

# Survey of Smart City Trends in the West: Transit-oriented Development and Mobility-as-a-Service Part 7: Case Study – Paris, France (2)

## Final Report

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In the previous report, I provided an overview and history of TOD in Paris, France, and also highlighted the redevelopment of the Rive Gauche area as a good example of it. In this issue, I would like to introduce the specific contents (transportation planning, housing/office development, future prospects) of this TOD. Additionally, in the second half, I will discuss the implications obtained from this series: Survey of Smart City Trends in the West - TOD and MaaS.

### 1. Exemplary TOD: Specific Details of the Redeveloped Rive Gauche Area

#### 1.1 Transportation Planning

The transportation hub in Rive Gauche is Austerlitz Station, located on the west side of the redevelopment area.\* It is one of the main terminal stations for the French National Railways (SNCF), and is also a terminal station for long-distance lines to the south of France as well as commuter trains connecting the suburbs and the city center. Starting from Austerlitz Station, there are five subway stations located at 500-meter intervals within the redevelopment area, making it possible to move around the region without relying on a car. On the other hand, many of the railway stations were built in the last century, and their accessibility (for wheelchairs, etc.) is generally considered to be poor and renovations are still underway.<sup>1</sup>

In addition, there is a particularly active bicycle scene (this is common not only in this redevelopment area but in all of

Paris), and the city is characterized by a transportation policy that focuses on bicycles. A “Shared Streets Project” was originally implemented in Paris from 2001 to 2007 in order to create road spaces that were considerate of transportation modes other than automobiles. Since then, attention has been paid to bicycles, and it is said that this project is connected to the bike-sharing service, Vélib', which was launched in 2007.<sup>2</sup>

Then, in 2015, the cycle-friendly improvement plan “Plan Velo” was formulated, with the goal of becoming the cycling capital of the world. In addition to creating space for bicycles, this plan included the installation of bicycle parking lots and other bicycle facilities, and the promotion of the “Zone 30” program, which limits the speed of automobiles in the city to 30 km/hour. “Zone 30” originally only covered about 60% of Paris, but since 2021 it has been expanded to cover the entire city (excluding main thoroughfares, etc.), including the Rive Gauche area. The “people-centered urban development” promoted by these policies continues to receive high praise.

#### 1.2 Residential/Office Development



[Figure-1] Redevelopment area from above Austerlitz Station

Source: SEMAPA website

The most distinctive area of the Rive Gauche redevelopment project is the Massena district on the east side. This area is recognized as a successful example of compact TOD, and the plan incorporates the concept of New Urbanism (which is closely related to TOD).

Typical redevelopment projects tend to focus on either residential or office functions, but this area is characterized by its well-balanced urban functions with facilities for a variety of purposes including residences, offices, and entertainment, all within an area of approximately 337,000 m<sup>2</sup>. This is said to be the result of the city's efforts to create a Knowledge Town by attracting multiple university campuses and achieving a social mix. In particular, the south side of the Massena district is considered a model for TOD, which is in line with the EU's Sustainable Development Strategy (introduced in the previous issue of this series). "C40", a network of more than 90 cities around the world that promotes sustainable urban development, recommends that cities with underutilized space take a look at the Massena district.<sup>3</sup>

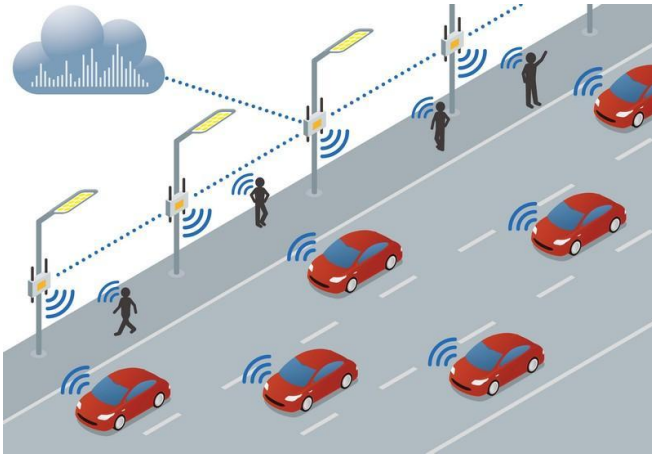
## 2. Future Prospects (Paris, France)

