

10-8-2009

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Recommended Citation

Samuelson, Michael (2009) "Reducing Cars and Increasing Development: How the Creation of a Viable Transit Oriented Development Corridor in Arlington, Virginia has Sparked Growth," *Cities in the 21st Century*: Vol. 1: Iss. 1, Article 4.
Available at: <http://digitalcommons.macalester.edu/cities/vol1/iss1/4>

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Michael Samuelson

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Introduction

As the governmental center of the United States, the Washington D.C. Metropolitan Area houses thousands of federal government jobs, as well as private lobbying and special interest groups connected to the government that make the area unique from every other urban area in the country. This clustering of offices has led to a disproportionately high amount of office space compared to the regions size: the Washington Metropolitan Area has more office space than any metropolitan area except for New York and Los Angeles (Lang 2003). Couple the enormous amount of office space with the District's height restriction on commercial buildings, which outlaws the creation of any true skyscrapers, and it is easy to see why the area's suburbs have seen so much commercial development (Grunwald 2006).

One such suburban area that has seen considerable amounts of development in the past 60 years is Arlington County, Virginia. The county is located directly across the Potomac River from the National Mall and Downtown Washington, making it the closest suburban area to the power center of the region. Beginning during World War II, with the construction of the Pentagon and National Airport, Arlington has steadily increased its connection with the District, leading to increased job and residential migration to Arlington from Washington. Population of the county increased by nearly 100,000

during the 1940s, and continued to boom as Interstate-66 linked the county even further with the District.

Large amounts of suburban development, coupled with the destruction of streetcar lines that had previously connected suburbs to the district led to large amounts of automobile congestion. While under President Eisenhower highways had been seen as the answer to the problem of congestion, the election of President Kennedy led to a change in philosophy, advocating a mass transit rail system instead of highways (Schrag 2006). This eventually led to the construction of Washington Metrorail (Metro) system in the 1970s, which runs in the District and surrounding suburbs of Maryland and Virginia.

While many suburbs built massive parking lots around their stations, Arlington used the opportunity to redevelop two major corridors of development using Transit Oriented Development (TOD) design. By exploring the redevelopment of Arlington using the political economy perspective, it is possible to understand the many actors who participated in shaping the county's development. Additionally, the political economy perspective is mindful of the importance of scale when discussing TOD, which due to its nature requires the examination of actions at many different levels of governance.

While TOD has generally been a failure in the United States, it has been wildly successful in Arlington. This paper will explore why Arlington has been a success amidst so many failed TOD projects. Using the political economy perspective, this paper will study Transit Oriented Development in Arlington County since the construction of the Metrorail system. It will examine the role of political and private actors in creating the developmental corridors, as well as looking at the success of the corridors in

attracting new construction and achieving the mixed-use and pedestrian friendly landscape that defines TOD.

The paper aims to answer the following questions: How have the actions of different agents in Arlington created successful TOD? Additionally, are there aspects of Arlington's TOD that were out of the hands of these agents? Finally the paper will look at the lessons learned from Arlington that can be used in other areas to create successful TOD, as well as how Arlington can improve its own TOD corridors for the future. This paper will look to determine whether Arlington is a developmental rarity that cannot be duplicated, or are there lessons that planners from across the country can take from Arlington to further their own TOD projects?

While Arlington County's TODs has benefitted tremendously from the political geography of the Washington D.C. area, the role of county officials cannot be downplayed in the creation of TOD in Arlington. County planners directed development towards existing corridors, which when coupled with the county's strategy to place Metro stations along these corridors of development made TOD easier to achieve. However, it is impossible to say just how great an effect the geography of the region had on TOD in Arlington. Due to height restrictions on buildings in Washington, offices and residents are forced into the suburbs in search of space and cheaper land.

The Metro system was also important in the success of TOD in Arlington: by creating an extensive system that provided access to the major job, residential and entertainment centers of the region, Metro riders could get to where they needed to go without a car, increasing the appeal of living or working in a transit oriented development. What is apparent from studying the development of TOD in Arlington is that while the uniqueness of this particular situation can never be completely replicated,

other locales that are interested in creating TOD can use some of the ideas from Arlington to develop around their own transit network.

What is Transit Oriented Development?

The term Transit Oriented Development (TOD) covers a variety of land use concepts that all revolve around the idea of coordinating land use near transit stations to increase transit efficiency by increasing ridership. While TOD is generally focused around rail stations, examples of TOD focused on bus rapid transit (such as in Curitiba, Brazil), do exist. The foundation of TOD is the belief that people living in development focused on transit stations are five times more likely to ride transit than people who live elsewhere in the same urban area. This is achieved by creating supportive land-use policies near stations (Boarnet 1996). Advocates claim that TOD can lead to shorter trips, less traffic, have higher transit rates, and result in a better jobs-housing balance (Dueker 1998). From a government perspective, intense development around transit lines leads to higher property taxes which can help to “payback” the initial cost of construction of the line (Dittmar 2004).

Since Transit Oriented Development lacks a strict definition, it is difficult to decide exactly what is and what is not TOD. When possible, the distinction between TOD and transit adjacent development (TAD) should be made. TAD does not attempt to alter land use patterns to compliment the transit station located nearby. It instead is development that is located near a transit stations, but still consists of auto-oriented development that does not encourage ridership or pedestrian spaces. Large parking facilities, single family homes and auto-oriented office complexes represent examples of transit adjacent

development. This type of development should not be confused with TOD, which attempts to place transit stations at the heart of the development and to make these stations the focus of development (Tumlin 2003). In reality, the land around most transit stops is some combination of ideas of TOD and TAD (Rennes 2009). Even well planned TOD locations have some physical barriers that prevent maximum utilization of space. It is still important to make note of the distinction between areas that attempt to utilize transit as a tool to foster development and areas that do not.

