

# SUPPORTING URBAN INTEGRATED TRANSPORT SYSTEMS: GUIDELINES TO INNOVATIVE FINANCING

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## 1 INTRODUCTION

### 1.1 Background

Almost half (44%) of all EU urban citizens live in small to medium (S-M) sized city regions of less than 500,000 people, yet much of the innovation and corresponding research for sustainable transportation and mobility comes from large European cities (European Commission 2014). The European Commission (EC) has recognised the fact that targeted investment and research is required to bridge the knowledge and capacity gap that S-M sized cities are facing, so that they are able to achieve their mobility objectives.

SUITS (Supporting Urban Integrated Transport Systems) is a research project, which is financed under the umbrella of the EC's HORIZON 2020 programme, intending to enhance the capacity of small and medium Local Authorities to develop and implement sustainable, integrated and accessible transport and mobility strategies and technologies.

The Guidelines to Innovative Financing form one of the key outputs of the SUITS project. The Guidelines are designed to help local authorities in S-M cities with the decision-making process of identifying the most appropriate financing approaches to achieve sustainable urban mobility objectives. More specifically, it focuses on new and innovative financing approaches which, for a variety of reasons, are not widely used by S-M municipalities at present.

### 1.2 Objectives of Guidelines to Innovative Financing

The key objectives of the Guidelines are to:

- Present existing funding mechanisms and approaches to sustainable financing used for transport and mobility projects in S-M sized cities
- Expose any gaps in current knowledge and organisational capacity that prevent S-M sized cities from identifying, trialling, or adopting new financing approaches for sustainable mobility projects
- Present innovative financing mechanisms and strategies that are scalable and transferable to sustainable mobility projects in S-M cities
- Present international best practice through a decision-making tool in the form of a matrix of financing mechanisms

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- Enhance the administrative and organisational capacity of local authorities in S-M sized cities to use innovative financing mechanisms.

The key output of the Guidelines to Innovative Financing is a collection of Innovative Financing Briefs, including selected case studies and implementation steps for S-M sized cities.

This paper outlines the approach to developing the Guidelines to Innovative Financing and outputs of the Guidelines, designed to help local authorities to foster an environment that supports and encourages innovation and efficiency in sustainable transport and mobility finance.

## 2 Methods

### 2.1 Research Methodology

The development of the Guidelines to Innovative Financing made use of a variety of primary and secondary data sources. Primary sources included semi-structured interviews and informal conversations with individual City Partners involved in the SUITS project. These interviews were carried out to gather information about the status quo and future applicability of the funding mechanisms. Secondary sources included publications from peer-reviewed journals, media publications and books, as well as open source reports and papers published by government agencies, universities, not-for-profit entities, private consultancies, and innovation hubs. Secondary sources informed the development of the Innovative Financing Mechanism Briefs.

Due to the large volume of available information about financing and funding approaches that had been used by different authorities, organisations, and groups to fund their projects and activities, SUITS partners used their professional judgement to decide which sources and case studies were most relevant for this guidance. Inevitably there are other useful financing mechanisms which have not been included.

### 2.2 Stakeholders

There were three main stakeholder groups involved in the production of the Guidelines to Innovative Financing, as shown in Table 1.

**Table 1 Stakeholder Involvement**

Stakeholder	Involvement in Development of Guidelines
Arcadis	Management of tasks associated with the development of the Guidelines, development of the final Guidelines, preparation of a number of Innovative Financing Mechanism briefs, and review and update of innovative financing mechanism briefs prepared by the Partners.
SUITS Partners	Responsible for preparing briefs of innovative financing mechanisms and providing feedback on the Guidelines.

<b>SUITS Partner Cities</b>	Identified gaps in financing capacity, provided feedback on the format of the Guidelines, and provided information regarding present-day financing mechanisms which they use for sustainable transport and mobility measures.
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### 2.3 Innovative Finance Principles

For the purpose of the Guidelines, ‘innovative financing’ refers to financing mechanisms that are creative in thinking, that mobilise, govern, or distribute funds in ways that go beyond traditional funding processes. Innovative financing also includes financing practices that have not previously been applied to sustainable transport and mobility, as well as mechanisms that may be well-established in some cities, but not widely applied in other S-M European cities.

