

Integrating public transport & urban planning: a virtuous circle

1. Breaking the vicious circle of car dependence

Transport systems have always had a crucial influence on urban development patterns. Public transport shaped cities at the end of the 19th and the beginning of the 20th century. City centres were dense and compact, street grids and buildings were oriented towards public transport and pedestrians, and cities' outward growth was primarily structured along tramways and metropolitan railway lines. In the last 50 years, transport systems have been characterised by a tremendous increase in the use of the private car and the parallel development of road infrastructure and parking space to accommodate it. As occurred with public transport one century ago, the car dependence model has played a major role in structuring urban and suburban development along highway corridors, often taking the form of dispersed low-density, isolated, segregated uses with little regard for public transport.

The following are some of the most adverse effects of this form of dispersed development based on a high use of the private car:

- congestion, and the related losses in travel time and competitiveness,
- higher transport costs for the community,
- loss of valuable green spaces,

- higher consumption of energy for passenger transport,
- pollution, and the related health problems,
- contribution to climate change,
- decreased quality of urban life,
- health problems due to the lack of physical exercise,
- social exclusion for those who can't afford to live close to the city centre and do not have access to a private car.



As in Antwerp, public transport shaped cities at the end of the 19th and the beginning of the 20th century

Furthermore, in almost every case, urban sprawl makes public transport and other alternatives to the private car less viable, creating a vicious circle. Lower demand for public transport leads to fewer resources allocated to it, which in turn leads to reduced service, etc. **To break this vicious circle, a renewed focus by urban and transport planners, decision-makers (at local, regional and national level) and property developers on the relationship between public transport and urban planning is urgently required.**

In all cities of the world the integration of transport and urban planning is a challenge. However, the problem is particularly acute in fast growing cities in transition and developing economies that are struggling to plan transport infrastructure and simultaneously manage their rapid growth.

2. Objective of the Focus Paper

The objective of this Focus Paper is to highlight the economic, environmental and social benefits of the integration of public transport and urban planning as well as provide practical advice on how to achieve it at both the strategic and the project level.

There are many dimensions to the integration of public transport and urban planning. It refers to the physical integration of different land uses with transport services, to the integration of strategies, policies, administrative entities and disciplines, and to the coordination between the public and the private sector.

All too often the institutional arrangements between the planning of transport and the planning of land use are weak. Public transport is frequently built and operated by the public sector whereas urban development is more dependent on the private sector, making coordinated implementation difficult. Integration seeks to overcome these institutional and practical barriers.

3. The rationale for integration: a virtuous circle

The benefits of the integration of urban planning and public transport are numerous. Integrating development projects with public transport can lead to improved quality of life, socio-economic development and urban renewal. A public transport upgrade as part of an investment package not only improves transport options (modal choice) and accessibility, but can also create a better urban environment through leveraging increased investment and enhanced services in a neighbourhood. In fact, in many cases a public

transport upgrade is actually the prime impetus for the revitalisation of an urban area.

The integration of public transport and urban planning also enables higher density development which has positive benefits for the environment: more efficient use of land, higher energy efficiency and related energy savings, reduced pollution, climate change mitigation and protection of open space through smarter growth patterns. The human health benefits of reduced air pollution as well as a more active lifestyle are also common outcomes (particularly important in developed economies where demographic changes mean communities are becoming older). These are efficient arguments to contradict the supporters of low density (suburban) development patterns in some countries.

For the overall urban economy, transport costs for compact development around public transport are generally lower than for dispersed car-dependent development. In addition, benefits accrue for the private sector through more successful, profitable development projects. Successful public-private partnerships can be mutually beneficial and help finance public transport lines or other infrastructure.

Finally, the integration of public transport and urban planning has an effect on mode choice: well designed areas where sustainable modes are given priority are characterised by higher public transport use and lower car use. Attracting more people to use public transport also improves its productivity and its image, creating a virtuous circle where public transport can offer enhanced services and attract more ridership.

4. How to achieve integration?

The integration of public transport and urban planning can be considered from two distinct but related angles: strategy delivery (policy, politics and institutional factors) and project design (functional project components and design).

Strategy delivery is how to make a strategy legally, administratively, politically and functionally possible. Key questions are: how to promote institutional coordination and generate political support; which actors need to be involved; what policies are necessary to justify and enable projects; and how to secure adequate funding.

Project design refers to the system-level and station-level design factors that guarantee that projects, once constructed and in operation, achieve the environmental, economic, and social goals that were set. Key issues are: what are the functional factors,

such as the layout of the station area, the location of the different land uses and public transport features that make integration projects actually work.