While development based around mass transit lines may be a rarity in today's urban environments, the foundations of TOD were set in the late 1800s and early 1900s by streetcar entrepreneurs of the era. The construction of a streetcar line leading out of traditional downtowns allowed for the expansion of the urban area and for new development to occur close to transit stops. Such development allowed residents to live in new suburban homes while still working in the central business district. However, with the increased availability of the automobile beginning in the 1930, development shifted from a focus on street cars towards roads and highways (Dittmar 2004).

TOD has grown out of disgruntled feelings towards traditional suburban development that has been oriented around the automobile. While originally the car brought personal freedom to urban regions by allowing drivers the independence to live and work virtually wherever they pleased, it has also created landscapes of disconnected homes whose owners are reliant on the car to go anywhere. In addition, the proliferation of single family homes in the suburbs surrounding America's cities has created a sprawling landscape that consumes land that would otherwise be left for farming or natural preservation (Belzer and Autler 2002). As this sprawling urban environment has persisted and grown in the last 60 years, new frustration with congestion coupled with

new transit projects and urban design movements across the country have brought back the idea that transit can be combined with development to create new types of neighborhoods not based around the automobile, but instead around transit stations (Dittmar 2004). Although TOD cannot be considered a success without creating a substantial amount of development around transit stations, it must be viewed as more than just another form of development. TOD aims to counter sprawl and limit the environmental impacts of cities by reducing the amount of driving and land-use. TOD offers an alternative to traditional suburban development that hopes to mitigate the environmental and isolating effects of suburban life (Belzer and Autler 2002).

Transit Oriented Development revolves around what proponents call the three “D’s”: design, density and diversity of land use (Rennes 2009). Design refers to an effective street layout around the transit station. Such a layout would most likely be a grid, with large sidewalks and few wide streets located near the station. Large sidewalks allow for easy pedestrian mobility as well as outdoor seating for restaurants (Calthorpe 1993). Wide streets act as barriers for pedestrians, and cut off development that exists on the opposite side of the street from where the transit station is located. Additionally, the best TOD sites have shorter blocks which allow for better connectivity (Schlossberg 2004). Other barriers, such as rivers or railroad tracks also have the effect of reducing access for pedestrians. The goal of TOD design is to let pedestrians move as freely as possible in the area around the station.

Although it is difficult to have effective TOD without the proper street layout, buildings must also be orientated properly to encourage activity on the street. If a building does have a parking lot, it should be positioned in such a way so that pedestrians are not forced to walk across the lot to gain access to the building. This not only makes

buildings more inviting to pedestrians, but is also safer since pedestrians do not have to cross dangerous parking lots. If buildings are oriented towards parking lots, it discourages street life while “signaling that auto access is preferred” over pedestrian access (Calthorpe 1993).

While planners hope to increase pedestrian accessibility by using design principles, they also hope that the same design ideas will keep the amount of cars on the streets low. By creating narrow streets, TOD creates streets that cannot carry high volumes of traffic, and are thus less attractive to motorists. This creates a situation in which people living in TODs are less likely to use a car and more likely to walk for non-work related trips (Rennes). By reducing the number of cars on the road, TOD design also increases pedestrian activity, leading to a more vibrant street life.

Along with orientation towards transit stations, TOD also emphasizes the mixing of different land uses around the station. Mixing uses allows for fewer long trips and the ability to walk to nearby stores for basic needs, thus cutting out automobile trips (Schlossberg 2004). In addition, different land use will also draw a variety of people to the area for different reasons and at different times of day, thus ensuring that there is always some amount of street traffic. Diversity is also important within each block. Creating a street with a variety of building types entices pedestrian activity and creates greater street life (Calthorpe 1993).

The Final “D” is density, and refers to increased floor to area ratio (FAR) of a building. The FAR represents the ratio of total floor space of a building compared to the size of the plot on which the building is located. Therefore, a FAR of 1.0 would have one floor that covers the entire plot of land on which it is located. The average suburban area has a FAR of around 0.3 or 0.4 (Cervero 1991). While density in a TOD varies, they can

reach more than 10 times the density of the average suburb. Several studies have shown that increased density leads to a higher likelihood of using alternative forms of transportation and reduced automobile ownership (Rennes 2009).

While the layout of individual TOD site varies based on preexisting geography as well as the planner's ambitions for the site, most sites use some type of concentric circles model with areas closest to the stop being the highest density and tapering off as one moves further away from the transit station. This model – known as the “bulls-eye approach” – aims to concentrate more people closer to the transit station and to avoid “squandering valuable transit-accessible land” (Calthorpe 1993, P. 50). The area immediately adjacent to the transit station is also most likely to have the greatest amount of commercial space, with residential space being more common as you move away from the transit station. Locating commercial areas close to the transit station also encourages shopping during trips to and from the transit station (Calthorpe 1993).

The location of the transit line and station is important for successful TOD. While existing right-of-ways, such as on a highway medians or old train tracks, may provide for the cheapest construction cost of a transit line, such right-of-ways are often located far from destination points such as major job centers or arts districts (Calthorpe 1993). These right-of-ways do not allow for TOD development because they are often located on the periphery of urban centers and offer physical barriers to future development and pedestrian activity.

Despite all the potential that TOD has to shape development, it should be understood that TOD will never become the only type of development in a metro area, nor should this be the case. TOD will never be able to solve the myriad of urban and environmental problems of our cities today. However, when complimented with other

initiatives, TOD can help to create a more walkable and environmentally friendly city (Dueker 1998). TOD has the ability to reduce the strain on the street system, but it has its limitations and cannot replace all auto-dependent areas of a metropolitan. Instead, TOD should be seen and used as one tool in a set of many that can help create better urban areas (Dittmar 2004).