The principles used to assess suitability and applicability of the identified Innovative Financing Mechanisms were as follows:

- Environmental Sustainability – the mechanisms could be used to support investment towards low-carbon, climate-resilient transport and mobility options
- Financial sustainability – the mechanisms do not have a negative impact on the ability of S-M cities to cooperate with other public bodies and private organisations, or to attract funding from other sources
- Complementarity – the mechanisms could be used with other financing mechanisms, including traditional funding sources and government revenue
- Scalability – the mechanisms could be replicated and scaled up in other cities in the EU
- Efficacy – the mechanisms have ability to bridge funding shortfalls and/or to create new funding streams
- Innovation – the mechanisms feature new methods that are advanced and original

## 3 Results

### 3.1 Present-Day Trends in Partner Cities

Traditionally, financing systems in cities were almost completely dependent on funding from the national level through taxation. However, more recently, increased public debt-to-GDP ratios, misallocations of resources due to political interferences, and public deficits have led to a strong reduction in public funding at national level (OECD, 2014; Pagano & Perry, 2008). As a result, municipal and local governments have witnessed diminishing streams of funding from national governments and have increasingly been seeking funding from a wider range of mechanisms, both public and private.

The array of funding streams used to fund municipal transport and mobility systems is complex, due to the numerous actors and modalities involved in the planning, delivery

and operation of the infrastructure. However, there is a dominant structure of transport and mobility finance for municipalities which includes a combination of public and private funding from different political scales (national, regional, municipal, local etc). This section gives a brief overview of the types of public and private financing mechanisms used to fund sustainable transport and mobility schemes within cities.

### 3.1.1 Public Financing Systems

Public finance is controlled and allocated by the national, regional, or local government. Despite a reduction in public finance over the last century, public authorities are still one of the main players involved in the financing of urban transport and mobility schemes. The various levels of public authority within a country's political hierarchy play distinct roles in the financing of transport and mobility. The largest and capital cities tend to receive a larger proportion of finance from the central government due to political attention, with smaller cities often being neglected.

Finance for urban transport and mobility in most other cities is often the responsibility of regional or municipal governments, with only some degree of funding from the central government, although this varies between countries and their geopolitical structures (World Bank, 2002).

Public finance tends to be derived from multiple sources, as follows:

- *Taxation (national, regional, municipal, or local level)*: National taxation is a compulsory contribution to a political jurisdiction's revenue, imposed by government on assets such as workers' income, vehicle ownership, petrol, and property. Taxing at the local level includes pollutant taxes, and earmarked payroll taxes, and are initiated by local authorities (Ubbels et al., 2004; (World Bank, n.d.). For example, the 'Versement Transport' system in France, and the 'Vale-Transporte' system in Brazil, are taxing systems that are operated at the local level, whereby there are obligations placed on employers to finance part of their employee's commuting costs (World Bank, n.d.).
- *Value capture (VC)*: VC is a mechanism by which the agency responsible for the development of new infrastructure receives a monetary contribution from local beneficiaries (such as property owners and land developers) to help fund the infrastructure project (Enoch, Potter, & Ison, 2005). Local property owners and developers are expected to benefit from an increase in land and property values in the area surrounding the new infrastructure, VC aims to capture some of this value. For example, for the development of the Jubilee Line, developers in Canary Wharf gave a contribution of £400 million to the cost of building the Jubilee Line (Enoch et al., 2005).
- *User fees and charges*: User fees and charges are either fees imposed on users of transport infrastructure and services, or charges for non-compliant use of infrastructure and services. User fees and charges can include congestion

charges, road tolls, road fines, bus and rail tickets, or parking fees. For example, a fairly recent initiative in London was the Central London Congestion Charge, which has helped to fund the upgrading of bus services to meet the rise in passengers associated with the 20% decrease in road traffic achieved by the congestion charge (Enoch et al., 2005).

- *EU funding*: The European Commission provides financial support to cities in the EU through a wide range of financial instruments, such as grants to support projects, offering public contracts and providing budget and sector support. EU grants are direct financial contributions and come from funds such as the European Investment Bank (EIB) and the Cohesion Fund. Contracts are awarded through a tendering procedure to purchase supplies, services or works, for activities which contribute directly to specific development goals set by the EU and include mechanisms such as the Joint European Support for Sustainable Investment in City Areas (JESSICA) and Horizon 2020 (European Commission, 2017a). JESSICA supports sustainable urban regeneration and development through financial engineering mechanisms, whereas Horizon 2020 is the financial instrument used to implement the Innovation Union, a Europe 2020 flagship initiative which aims to secure Europe's global competitiveness. Budget and sector support consist of transfers of money from the EU budget to a national treasury and helps with the delivery of projects that are identified by the countries themselves.

The Eltis website provides an overview on EU funding opportunities:

<http://www.eltis.org/resources/eu-funding>

### 3.1.2 Private Financing Systems

Private finance tends to be derived from multiple sources, with the majority of private financing for sustainable transport and mobility schemes in cities tending to come from banks and institutions. Banks and institutions provide upfront capital investment (loans) to finance the projects that a city needs, but require predictable revenue streams in return of supporting these projects (BBA, 2015).