4.1. Strategy delivery: policy, politics and institutional factors

The manner in which urban planning and public transport integration is brought to fruition varies widely in different parts of the world. Policies to support, encourage or mandate integration take place on different geographical levels.



Bus Rapid Transit in Curitiba, Brazil

A variety of policy frameworks

In **The Netherlands** a preference for public transport oriented land development is part of strict national spatial planning policies. In **Curitiba (Brazil)** a comprehensive city-initiated land use programme channels development around Bus Rapid Transit corridors. In **Copenhagen (Denmark)** the Fingers Plan (the city's Master Plan) directs dense development along five rail corridors and is backed by national planning guidelines. In the **UK, England** has comprehensive national planning guidelines that support the principles of sustainable development, the compact city, and public transport. The mandate for these principles is vertically integrated down to the local level, and lower levels of government are empowered with the tools to implement and enforce these principles. **Munich (Germany)** has a city-wide strategy entitled 'compact, urban and green' to help retain quality of life while still accommodating growth. In **Catalonia (Spain)**, a recent law requires any property developer to include in their development plan a mobility study, including public transport, as well as to pay for the costs of public transport during a limited period (two to five years approximately). In the **USA**, there is no national or state-wide legal mechanism to coordinate land use and public transport. This environment has not precluded the integration of public transport with land use planning in many places. **San Diego, California**

was the first city in the **USA** to adopt a Transit Oriented Development (TOD) ordinance in 1992. Most light rail stops in the city now have 'urban village overlay zones' to incentivise private development around public transport stations and they have even implemented a regional growth strategy to promote compact development. **Portland, Oregon**, set a city growth boundary to stop urban sprawl encroaching into some of the most productive farmland in the **USA**.

Inversely, national planning guidelines do not guarantee implementation. **Spain's** strategy on climate change, for example, gives policy justification for integration, but does not impose binding mandates, nor does it empower local or regional government to have strict development controls. This has resulted in few projects; those that have occurred are due to local and regional initiatives, similar to the programmes in **California (USA)**.

Involvement of private developers

An example of the integration between the public and the private sector is The Bridge, a large, mixed-use, brownfield development in the east of **London (UK)**. The site was previously un-developable due to constraints on highway access, but through a successful public-private partnership, the construction of The Bridge was able to go forward with permits contingent on the construction of a Bus Rapid Transit line and policies to encourage more sustainable travel choices.



Fasttrack, London

Institutional arrangements

These specific examples have some form of institutional coordination between spatial planning and public transport planning in common. This is sometimes achieved merely through coordination between departments, but can sometimes be aided by more formal administrative integration, such as

the creation of a real estate department at the public transport agency (e.g. Translink, in **Vancouver, Canada**). The Greater **Amman Municipality** in **Jordan** had a unique institutional opportunity in 2007 when the National Transport Ministry gave them full responsibility over public transport at a time when they were embarking on the development of a new Master Plan to accommodate a huge growth in population. They made public transport the backbone of the Master Plan and began a revival of their public transport system to support the dense infill development planned for the city centre.

Regional integration

Metro, the regional government in **Portland, Oregon (USA)** has implemented robust integration between land use and transport planning facilitated by their capacity to plan at the regional level. Sometimes formal integration just within the transport sector can promote better integration with land use. Regional transport planning bodies, such as the Regional Transport Consortium in **Madrid (Spain)** have taken a much greater role in land use planning simply by virtue of having a regional vision.



MetroSur is a circular suburban metro line (in green) connecting new suburban neighbourhoods with each other and with the centre of Madrid

Reciprocal understanding

Integration will also require staff at different agencies to adjust their approach to certain issues. For example, a public transport agency, which usually makes route alignment and station location decisions to minimise construction costs, must also consider maximising development potential. Staff that understands development must promote place-making and joint development in station areas.

Coordination is crucial between key actors including public transport providers/operators, local government (especially spatial planning staff and elected officials), the private sector (including existing and future business and property developers), the public

(including existing local community and potential employees and residents) and advocacy organisations.

Recommendations on strategy delivery

Institutional and policy structures vary widely between countries but it is possible to make general recommendations that are still widely applicable:

- The impetus for integration can be local, regional or national, public or private.
- In today's cities where mobility is increasingly a regional phenomenon, a regional vision for public transport and spatial development tends to be more successful and the best examples are those that give a regional body some planning and enforcement powers.
- Involvement of public transport authorities in urban planning decision procedures should be promoted everywhere. Urban development project proposals should pass an integration audit by the public transport authority.
- Policies that mandate, or at least give preference to, denser development at public transport nodes are best complemented by policies to discourage development in other areas (such as some form of urban growth boundary or open space preservation mechanism) or policies geared towards the development of brownfield sites.
- And finally, making sure all key actors are at the table is crucial.

