential throughout the grid;

3. Construct buildings adjacent to the sidewalk and with shops at street level;

4. Establish a network of bike paths and provide requirements or incentives for adequate storage and shower facilities in residential and office buildings;

5. Provide frequent bus service throughout the grid;

6. Connect the grid with the neighboring suburbs through trolleys;

7. Avoid creating induced traffic;

8. Rationalize the street system with through arterials, secondary distributor streets, and tertiary local streets; cluster parking in nodes, mostly outside the central zone;

---

[40] Robert H. Freilich, From Suburban Sprawl to Smart Growth: Successful Legal, Planning, and Environmental Systems, Section of State and Local Government Law, American Bar Association (Chicago: American Bar Association, 1999), 135-136.

[41] James M. McElfish, Jr., and Susan Casey-Lefkowitz, Smart Growth and the Clean Water Act (Washington, D.C.: Northeast-Midwest Institute, 2001), 3.

9. Foster telecommuting and shopping from home, as well as providing financial incentives to take bicycles or public transport rather than cars for shopping;

10. Provide incentives for sustainable architecture ("green buildings") with LEED-certification in new construction and when retrofitted buildings;

11. Link as many aspects as possible of development to LEED criteria with a point system tied to appropriate incentives and rewards;

12. Provide requirements and incentives for low-impact development (LID) to manage stormwater and attendant pollution throughout Tysons Corner and require LID practices in new construction projects;

13. Design an integrated network of open spaces, with plazas, parks, boulevards, and trails, in conjunction with the state's wildlife conservation plan; and

14 & 15. Establish a program of phased development with concurrency requirements for the provision of infrastructure and needed services.

I conclude this talk by briefly suggesting ways that you the citizens and your nonprofit citizens groups, such as the McLean Citizens Association, can make a contribution to the Tysons Corner Plan. Let's focus for a moment on the first point emphasized in a recent publication of the Smart Growth Network, the EPA, the National Association of Counties (NACO), and the Joint Center of Sustainable Communities (NACO in collaboration with the U.S. Conference of Mayors): "smart growth requires significant public participation." The book continues: "Smart growth is designed to carry out the vision of community members and

improve their overall quality of life; therefore their participation is essential."[42] Federal law, at times, even requires public participation, for example, to satisfy the provisions of the 1987 Clean Water Act with respect to permit applications from municipal separate storm sewer systems (MS4s).[43]

Furthermore, the mayors and the counties stress that citizen participation is necessary in order to "'level the playing field' by recognizing the power imbalance that exists between grassroots organizers, developers, and city or county officials." To that end, America's counties and mayors suggest that citizens' organizations and governments avail themselves of professional mediators, such as the Iowa-based Wallace House Foundation, whose "mission focuses on working with communities in the areas of intergovernmental cooperation and growth planning." They encourage citizens' groups to use modeling software, such as the Smart Growth Index, which "can illustrate the growth outcomes of various decision scenarios as they impact the region as a whole." And they point out that foundation money is available to facilitate such processes.[44] Thanks to this guidance from our mayors and our counties, the future -- your future -- can largely be found in your own hands. Thank you.

---

[42] National Association of Counties, Joint Center for Sustainable Communities, Smart Growth Network, and the United States Environmental Protection Agency, Local Tools for Smart Growth: Practical Strategies and Techniques To Improve Our Communities, 7.

[43] James M. McElfish, Jr., and Susan Casey-Lefkowitz, Smart Growth and the Clean Water Act (Washington, D.C.: Northeast-Midwest Institute, 2001), 4-12.

[44] National Association of Counties, Joint Center for Sustainable Communities, Smart Growth Network, and the United States Environmental Protection Agency, Local Tools for Smart Growth: Practical Strategies and Techniques To Improve Our Communities, 15, 20, 23.