### 3.1.3 Public-Private Partnerships (PPPs)

Public-Private Partnerships (PPPs) are contractual arrangements between a public agency (either federal, state or local), and a private sector entity. Through this agreement, both entities agree to share their skills and assets to deliver a service of facility for the use of the general public. Private firms see PPPs as a lower-risk option compared to full-private investment, and public organisations benefit from capital investment.

The PPP approach is increasingly being adopted to deliver new investment in the transport sector and is well established across Europe. International financial institutions are also increasingly promoting this approach to development finance. For example, the World Bank's Maximizing Finance for Development (MFD) effort seeks to

leverage the private sector and optimise the use of scarce public resources to finance development projects targeting sustainable urban mobility.

### **3.2 Importance of Innovative Financing Approaches**

Largely as a result of the Great Recession and the subsequent policies to reduce national government deficits, local governments have seen their budgets reduced over the past decade. The increased levels of uncertainty in the market have significantly reduced the availability of both public and private finance (OECD, 2014). As a result, current investment flows have been generally insufficient to meet transportation and mobility infrastructure needs to support the EU's environmental objectives, economic growth, and social goals. In addition, across Europe, the responsibilities associated with funding and operating transport and mobility infrastructure are increasingly being devolved to local and regional governments. Meanwhile, cities are facing increasing pressure on their services due to population growth and urbanisation, whilst experiencing cutbacks in traditional funding sources. Innovative finance measures and instruments are key in overcoming this funding gap by helping local authorities diversify their income streams.

In addition, investors who may have previously invested in transport and mobility schemes are reluctant to invest in sustainable transport and mobility projects as they do not expect a high enough financial return. Investors are good at understanding a single asset such as a power plant or a toll road, however, when benefits are diffuse, such as increased city competitiveness, economic growth, or the efficient use of a scarce resource, the potential monetary benefits are less clear and, therefore, less attractive for an investor. This perception tends to be formed from various factors such as uncertainty about future energy prices, long-term delays before a project reaches maturity and profitability, and large volumes of required investment (European Commission, 2013). As such, sustainable transport and mobility schemes tend to fall into the category of risky, 'non-bankable' projects.

Innovative financing approaches could be used to fill in the gap of funds caused by the reduced funding from investors. Innovative financing can lessen the perceived risk-factor associated with sustainable transport and mobility projects, and can provide more sufficient, effective, and stable funds compared to traditional fiscal investment (European Union, 2011; Sun, Li & Xie, 2014; European Commission, 2013).

### **3.3 Innovative Financing Mechanism Briefs**

Innovative Financing Mechanisms briefs were prepared as part of the wider Guidelines, in order to provide S-M local authorities with targeted information about selected innovative financing approaches. The briefs were designed to be concise while providing readers with practical information about a financing mechanism, including: key characteristics, brief description and background, attractiveness, potential

challenges and risks, track record, case studies, relevance for S-M cities and guidelines for implementation.

In total, 21 briefs were prepared covering the following mechanism:

1. Congestion Charge
2. Municipal Green Bonds
3. Crowdsourcing
4. Stamp Duty Land Tax (SDLT)
5. Lottery Funding
6. Voluntary Capture
7. HGV Charging Schemes
8. Work Place Parking Levy (WPL)
9. Community Infrastructure Levy (CIL)
10. Advertising, Sponsorship and Naming Rights
11. Collaborating with other cities, research consortia and private companies
12. Citizen Cooperatives
13. Emission Trading
14. Planning Obligations / Developer Contributions
15. Tax Increment Financing
16. Sales Tax
17. Toll Roads
18. Selling Expertise and Technical Know-how
19. Sale of Land and Property
20. Donations as Part of Consumer Purchases
21. Grants from Private Foundations and Trusts

### **3.4 Brief Example: Voluntary Capture**

Voluntary capture is a mechanism which has become increasingly popular for funding urban infrastructure projects in more recent years. It is based on the concept of 'value capturing', the idea where part of the financial benefit gained by a developer or property owner as a result of the provision of new infrastructure is captured and invested into the construction and maintenance cost of the infrastructure. Voluntary capture is generally received when a developer or property owner calculates that better public infrastructure will create a financial benefit for themselves by enhancing the value of a development or by increasing the rents that can be charged.

Unlike other types of value capture which involve compulsory taxes and charges enforced by the state on developers and property owners who benefit from value enhancement (e.g. through property tax, developer impact fees and charges), voluntary capture is received at the discretion of the developer or property owner themselves (Enoch, Potter and Ison 2005).

