Survey of Smart City Trends in the West: Transit-oriented Development and Mobility-as-a-Service Part 4: Case Study – Washington DC (1)

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1. Overview of TOD and Its Relationship with MaaS

The Washington, D.C. metropolitan area has long been viewed as a model case for Transit-oriented Development (TOD) in the United States. Beginning with Arlington County, Virginia, which is considered to have the most successful TOD in the nation, the District of Columbia and Montgomery County, Maryland also have their own TODs with distinct characteristics. Based on these experiences, the Greater Washington, D.C. area has accumulated expertise on how to share development costs among stakeholders and involve local residents in projects from planning stages.[1]

In addition, the Washington Metropolitan Area Transit Authority (WMATA) is a public transportation system which runs urban rail and fixed-route buses in the city center and is jointly operated by the U.S. federal government and the three municipalities of Maryland, Virginia, and the District of Columbia. WMATA has trustees and budgets to administer TOD, and from an early stage has had a system in place to advance it in collaboration with local governments. This close collaborative structure is said to be a feature of TOD in the Washington D.C. metropolitan area.

Similar to other cities across the United States, the TOD process in the Greater Washington, D.C. is based on urban planning by local governments, which is followed by screening of individual project proposals from private developers.

Furthermore, the burden of development costs are mainly fulfilled through the funds of private developers themselves. In the process of reviewing these companies' development plans, local governments like the District of Columbia ensure that development is in the best interests of the environment and residents, like for example requesting that a bicycle parking dock for bike sharing be installed on the premises. In many cases, business operators incur the costs of changing development plans and installing additional infrastructure in accordance with such advice from local governments, but by doing so, a long-term perspective is prioritized where the user-friendliness of the property (and its associated value) will increase. Specifically, they aim to increase the number of customers for businesses that utilize real estate, such as retailers, restaurants, and lodgings, and to acquire and expand earnings.

In this way, the Washington DC metropolitan area has a track record of TOD, but MaaS cannot be said to be fully implemented at present. Their new TOD plan, however, is preparing to take advantage of the strength that is their close cooperation between public transportation and local governments to incorporates elements of MaaS. To be specific, it aims to improve areas mainly around subway stations, such as via sidewalk maintenance, the installation of bus stops, bike sharing, renovations of existing infrastructure (converting parking lots to Transportation Network Company (TNC) boarding areas), etc. and boost connectivity between different modes of transport by building multimodal hubs.

For WMATA as well, with the spread of various emerging mobility services (bike sharing, scooter sharing, TNC, etc.), potential users of public transportation can now include people living and working in a wider geographical area than before. For this reason, WMATA is covering the costs to build facilities on its premises that can be used by emerging mobility service providers and is considering the integration of various IC card based payments (rail, bike sharing, parking fees). By making TODs, which already exist in urban areas, function as hubs, it increases customer convenience, and allows for the discovery of additional clients through the expanded range of movement around subway stations.

2. History and Background of TOD at National/Local Levels
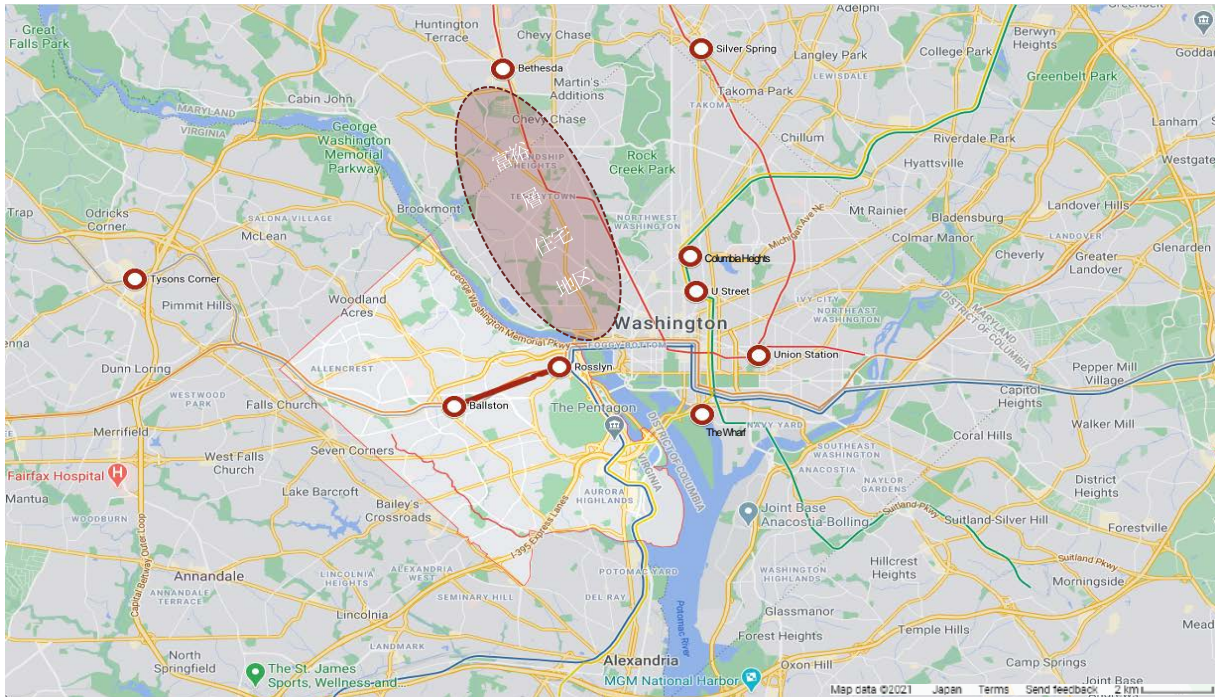
Note: Arlington County is highlighted in red (at center-left)   Source: Created using Google Maps[2]