TOD has faced difficulties in implementation from several angles. Private forces that are largely responsible for the construction of higher density development often balk at the idea that consumers are willing to sacrifice single family homes in exchange for apartments near a transit stop. Developers also point to what they believe is a lack of a demand for these types of high density mixed use developments. Additionally, within non-favored sectors of the city, where many transit routes are located but where development is slow, the location of a transit station does not appear to have the required appeal for developers to overcome the many disadvantages, both real and socially constructed, of the area (Hess 2004). NIMBYism (not in my backyard) often makes the construction of the high density associated with TOD politically difficult to implement. Even those people who claim to be in favor of TOD are not willing to make sacrifices for it to occur close to them. The result has been few successful TOD sites across the country (Dueker 1998).

The Political Economy Perspective and Transit Oriented Development

It is nearly impossible to study Transit Oriented Development (TOD) without taking some form of political economy perspective. TOD is at its very core a form of growth which takes into account both good economic practices and good social practices.

It hopes to encourage development and economic growth by providing residents and workers with easy and convenient access to local offices, shops, businesses and restaurants (Calthorpe 1993). In order to have successful TOD, there must be dialogue between local businesses, residents and government. Therefore, any study of TOD must incorporate a multi-disciplinary approach into understanding how the growth came into being.

By exploring TOD through a political economy lens, it is possible to see the process through which a TOD site is created. The political economy perspective looks at the actions of different actors and institutions in the creation of place. TOD must be viewed in a larger context than just transportation planning: it is the intervention of government forces to create a certain type of development with specific aims. Political economy also looks at the structure of society and how the rules of society affect place. TOD was created in Arlington from the interaction of different government institutions – specifically the individuals who are part of these institutions – and private actors. Using the political economy perspective allows for the interactions of these agents to be placed within the societal structure of development in the Washington D.C. area to find out how and why TOD was developed in Arlington, and why it has seen such high levels of success. Additionally, the political economy perspective takes into account the significance of scale, which is important when examining TOD because it requires interactions between governmental and private forces at many different levels.

Recently, businesses along the proposed Silver Line of the Washington Metrorail system formed a lobbying coalition to ensure that the line received the necessary local support from government officials (Dulles Corridor Metrorail Project 2008). Since local political officials are weary of upsetting business interests, lest these businesses relocate

somewhere else, local business groups form a powerful lobby that can help to shape the development of cities and the location of government funding (Peterson 1981). Although this example occurs outside of Arlington, it shows the power of private actors in shaping place. In Arlington, businesses have used their leverage to force government officials to create higher densities around Metro stations, which have shaped TOD sites. Private agents play a huge role in shaping TOD sites; because they are responsible for the vast majority of construction, they have the ability to create TOD that meet their specific needs.

The term political-economy is used to discuss how the interaction between political, economic and social forces comes to shape the identity and environment of a place. It asserts that actions and places are not predetermined, but are the result of individual and collective societal decisions. In the case of TOD, the actions of planners and private developers come together to form a place based on the location of a transit station. The creation of a TOD neighborhood within the broader context of a metropolitan area relies on the decision making of several different agents, without which the development would not occur. Logan and Molotch (1987) discuss how the action of political actors and entrepreneurs in the city shapes its growth. This concept flew in the face of earlier beliefs that the shape of city growth was a natural and predetermined progression. By showing that cities are in fact socially constructed, Logan and Molotch state that understanding how a city grows and develops cannot be done without first understanding the roles played by local actors within the city.

Similarly, Giddens dismisses social determinist theories in his creation of structuration theory. By creating a theory which explains the interaction between human agency and social structures, Giddens illustrates how innovation and mutations can occur

in social structure, which in turn causes society to deviate from a previous course. He believes that these innovations are created by small groups and individuals, rather than by the larger populous. This is particularly true with TOD cases, where planners deviated from traditional auto-oriented development in order to create development along transit corridors. These planners also were appointed, not elected officials, meaning that the influence of Arlington voters was minimized. Giddens provides for this type of change in his thinking by allowing within structuration theory the ability for individual actors to switch their thinking and adopt new ideas. In this way, social evolutionary theories are not accurate, because social structures and human action cannot be predicted (Giddens 1995).

TOD results from the interactions of several different actors and agents. These agents do not always have the interests of all members of society in mind, and are usually acting for their own interests, whatever those may be. Like Logan and Molotch's theory on the city as a growth machine, which states that urban elites use the political and economic institutions of urban areas to create wealth for themselves, Giddens believes that individuals and small groups are the levels at which important decisions are made that end up sculpting city growth (Giddens 1995). Government planners, private developers and groups of businesses and residents end up defining what TOD looks like. These groups, interacting together to meet their own needs, shape TOD; the majority of tax payers, whose money is being used to pay for construction cost, have little say about how TOD is built.

Building on these points further, Cox discusses the importance of scale when looking at political geography. In particular, he states the difference between the space of dependence, where an action is occurring, and the space of engagement, where decisions

that affect the space of dependence are made. At times, a local issue can only be discussed effectively at a state or national level; the reverse may also be true, where national issues are engaged at local and grass root levels. Cox refers to this process as “jumping scale” (Cox 1998). Creating viable TOD revolves around the decisions and funding of multiple levels of governments; while the funding of a transit line may involve several local governments as well as state and national legislation, zoning around transit stations for development is the job of local city or county officials. In this way, the proper implementation of TOD requires different levels of government all interacting properly for the development to take place. Cox’s examples illustrate that when exploring development through a political economy perspective, you must examine scale to be sure that you are including all possible places of engagement for an issue.