4.2. Project design: functional project components and design

Integration projects take many forms, from new suburban greenfield development projects and entire 'ecocities' outside or adjacent to urban areas, to urban regeneration projects and densification around public transport stations in the heart of urban areas. Unlike the policy frameworks which vary between different countries, as seen above, factors for success at the project level are more universal, making it possible to have recommendations that are applicable across borders.

Spatial development patterns are fundamental to allowing public transport to function. However, poorly designed dense developments next to public transport could just as easily increase car traffic, worsen station access, and deteriorate the neighbourhood. There are three primary factors that can greatly improve the likelihood of creating higher public transport ridership and urban vitality: development oriented towards sustainable modes, high quality public transport and management of car access.



In Ghent, the city center is only accessible to pedestrians, cyclists and public transport

Development oriented towards sustainable modes

A dense, compact, mixed-use, pedestrian oriented development with good street and sidewalk connectivity will increase the likelihood of attracting public transport passengers. Pedestrian oriented buildings, i.e. street-facing and stimulating ground-level interest, and attention paid to place-making, to create a real living place that functionally incorporates public transport rather than merely a public transport node, are other key factors. As stated in *Developing Around Transit*, the place must be “special and irresistible.”¹

A mix of uses not only creates more interesting neighbourhoods, it is also necessary to enable more public transport-reliant households. People must be able to get to all necessary destinations either on public transport or by walking and cycling. Furthermore, regional growth strategies must ensure that major new trip generators (employment, schools and universities, and shopping centres) are located near public transport. In that respect, planning permits can be obtained more quickly in places like **Chicago, Illinois (USA)**, if the development integrates public transport access.

High quality public transport

The quality of the public transport service provided also greatly determines how much people will use it. In

particular, public transport must be designed not just to provide accessibility, but to augment the quality of the surrounding urban area. Attention must be paid to station design, to the pedestrian-friendliness of bus terminals and stops, and to investments in sidewalks and landscaping.

Multimodal access is another key consideration. Not necessarily at every station, but at least on a system level providing bicycle access and parking, high pedestrian accessibility, as well as maximising integration between bus, train and commuter rail systems to increase the range of accessible destinations improves public transport’s competitiveness with the private car.

Management of car access

Finally, complementary policies that provide financial and practical incentives to choose sustainable modes and make the real costs of car use visible will have a



Rome, car access restriction

major impact on modal choice. If using a car to access a central area or major employment location is slow due to congestion and insufficient road capacity and public transport is fast, reliable, easy and cheap, it becomes a clearer choice for a wider range of people (parking management measures, congestion charging, low emission zones, integrated public transport fares).

Recommendations on project design

Not all these features will guarantee the success of all projects. However, taking into consideration these three key factors in project design - development orientation, public transport quality and car access management - will greatly improve the likelihood that a project achieves its objectives and maximises the benefits integration can provide.

Although this paper focuses on strategy and project planning, it should be underlined that the coordination between actors is also crucial during the actual construction phase of a project, in order to optimize synergies between property and public transport infrastructure development.

¹ Dunphy, Robert T. et al., *Developing Around Transit: Strategies and Solutions That Work*, Washington D.C., ULI- the Urban Land Institute, 2004, p. 170.

Recommendations

Decalogue of basic principles for public transport oriented development

1. Integration of public transport from the very conception of urban planning projects
2. Involvement and coordination of all relevant actors
3. Private property developers to be required to support the development of public transport
4. Ensuring that city centres remain lively (commercial and leisure activities)
5. Trip generators to be located at public transport nodes
6. Limitation of car accessibility and adaptation of parking rules and management
7. Provision of high quality public transport from the start
8. Design of public transport facilities with urban development in mind
9. Focus on accessibility and connectivity not only on mobility
10. Building a 'living place' not just a public transport node

5. Conclusion

Integrating public transport and urban planning generates many benefits. Managing spatial development reduces the need for travel, high quality public transport can easily and efficiently serve the trips that remain, and the communities where projects are implemented become more accessible bringing other socioeconomic benefits. It is clear that public transport and spatial development mutually influence one another; pro-actively integrating the two allows us to capitalise on those mutual benefits. In embarking on new efforts, the strategies, successes and failures of other cities can provide excellent guidance.



To meet the objectives of sustainable mobility integrating public transport and urban planning is necessary (tram in Milan)

This is an official position of UITP, the International Association of Public Transport. UITP has 3,100 members in 90 countries throughout the world and represents the interests of key players in this sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport world-wide.

This Focus Paper has been prepared by the Commission on Transport and Urban Life and approved by the UITP Policy Board.

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