[Figure-1] Washington DC Metropolitan Area Map

In the Greater Washington, D.C. region, a post-war 1967 agreement between the District of Columbia, Maryland, and Virginia created WMATA, with construction on the metro beginning in 1969.[3] From that point until the metro's opening in 1976, WMATA, with its area of operations covering the municipalities of a district and two states, recognized the economic impact of the start of the subway and actively supported development around stations.[1] These TODs were initially limited to wealthy residential areas within the District of Columbia, but populated areas with higher rates of poverty (Columbia Heights, U Street) also saw redevelopment in the 2000s and 2010s. In terms of suburban development, at first TOD could only be found in areas relatively close to downtown D.C., such as

Arlington County in Virginia and Montgomery County in Maryland (Bethesda, Silver Spring), which are adjacent to the District, but now more suburban local governments (Tyson's Corner, Fairfax County, VA) have shown interest.

In this way, the Greater Washington, D.C. region can be said to be a rarity among U.S. cities where, based on the success and systematic promotion of TOD from the start of subway construction, new TODs continue to be planned and executed. Recent inner-city examples include The Warf, a redeveloped southwestern waterfront district, and the Washington Union Station Expansion Project.[4]

Amidst this history, WMATA, as public transportation, has furthermore actively created a mechanism to

encourage the development of TOD.[1] This was due to early recognition that by clustering housing and business development around stations, it would ensure that there would be passengers using the subways and other services. Firstly, even before the metro began operations, guidelines were set to create public-private partnerships for development around stations, and a real estate development department comprising of experienced real estate insiders was created within WMATA to carry out joint development projects. In addition, during the time of the metro's construction, since much of the land purchased for building the stations were undeveloped farmland, especially in the suburbs, there was no choice but to purchase more land than necessary, which is considered to be one of the factors that made it easier for later development.

3. An Excellent Example of TOD: Development Along the Rosslyn-Ballston Line

While Arlington County[5] is located in Virginia, it neighbors Washington, D.C. and is at the center of the Greater Washington, D.C. metropolitan region. Even before the term TOD became popular in the 1990s, the county had implemented urban planning based on the concept of "Smart Growth", which has many overlaps with the concept of TOD.

> "Smart growth" covers a range of development and conservation strategies that help protect health and the natural environment and make communities more attractive, economically stronger, and more socially diverse.
> - Mix land uses.
> - Take advantage of compact building design.
> - Create a range of housing opportunities and choices.
> - Create walkable neighborhoods.
> - Foster distinctive, attractive communities with a strong sense of place.
> - Preserve open space, farmland, natural beauty, and critical environmental areas.

> - Strengthen and direct development towards existing communities.
> - Provide a variety of transportation choices.
> - Make development decisions predictable, fair, and cost effective.
> - Encourage community and stakeholder collaboration in development decisions.
>
> These principles were devised by the Smart Growth Network[6], which was established with the support of the U.S. Environmental Protection Agency (EPA).
> The EPA continues to provide financial and technical support[7] to local governments aiming to implement smart growth[8].