Giddens’ structuration theory sets out the relationship between structure and power. Power, he claims, is rooted in human agency, and is the “freedom to act otherwise” (Giddens 1995). According to his structuration theory, the rules set by institutions and governments provide the context through which individuals and groups are forced to work. Within TOD, this includes ideas such as zoning and the construction of road and sidewalk infrastructure.

Hayden then provides examples of these theories in action. She shows how cheap global oil prices and national funding for the interstate system helped to lead to the sprawling suburbia that surrounds American cities today (Hayden 2003). However with nearly 50 mass transit systems now in operation in the United States, in part due to the potential for a rise in global oil prices, some of the automobile based development is being shifted towards transit and TOD (Dawson 2008a; Dawson 2008b). If oil prices were to rise, making living in outlying suburban areas too expensive for many families,

TOD sites would be well placed to attract displaced suburbanites back into areas within or closer to central cities. These examples show how national and global factors played a huge part in the creation of development at a local scale across the country.

A further use of scale that must be explored when using the political economy perspective is how scale relates to business competition. Logan and Molotch point out that while businesses may compete against other local businesses for customers, they also work together with these same competitors to foster a good economic climate for the city in which they operate (Logan and Molotch 1987). In the case of TOD, businesses located around a common transit stop may advertise together to promote themselves as a destination. Additionally, they may promote transit use in order to arrive at the development to shop or dine. Once a TOD site has been completed, businesses located within the site have a common interest of attracting people to frequent the area. Even though businesses are always in competition with one another for customers, they also work together in order to create a place that attracts customers which in the end creates more business for everyone.

By using the political economy perspective to study the creation of TOD we see how TOD fits in with other forms of development and how it is a response to these types of development. Additionally, the political economy perspective gives a more inclusive view of the development and the many different agents and institutions that made it possible.

Transited Oriented Development in Arlington County

The case of Transit Oriented Development in Arlington, Virginia is a clear example of political economy aligning with the theories of the above mentioned authors. Over the last four decades, careful planning by government officials in Arlington has created two corridors of development around the Metrorail system, which connects the county to neighboring municipalities in the Washington D.C. metropolitan region. The idea of creating dense corridors of development was initially put forth by a 1961 report by the National Capital Planning Commission. The report argued that as the suburban landscape around the District began to change, development should be concentrated to preserve open space and traditional single-family-home neighborhoods (Schrag 2006). In Arlington, the creation of the two TOD corridors has led to mixed-use and high density development around seven of the county's 11 stops. The results of the planning have been fantastic, with ridership doubling over the past 15 years and nearly 50 percent of residents using transit to commute to work along the Rosslyn-Ballston Metro Corridor, the larger of the two corridors (Smart Growth Network 2005).

The corridors of development in which there has been so much growth in the last few decades did not occur randomly or follow along a preset pattern of urban growth. Instead it occurred because of the careful planning of local officials at several levels. By examining scale, we can see that the spaces of engagement that allowed TOD to form were at a federal, regional and local level. The federal government was instrumental in providing funding and passing legislation that created the Washington Metropolitan Area Transit Authority (WMATA), which built and operates Metro. WMATA was responsible for planning where track for Metro should be placed, although they consulted local planners and officials. The Board of Directors of WMATA includes members from

the District of Columbia, Maryland and Virginia, making it a regional governing body (WMATA 2008).

Despite these important steps, the current TOD in Arlington would not be as prominent had it not been for the planning by county officials, who encouraged higher density development around Metro stations by changing zoning regulations and providing attractive streetscapes which encouraged pedestrian activity. Planning by county officials relates back to Giddens' claim about the shaping of urban landscape: in the case of TOD in Arlington, a small group of county planners held a disproportionate amount of power in molding how the landscape would look and act. County officials also encouraged placing stops close to one another to create a corridor of development rather than independent development around each stop. The overarching goal was to "encourage and support private development" of a certain type that would create transit oriented neighborhoods (Frankland 1980). The quote, taken from an Arlington County planning document for the Ballston area, is a clear example of the power of the urban growth machine in directing certain types of development.

Arlington County is located directly across the Potomac River from downtown Washington D.C., the metropolitan's largest job center. Prior to World War II, the county had primarily consisted of bedroom communities for workers in the District. However, the construction of the Pentagon during World War II opened up Arlington as a job center, for both government and private interests. Since the construction of the Pentagon, Arlington has been a prime location for job spillover from the District, which has a shortage of office space due to height restriction placed on commercial buildings within the city. The county is now home to a variety of federal agencies and bureaus, many of which are located along transit corridors (Schrag 2006). Not surprisingly based

on its location, the federal government is the largest employer in the county (Arlington County 2009)

Despite Arlington location and history as a job center, by the 1960s residents and businesses had begun to leave Arlington for more suburban destinations. With plans to create a region-wide heavy rail system already in place, county officials began to discuss where stops in Arlington should be placed. Although rail transit was initially met with skepticism by the county's head of planning, who believed that lines through Arlington would do little else than speed residents of Neighboring Fairfax County and Alexandria to and from the District, once it became clear that there would be stations within Arlington, officials began to discuss where they should be (Schrag 2006). The obvious choice was in Rosslyn, which had recently become a job and hotel center. County officials then began looking into the possibility of creating TOD corridors in order to help revive the county's tax base and halt flight to other suburban locations (Leach 2004; Arlington 1975).