In Paris, the national mobility guidelines law, *loi d'orientation des mobilités* (LOM)—commonly known as the

MaaS law—requires public transportation agencies to disclose the data they collect. As competition with private IT providers has begun, public transportation agencies are taking the lead in developing and introducing MaaS, especially digital platforms that can be used with apps.<sup>4</sup> Meanwhile, updates to the physical transport infrastructure are currently underway, including the development of transfer hubs to facilitate transfers between emerging mobility services and existing public transportation.

Fortunately, in the Paris metropolitan area, development and reconstruction of transportation infrastructure, including roads, is underway in preparation for the 2024 Summer Olympics. Regarding public transportation in particular, in addition to development around stations such as in the Rive Gauche area, construction of the Grand Paris Express line, which will form a new ring railway outside the existing urban railway and subway networks, is being promoted.<sup>5</sup> Regarding the latter, the state-owned company Société du Grand Paris will be established as the main developer, and other developers will be required to invest in the development of areas surrounding new stations, thereby promoting new line planning in conjunction with urban development.

Currently, advanced demonstration experiments that could lead to the realization of MaaS are also being conducted mainly in the left bank area of the Seine River. Specifically, Paris & CO, a public corporation that contributes to the economy with the support of Paris, is conducting an experiment called "Paris2Connect" which is attaching state of the art equipment (sensors and cameras) to existing infrastructure (street streets and traffic lights) to make it a connected infrastructure (see Figure-2).<sup>7</sup> In addition to guiding self-driving cars and collecting traffic data, the company aims to provide real-time information (bus operation information, etc.) to public transportation users. Although these efforts are unlikely to be directly reflected in the future urban design of Paris, it is believed that the lessons and ideas that emerge from them will shape the city's future.



[Figure-2] Paris2Connect image Source: Paris2Connect website

### 3. Implications

By looking at case studies from several cities, it is clear that although the complete realization of MaaS in TOD areas is still a long way off, various emerging technologies and services are being developed and changes are being made to traditional TOD.

For example, in the case of Washington DC, with the emergence of new mobility services (bike/scooter sharing and Transportation Network Companies (TNC)), there is a movement to introduce the infrastructure necessary for these services into existing or planned TODs. Also, in cities where multiple TODs have been formed within one metropolitan area, the addition of transportation methods other than walking has made it easier to connect TODs, and there are also examples of TODs beginning to function as transportation hubs. In order to realize TOD that incorporates the concept of MaaS in the future, useful implications obtained from interviews with transportation operators and government officials are helpful; these will be introduced below.

#### MaaS Causing TOD Area to Expand

In interviews with stakeholders, the following opinion was voiced often: *By connecting the emerging mobility services introduced in recent years with public transportation via TOD, the TOD area, which was traditionally within walking distance, will expand.* This means that by attracting new customers who live and commute to a wider area, the number

of users of public transportation and commercial facilities at the center of TOD will increase. For example, in the Netherlands, where there are many bicycle users, the geographical range that can be called TOD is considered wider than in other countries—in the United States, the radius is about 800m, whereas in the Netherlands, the radius is 2-3km.<sup>8</sup> With the spread of bike-sharing, scooter-sharing, car-sharing, and TNCs, it seems possible that the last-mile and first-mile issues will be resolved, providing new mobility opportunities for users who previously could not access TOD-centered stations and facilities.

#### The Matter of Coordination Among Stakeholders in TOD

In the past, TOD centered on urban railways, etc., and was mainly developed through cooperation between public transportation agencies and development entities, but in recent years, new mobility services have appeared one after another, and many different transportation modes are being developed and starting to connect to TOD. As transportation methods continue to become more diverse, convenience increases, and voices can be heard saying that in planning and constructing future TODs, it will be necessary to coordinate interests among more stakeholders than ever before.