Source) Created with reference to Arlington County and EPA websites and materials

[Figure-2] Definition of Smart Growth in the United States

The development of the Rosslyn-Ballston line for the D.C. metro is the first project under Arlington County's "Smart Growth" guidelines, and is known as a successful example of TOD in the United States.[9]

To begin, I will introduce the background of the project. In the 1960s, plans were made to build a subway line through Arlington County toward neighboring Fairfax County. The County's urban planning department saw a sharp increase in demand for office space and housing and devised a plan to reduce dependence on cars and revitalize struggling commercial districts and communities at the same time. Additionally, they connected residential neighborhoods, public transportation, workplaces, schools, parks, and shops. However, the original plan established a route, known as the Orange Line, that paralleled Interstate 66 and would bypass the existing commercial areas. Therefore the County government lobbied for the Orange Line to be laid underground along the commercial districts of Wilson and Clarendon Boulevards, and succeeded in constructing 5 stations in between these streets, including: Rosslyn, Courthouse, Clarendon, Virginia Square, and Ballston.
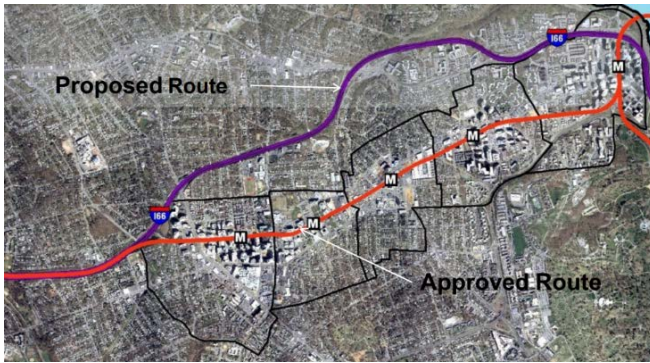
Source）Arlington County

【Figure-3】 Promotion of Area Development
Between the 5 Stations

A development project along the Rosslyn and Ballston Corridor (spanning approximately 4 km) called "Bullseye," which targets the tallest and most development within 800 meters (on-quarter mile) of metro stations, got its start this way. The distance between each station is about 1 km, or about 15 minutes apart on foot. In addition, with the fact that each sector has its own unique characteristics, an "Urban Village" concept was adopted, with a developmental scope that essential city services are within walking distance.[10]

> Urban Village is a concept for city planning proposed by the British real estate developer Urban Village Group (UVG) in the 1980s out of concern for urban sprawl, and has many similarities with sustainable development and TOD.[11] The Urban Village Concept establishes that development should occur within a distance accessible by foot or bicycle (human scale), and by encouraging mixed use, allows for city planning that prevents energy waste, reduces dependence on cars, and fosters a sense of communal solidarity among residents. It also encourages a self-contained lifestyle within the community (living, working, and spending leisure time in the same area). With the urging of the UVG, the U.K.'s national development policy between 1997 and 1999 prioritized Urban Villages.

[Figure-4] "Urban Village" Concept

In my report in the next issue, I would like to introduce the specific contents of this project, including transportation planning, the promotion structure, and funding.

Citations/References/Source Materials:

1) https://nap.nationalacademies.org/catalog/23360/transit-oriented-development-in-the-united-states-experiences-challenges-and-prospects （Accessed：：2022/5/10)

2) https://www.google.com/maps/d/u/0/viewer?mid=1IoZGfPXtdgTsWjDGY65jGiHej6DiE-q_&ll=38.83942892118805%2C-76.97564263212193&z=11 （Accessed：2022/5/10)

3) https://www.wmata.com/about/history.cfm （アクセス：2022/5/10)

4) https://railroads.dot.gov/environmental-reviews/washington-union-station-expansion-project/washington-union-station-0 （Accessed：2022/5/10)

At 26 square miles (67 km²), Arlington County is the smallest self-governing county in the United States. Eleven subway stations serve the county. The population declined in the 1980s and increased again in the 1990s. (163,401 in 1960; 152,599 in 1980; 189,453 in 2000; 236,842 in 2019)

5) A gathering of government agencies, real estate developers, environmental protection groups, historical landscape protection groups, academic institutions, and experts. The EPA has participated since its inception.
https://www.epa.gov/smartgrowth/smart-growth-network （Accessed：2022/5/10)

6) https://www.epa.gov/smartgrowth/epa-smart-growth-grants-and-other-funding （アクセス：2022/5/10)

7) https://www.epa.gov/smartgrowth/about-smart-growth （Accessed：2022/5/10)

8) Suzuki, Hiroaki, Jin Murakami, et al. (January 15, 2015). Financing Transit-Oriented Development with Land Values: Adapting Land Value Capture in Developing Countries, World Bank Publications.

9) https://www.arlingtonva.us/Government/Projects/Planning/Smart-Growth/Rosslyn-Ballston-Corridor （Accessed：2022/5/10)

10) Tony Aldous (1992) Urban villages: a concept for creating
mixed-use urban developments on a sustainable scale,
London: Urban Villages Group, pp. 11-13、Department of
the Environment (DOE) (1997) PPG1: General Policies and
Proposals, London: DOE