Looking closer at the history of Arlington County, it is possible to understand how the county planned for the current Transit Oriented Development corridors. Arlington had developed a General Land Use Plan (GLUP) as early as 1961, a full 15 years before Metrorail opened. While this plan had always tried to concentrate development along certain corridors, once it became evident that there would be mass transit in Arlington, the Planners used the GLUP to further embrace corridors on which the mass transit would be located by increasing density around stations and allowing for a variety of land uses. It rezoned areas around soon to be created stations so that they were forced to be higher density. In addition, the new plan created more residential classifications that allowed for higher levels of apartment density. Throughout this

process up to the present time, the government has allowed for feedback from its residents and businessmen in order to continue modifying the GLUP. This feedback has resulted in continuous redevelopment of the plan to match the needs of the county and its citizens (Arlington 2009a).

Planning for where Metro's lines should be located began in the early 1960s. Initial plans for the main line running through Arlington, which would become the Orange Line on which the Rosslyn-Ballston Corridor exists, was set to place the tracks in the central median of the planned Interstate 66, which runs due west from Washington through the Virginia Suburbs. However, county officials immediately declared that this was a bad idea, as it would isolate stations in areas with few potential riders within walking distance. As a counter proposal, planners recommended placing the line under Wilson Boulevard, which had already been slated to become a development corridor under the county's GLUP plans. Additionally, the county favored five stations that would be close to one another, as opposed to the National Capital Transportation Authority's (NCTA) (the predecessor to the WMATA) proposal of only three stations. By 1967, Arlington officials had won over WMATA planners, who agreed both to place the line under Wilson Boulevard and to have 5 stations. Arlington's careful land use planning impressed the NCTA, and the county was able to implement its TOD strategy (Schrag 2006).

Along with the main goal of increasing the county's tax base and stopping suburban flight, county planners also had several design and planning goals that they hoped to achieve by creating corridors of development. While officials hoped to create intensive development within the corridors, they also hoped to limit development outside of the corridors, thereby preserving older neighborhoods. Planners also hoped to

minimize traffic in residential areas as well as improve the air quality by reducing overall traffic in the county (Arlington 1975).

In order to encourage private development, county planners created several goals for development within the TOD corridors. Retail and service in the new developments of the corridor were to be consolidated to create high volume commercial centers where pedestrians could easily walk from place to place. Additionally, office and hotel development were both strongly encouraged. Office development was encouraged due to its ability to generate a high level of revenue and to offer Arlington residents a chance to work within the county. Hotels were encouraged because they also offered significant financial benefits for the county and because they generate lower traffic congestion during peak hours. Finally, residential development near Metro stations was encouraged as part of a region-wide effort to limit traffic and increase transit ridership (Arlington 1975).

Although Arlington County might be considered by many to be a suburb due to its location outside of the center city of Washington D.C., the areas around Metro stations have a distinctly urban feel. Land surrounding Metro stations has few single family homes that are typical of suburbs; instead the land contains townhouses and high-rises, more commonly seen in a central city than a suburban county. Arlington represents one possible outcome of suburban development, the edge node. The term edge node or edge city often comes with a negative connotation, as these places are generally wealthy and exclusionary places due to the dominance of the automobile. However, such cynicism is inappropriate in the case of Arlington. The county has a net migration of 25,000 workers coming from all areas of the region, and has nearly half of the total office space of the District of Columbia (Lang 2003 and Arlington County 2008). A more appropriate term

for Arlington, one given to the area by Robert Lang, is a secondary downtown. This term conveys the urban nature of the county, and separates it from the dormitory towns that most people associate with suburban development. What has occurred in Arlington over the past 40 years has not been the creation of a suburb, but instead the development of a quasi-independent downtown that has more in common with Washington D.C. than it does with other suburban municipalities.

The plans to create transit based neighborhoods in Arlington County began in the 1960s and 1970s, while Metro was still in its planning stage. Arlington had historically been the center of business and retail in Northern Virginia, but was beginning to lose ground to more exurban development in adjacent Fairfax County. However, at the same time the opening of Interstate 66 connected the Rosslyn area of the county to Washington and began to spur development (Tumlin 2005). Officials decided to induce growth around the Rosslyn area as well as adjacent areas along Clarendon Boulevard and Wilson Boulevard by creating higher density development around soon to be created metro stations. Although planners acknowledged that increased density would place greater strain on services, they believed that the creation of TOD corridors had clear economic advantages over the present types of development (Arlington 1975). The creation of the line was met with immediate reward, as the property value of the County rose by \$1 billion a year after the opening of the Rosslyn-Ballston Corridor stations (Schrag 2006).

The creation of TOD corridors was achieved while simultaneously preserving local neighborhoods located near, but not directly adjacent, to stations. Preserving local neighborhoods, many of which consisted of single-family homes, was done for several reasons. Planners hoped that by preserving older neighborhoods, which offered moderately priced homes, they would keep the character of these neighborhoods intact

and be able to attract a diverse population of residents that did not just include upper-middle class residents. Attempts were also made to preserve previously built low-rise apartment buildings that also offered affordable housing opportunities. An underlying goal of these efforts was to attract more families with school-aged children. Planners worried that few families would be attracted by the relatively high density and high traffic created by the TOD corridors. Additionally, by preserving low density housing, the county aimed to have housing diversity within the county as well as visual variety of housing units (Arlington 1975). The result of these efforts to preserve older, low density neighborhoods is the creation of high density near stations that tapers down as you move away from the stations and leading to low density older neighborhoods located close by (Arlington 2008).