For example, in Washington DC, where stakeholders are coordinating and cooperating with each other in both MaaS and TOD, there may lie hints for finding solutions to this issue. In particular, it is worth paying attention to how the redevelopment of major stations, where the land ownership and air rights of multiple organizations overlap and serve different modes of transportation, will proceed in the future, such as the intercity railway stations expansion plan for Union Station.

In the aforementioned Paris pilot project, Paris2Connect, multiple companies and organizations formed a consortium and brought together funds and assets to advance the project, with the idea of sharing the completed infrastructure. Currently, solutions are being sought for issues such as who ultimately owns the infrastructure, how usage fees should be set, and how and with whom the data generated from the

infrastructure should be shared.

### Funds for TOD's MaaS Support will be Provided by the Main Developer for the Time Being

In many cities around the world, including the cities highlighted in this series, MaaS is still at the demonstration stage, and even in Stockholm, where a commercially available service exists, sustainable business models are still under development. Perhaps because of this, in Europe and the US, the cost of making TOD compatible with MaaS (improving existing transportation infrastructure for emerging mobility services, expanding information provision facilities for users, etc.) is basically funded by the main developer. According to interviews with the developers, they are aiming to capture value by increasing the number of users of residential and commercial facilities, public transportation, etc. by improving the convenience of TOD, and by generally aren't thinking about obtaining development and renovation costs from connected mobility operators.

The reason for this is that many of the businesses developing and introducing emerging mobility are start-up companies whose immediate challenge is to establish sustainable business models, and they cannot afford to financially contribute to infrastructure development projects. Therefore, at least until the MaaS business model is established, developers should consider methods other than charging emerging mobility operators to recover their investment.

## 4. Post-pandemic

COVID-19 struck the world at the same time as this research period, but interviews with stakeholders revealed several opinions with post-pandemic changes in mind for future TOD plans and the realization of MaaS. Regarding the effects of the pandemic, there were two types: 1) changes that had existed as a concept for some time but were accelerated by the pandemic, and 2) new ways of thinking that were born from the COVID-19 pandemic. Some of these items are mutually related or contradictory, so they cannot

necessarily be categorized neatly, but they are introduced below.

### 1) Changes Accelerated by the Pandemic

#### Diversification of Means of Transportation

Even before the outbreak of the pandemic, there were voices saying that it would be difficult and unsustainable to rely solely on public transportation for all transportation within a metropolitan area. For example, it is said that by making a variety of transportation modes available in order to realize MaaS, it will be possible to spread out the burden of public transportation during morning and evening rush hours. Due to the pandemic, reducing congestion on public transportation has become a priority from a hygiene perspective, and emerging mobility services—such as shared mobility—have attracted attention as a means of transportation other than private cars, and the number of users has increased. In the future, TOD designs that place public transportation at the core and supplement it with emerging mobility services may be useful in cities where infrastructure development cannot keep up with population growth and aging facilities.

#### Development aimed at Forming Communities around Stations

One aspect of TOD is to view stations not just as transit points, but as centers of life and work. As traditional foot traffic has decreased due to the pandemic, there has been a renewed focus on creating and improving the environment for people who live and work near stations.

Until now, the mission of the city center has been to attract commuters and visitors from the suburbs, but now emphasis has also been placed on urban development that makes it easier for city residents to move within the area. Specifically, in Washington DC, plans are being made to replace automobile-only roads with streets and public spaces designed for pedestrians and cyclists, and to convert parking lots attached to train stations into TNC boarding and alighting areas.

Even in the suburbs, for example in the United States, large-scale parking lots have been installed at train stations (park-and-ride system) to attract commuters as train passengers, but there also rumors of plans to convert these parking lots into residential or commercial facilities. Furthermore, it is also possible to expand various developments to the surrounding areas, rather than just building single-purpose box buildings, and form a community around the station, similar to a city center. Some have argued that such initiatives will continue to increase even after the pandemic, as commuters from the suburbs to the city center have not fully returned.