Despite the government's implementation of new zoning rules, without the support of private developers, the area would not be the urban community that it is today. The specific building regulations of the Washington, D.C. area played into the hands of Arlington officials. The city has strict building height restrictions, put into place in order to prevent private buildings from overshadowing the city's government buildings and monuments. This has led to a shortage of office space in Washington, and large amounts of overspill into adjacent suburbs. By creating a zoning pattern and incorporating a transit system that encouraged an urban environment, Arlington put itself in excellent

The constant adjustments and planning made by Arlington's government has created an urban environment within the county and has attracted new growth. The interaction between governmental structure and private agency, in the form of development, has led to the creation of the TOD corridors in Arlington. The resulting TOD corridors formed due to the unique place relationships that exist within the

Washington D.C. Metropolitan area. While the development lacks the unity that occurs in a city developed over a longer period of time, such continuity is likely to come as the areas around Metro stations continues to change and adapt to their environment (Schrag 2006).

Case Study: Ballston Station

Perhaps the most successful example of TOD in Arlington has occurred at the Ballston station. The Ballston station is located at the western end of the Rosslyn-Ballston Corridor, roughly three miles from Rosslyn. Before the arrival of Metro, Ballston had been an auto-dominated locale. The area boasted of having the world's largest garage in the 1950s, adjacent to an auto-oriented shopping mall (Schrag 2006). Since Metro opened 30 years ago, Ballston has been transformed into a residential and business center within Arlington County. The station opened in 1979 and 30 acres surrounding the station were quickly rezoned "C-O-A" – Commercial, Offices and Apartments – by the county in order to allow for denser growth around the station (Arlington 1991).

During its first decade of Metro's existence in Ballston, the area around the station saw large amounts of growth. Over 2 million square feet of office space, 600,000 square feet of retail, and nearly 3,000 residential units were added in the first decade after the opening of the Metro station, all of which more than doubled previous development in the area (Arlington 2009b). Figure 1 shows the age of development in the Ballston Metro Station Area. As you can see, few buildings remain from before 1980 when the area was still focused on the automobile. Instead the majority of development occurred in

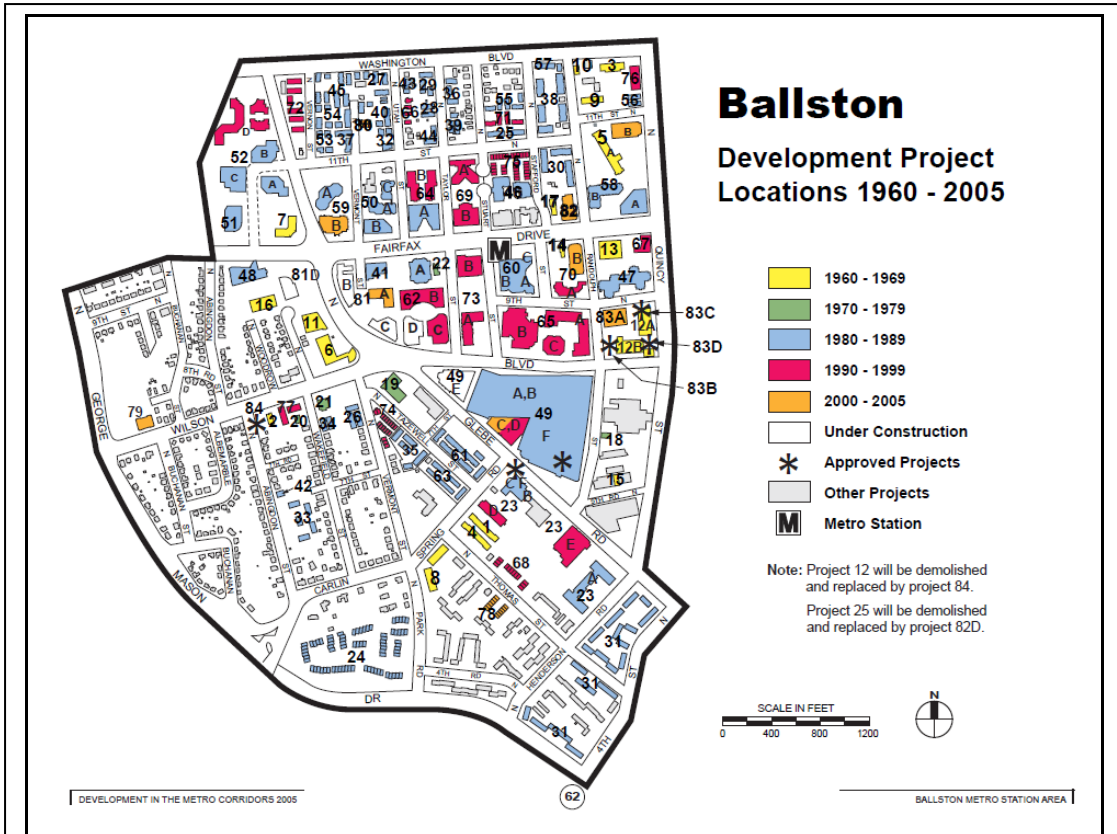


Figure 1: Development in Ballston Metro Station Area. Source: Arlington 2009b.

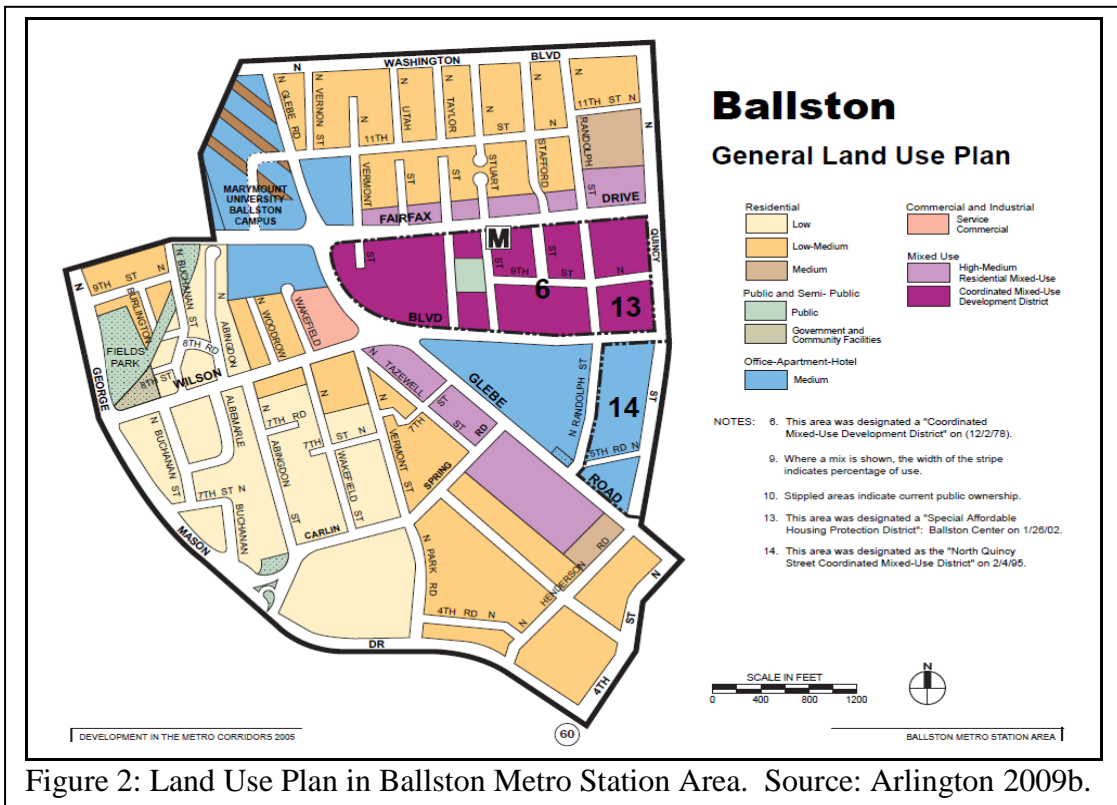


Figure 2: Land Use Plan in Ballston Metro Station Area. Source: Arlington 2009b.

the 1980s, with significant development also occurring during the 1990s and 2000s. Ballston today has a variety of uses including apartments, offices, hotels, a library, university campus and restaurants all located within a walking distance of the station (Schrag 2006).

Figure 2 shows the land uses around the Ballston Metro area. Areas closest to the station have the highest density, with density levels getting lower as you move further away from the station. Also note the diversity of land use within the area, and how the residential area in the southwestern corner of the map is still low density, single family homes.

Along with private development around the station, the county also worked to create more pedestrian friendly streetscape. Portions of the area were designated “special streetscape walkways” that required a minimum width of 24 feet, while the sidewalks of other main roads were given a minimum width requirement of 20 feet. Additionally, guidelines were established that mandated both trees and benches in the main pedestrian areas of the area. Planners hope that the creation of such streetscape and developmental patterns would create a new “downtown” in Ballston (Arlington 1991).

Equally important as the development that has occurred around the Ballston station is the high usage of alternative means of transportation that has accompanied the development. 40% of workers commute to Ballston using public transit (Arlington 2009b). In addition, the station has an average weekday ridership of nearly 25,000, making it one of the most frequently used stations in the county (Arlington 2008). Along with rail service, Ballston is also a major bus center, serving over 15,000 people per day (Leach 2004). While Ballston provides residents and workers with an excellent opportunity to use transit, it is also well positioned for those people who are forced to use

a car to get to and from work. The reality remains that a large proportion of Americans still live or work in locations that are designed for the automobile, and Ballston's proximity to the interstate allows for these people to easily access the area. However, once in Ballston, people are able to walk easily from place to place without the need for a car (Schrag 2006)

Today, the Ballston Metro Station Area encompasses 260 acres around the station. Roughly one quarter of the area is office space/retail, one quarter is low-density housing and nearly a half is medium and high density. The area has transformed from a small auto-oriented strip to a new downtown in central Arlington, with over 6,000,000 square feet of office space and nearly a million square feet of residential space (Arlington 2009b). As expected, the transformation of Ballston has been accompanied by a shift in the demographics of the area. Nearly three quarters of the population are classified as "non-family", with the majority of the population between the ages of 18-44. Additionally, while Ballston has a greater proportion of Hispanics and Asians than the metropolitan average, only 3.5% of the population is Black (Arlington 2009b and Census 2000). For a metropolitan area with such a large Black population, this low figure is troubling, as it shows an exclusion of Blacks from Ballston and other TOD areas.

Despite some levels of exclusion, Ballston has by and large achieved the goals that planners set out several decades ago. The area has become a new and vibrant downtown in the center of Arlington and has attracted new businesses and residents which have helped to expand the county's tax base, while still preserving the adjacent single-family-home neighborhoods.

Lessons from Arlington TOD and the Future of TOD in Arlington

The planning that began in Arlington in the early 1960s has resulted in the creation of TOD corridors in the county centered around Metro stations. The sheer amount of development that has occurred along these corridors is astounding: 21 million square feet of office space, 4 million square feet of retail, 25,000 new housing units and 4,000 new hotel rooms since 1980 (Arlington 2009b). To put this in perspective, this is more office space than both downtown Detroit and Miami, and only slightly less than downtown Denver (Lang 2003). All of this development has led to huge financial benefits for the county. Development along the Rosslyn-Ballston Corridor pays for almost one third of county real estate taxes, keeping county rates among the lowest in Northern Virginia (Schrag 2006).