## (2) Thoughts Born from the COVID-19 Pandemic

### The Purpose of Traveling is Becoming more Nuanced

Due to people refraining from traveling during the pandemic, there has been an increase in work styles that involve frequently working remotely. Even after the pandemic ended, people are becoming more accustomed to working and commuting remotely, and only travel when necessary (including leisure travel). When considering future MaaS and TOD, it is necessary to redefine the mobile services (and the infrastructure required for them) that are truly needed going forward, and to make efforts to increase the added value of providing such mobile services.

### Developing Infrastructure that can be used Flexibly

The value of urban infrastructure which can be flexibly repurposed to suit different situations, both during normal times and during emergencies, has been rediscovered. During the pandemic, the government in charge of infrastructure accumulated know-how as measures were taken such as permitting outdoor dining on sidewalks and opening roads around apartment complexes as outdoor activity spaces. Such initiatives are effective in the event of an emergency such as a pandemic, and can also be an important concept as an environmental measure since they eliminate the need to demolish and rebuild infrastructure facilities. From a MaaS perspective, it is possible to plan spaces and

infrastructure that are not limited to a single-use and can be repurposed as appropriate, in order to accommodate emerging mobility services (that are currently unforeseeable) in the future.

### Economic Effects of Mixed Use

During the pandemic, fewer people commuted to work, and businesses and restaurants in business districts have suffered. It was once again recognized that there is economic value in building a mix of residential, office/commercial facilities, social infrastructure, etc. (mixed use), rather than single-use developments like office districts. Mixed use, which until now has often been talked about in the context of public interest, is said to be an effective tool for strengthening the economic resilience (ability to respond to crises) of development areas.

## 5. Summary

In this series, I introduced good examples of TOD in European and American cities, and investigated how efforts are being made to realize MaaS among them. With regards to MaaS, I found that progress is being made in line with the unique environment of each city, and many of them were in the demonstration experiment stage, but there was a lot of trial and error involved in updating existing infrastructure to enable the use of emerging mobility services that have already been introduced and establishing a MaaS business model. Additionally, some cities covered in this series had already established multiple TODs within their metropolitan areas, so there are examples of improved connectivity between TODs due to the emergence of new mobility services, as well as cities with plans for so-called mobility hubs. The lessons learned from these developments are steadily being accumulated by the people involved in each city, and could be useful in other countries as well.

TOD was defined in the late 1980s and 1990s, and even now, about 30 years later, much know-how for success has been gleaned, and the effects and benefits have been analyzed. These past analyses have shown that urban planning and

development, combined with investment in public transportation on a sufficient scale, can be a tool for stimulating economic development. Furthermore, MaaS has the potential to increase the number of transportation modes available within TOD areas and amplify the effects of TOD by developing and introducing emerging mobility services. It is hoped that the combination of both will lead to the construction of higher quality urban transportation infrastructure.

- 1) <https://www.theguardian.com/cities/2017/sep/21/access-denied-disabled-metro-maps-versus-everyone-elses>  
(Accessed:2023/9/15)
- 2) <http://www.rtp.co.jp/topics/Paris.html>  
(Accessed: 2023/9/15)
- 3) <https://www.c40.org/case-studies/c40-good-practice-guides-paris-quartier-massena-rive-gauche/>  
(Accessed: 2023/9/15)
- 4) <http://www.uclg-localfinance.org/sites/default/files/Fiches%20F18%20France%20VE.pdf>  
(Accessed: 2023/9/15)
- 5) <https://media-mediatheque.societedugrandparis.fr/medias/domain12814/media720/104618-2r85jki3xf.pdf>  
(Accessed: 2023/9/15)
- 6) <https://www.societedugrandparis.fr/qui-sommes-nous>  
(Accessed: 2023/9/15)
- 7) <https://www.parisandco.com/parisco/>  
(Accessed: 2023/9/15)
- 8) <https://www.nordregio.org/wp-content/uploads/2018/09/CASUAL-PB-2.pdf>  
(Accessed: 2023/9/15)

## Notes

\* For information on redevelopment areas, please refer to Figure-2 in the previous installment of this series, ‘Survey of Smart City Trends in the West: Transit-oriented Development and Mobility-as-a-Service Part 6: Case Study – Paris, France (1)’