Why has Arlington been so successful while many other attempts at TOD have seen much lower levels of growth? The success of TOD in Arlington has been equally due in part to the hard work of county officials and to the uniqueness of Arlington within the political geography context of the Washington D.C. Metropolitan Area. Arlington's land use planning, which was put in place even before the planning for Metro began, set in motion the creation of dense corridors of development, even without the use of rail transit. The importance of land use planning is a lesson that other locales can take away from the Arlington case; similar land use planning schemes can be used to concentrate development and set the stage for possible TOD elsewhere.

However, this land use planning would have counted for little if Arlington planners had submitted to the initial track placement that WMATA officials had wanted. These early plans would have placed tracks on a highway median away from these corridors of development. Such a location would have made development around

stations nearly impossible, and would not have led to the same level of development along the Rosslyn Ballston Corridor that we see today. The importance of station placement is another lesson that other TOD planners can take away from the case of Arlington. If TOD is to succeed, transit will have to be located in areas where people want to live, work and spend their free time.

Along with the efforts by Arlington planners to place stations in the correct location within the county, they also benefitted tremendously from a system that was well thought out and linked important locations together throughout the region. Businesses and residents will only locate near stations if the system provides easy access to the places where they wish to go. Fortunately, Metro planners created a system of lines that did just this, and connected Arlington to the other areas of the region. For TOD to be successful in other regions of the country, different governments within a region must work together to create a transit system that efficiently connects the important centers in each part of the region. TOD developers must understand that the success of TOD is directly related to the effectiveness of the transit system on which it is located.

Officials allowed constant reediting of zoning for TOD designated areas to match the constantly changing needs of the corridors. By limiting high density development to areas immediately around the stations, officials were able to keep neighborhoods intact and did not have to risk angering long time residents as much, while at the same time utilizing the space closest to the stations for development focused on transit ridership. Future TOD projects in other locations would do well to use the Arlington “bull-eye” model: allow the highest density closest to the station and then taper densities as you move further from the station. Such a strategy keeps existing neighborhoods intact while allowing land that is most valuable for TOD to be developed with transit riders in mind.

While all of the above points can be replicated at some level in other regions wishing to create TOD, there are aspects of the Arlington experience that cannot be duplicated in other areas. Transit lines and TOD must adapt to the needs of the people whom they wish to attract. These needs may differ depending on the region where the TOD site is located. In the case of Arlington, the political-geography of the region played a significant role in the success of TOD. Since the District placed height restrictions on buildings, this led to an artificial cap on space in the city, leading to both higher rents in the district and a limit of rentable space, which forced some residents and businesses to the suburbs. Arlington had already benefitted greatly due to the county's close proximity to downtown Washington even before the construction of the Metro. However, its construction only increased the county's connectivity to Washington, allowing for easier movement between the two areas. Additionally, the preference of the federal government to place new offices near Metro stations played into the hands of Arlington planners, and resulted in a large number of offices moving to the county.

The county's decision on where tracks should be placed was of the utmost importance in the creation of the current landscape. Future mass transit projects should not settle for out-of-the-way track locations to save initial cost. As former WMATA Chairmen and Metro planner Cleatus Barnett so elegantly stated:

We are building these lines for eternity. You're not going to pick them up and move them if you put them in the wrong place. They are there forever. And don't tell me anything about the cost. If it costs more, it costs more, but that's what we're going to do (Schrag 2006, p. 225).

Mr. Barnett's point is simple: in order to achieve the proper amount of development around transit stations, the stations may have to be placed in a location that cost a little more money to build. However, such sacrifices are worth making.

One benefit that Arlington was fortunate to have was the continuous construction of the entire Metro system at once. Many recent transit systems are being created on a line-by-line basis. This limits the amount of people and places that are served by the system significantly. Since these lines serve fewer locations, fewer people are able to get where they need to be using transit. This in turn is viewed by developers as a disincentive to invest in TOD sites. Creating a well integrated transit system that can move people without the assistance of a car is just as important as, if not more important than, the design elements of a TOD to the success of the sight.

One final lesson that new TOD locations can learn from Arlington is the importance of aligning TOD with the overall development goals of an area. In the case of Arlington, this was relatively easy, since the county desired dense corridors of development even before the creation of Metro. Other areas should follow this design and steer transit lines towards areas which they believe are prime for development. Doing so will ensure that transit stations are located in attractive areas for developers and will have the possibility to become walkable spaces where transit will be an appealing option for commuters.

While Arlington has made great strides in its development around transit stations, there are still adjustments that are being planned for the future. The demand for properties around Metro stations has led to increases in property value, making TOD locations unaffordable for large segments of the population. Integrating more low income housing is necessary to create the inclusive environment that planners strive for.

Additionally, planners are continually striving to create a more attractive and interconnected landscape (Leach 2004). The speedy nature of development near TOD sites in Arlington has created landscapes that can be overwhelming and difficult to navigate. However, county officials believe these problems can be fixed over time.

By viewing the construction of Arlington's TOD corridors through a political economy lens, it is possible to see how local structures, combined with human agency and government institutions, have led to the creation of an urban environment in what would have otherwise been a sprawling suburban landscape. Most of what happened in Arlington to create TOD – creating a transit system that serves important regional centers, placing tracks in areas prime for development, creating corridors or areas of high development and adapting TOD sites according to resident and business feedback – can be used to create similar situations in other places across the country. Arlington represents one possible future for suburbs located close to central cities: with the right types of transportation development and government planning, along with cooperation from local businesses and residents, suburbs can become true extensions of the center cities that they surround, and undertake a more urban form.

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