There are two common types of voluntary capture:

1. **Connection fees:** Connection fees are the simplest type of voluntary capture and are a one-off contribution from developers or property owners of proposed and existing properties towards a physical connection to an existing municipal utility such as a train or bus station.
2. **Benefit sharing:** At another level, benefit sharing (also known as joint development schemes) is where both public and private sectors recognise the benefit of developing local infrastructure, and therefore come to an agreement (often legally binding) to jointly develop that infrastructure. Benefit sharing tends to be where infrastructure investment is commercially viable at both public and private levels, for example, the joint development of transit stations and nearby office buildings (Enoch, Potter and Ison, 2005).

Boston’s \$15 million New Brighton Landing Station development was funded entirely through voluntary capture. In 2013, New Balance, an athletic company, requested permission to build a \$500 million headquarters in the Allston-Boston area, complete with additional office space for renting, a hotel, a sports complex, and retail space, now known as the New Brighton Landing development (Massachusetts Department of Transport, 2012). In exchange for this permission, New Balance agreed to fund the entire development (and 10 years of maintenance) of a new rail station in the Allston-Boston area, to provide relief on the existing transport network by serving as a commuter station for the new development, and to serve the general public by helping to expand economic growth, access, and mobility in the local area.

Table 2 gives a summary of the key sections in one of the 21 Innovative Financing Mechanism briefs: Voluntary Capture.

**Table 2 Brief Example: Voluntary Capture**

<b>Key characteristics</b>	<ul style="list-style-type: none"> <li>• Deal or partnership between developers or property owners and a local authority, where the developer voluntarily agrees to pay some or all of the costs for an infrastructure project.</li> <li>• Raises additional revenue for infrastructure projects, whilst also providing a return on investment to the developer or property owner.</li> <li>• One off or irregular income source.</li> </ul>
<b>Brief description</b>	<p>Voluntary capture is a deal or partnership between developers or property owners and a local authority, where the developers or property owners offer a voluntary contribution towards the costs of a public infrastructure project. Voluntary contributions tend to be offered when the developer or property owner calculates that the benefits that they will receive from the provision of public infrastructure, outweigh the cost of investing in it.</p>
<b>Attractiveness</b>	<ul style="list-style-type: none"> <li>• Voluntary capture can often create substantial additional revenue, which can contribute to either some or all of the costs of new public transport infrastructure and mobility systems.</li> <li>• Funding projects through voluntary capture creates incentives for local authorities and transport agencies to make sure the benefits of the project will be realised in practice.</li> </ul>

	<ul style="list-style-type: none"> <li>• Voluntary capture can enable urban transport and mobility systems to become less reliant on finance from the state, whilst also keeping fares affordable to users.</li> <li>• Encourages community participation in the development of urban space, creating a sense of ownership and increasing social capital.</li> </ul>
<p><b>Challenges and risks</b></p>	<ul style="list-style-type: none"> <li>• Unlike some other funding mechanisms, voluntary capture tends to be a one off or irregular income source. As a result, it cannot be developed into a reliable and continuous revenue stream.</li> <li>• It is not a legal requirement and therefore individual deals could be hard to come by, as in order for voluntary contribution towards transportation improvement to be viable for developers, a number of conditions need to be met.</li> <li>• The areas where public transport and mobility investment is most needed, may not be the same as the areas where voluntary contributions are most viable.</li> <li>• Objectives of a developer who is paying for the transportation improvement do not necessarily correspond with objectives of the wider community and other stakeholders. Finding a compromise satisfying all stakeholders could be a challenge.</li> </ul>
<p><b>Case studies</b></p>	<p>Boston’s New Brighton Landing Station</p>
<p><b>Guidelines for implementation</b></p>	<ul style="list-style-type: none"> <li>• Often developers or property owners will come forward with plans for funding a piece of infrastructure themselves, as part of their development plans. However, where this is not the case, the following steps should be taken:</li> <li>• <b>Step 1:</b> Local authorities should be open about future transport and mobility objectives to help gain interest from the public, land owners and developers, and create a sense of transparency. The objectives could be publicised through social media (LinkedIn, Twitter, Facebook), local newspapers and magazines, flyers posted to local residents, public consultations, and stakeholder events.</li> <li>• <b>Step 2:</b> Local authorities should make sure that the potential benefits of proposed transport and mobility projects are communicated to developers and land owners in the affected areas. If the developer or land owner realises the benefits that a project will bring to them, it will help towards gaining their support and encourage their investment.</li> <li>• <b>Step 3:</b> It should be made clear that the developers and land owners’ willingness to contribute towards the project will influence any decision made. For example, developers and land owners who contribute towards the transport or mobility project should be given the opportunity to give their input into the design and implementation of the scheme.</li> <li>• <b>Step 4:</b> Developers and land owners should be given the opportunity to demonstrate their willingness to contribute towards a project. The local authority should publicise that they welcome the financial support of private developers and land owners and should develop a system for them to express their willingness to contribute. The system could be an online form.</li> </ul>

	<ul style="list-style-type: none"> <li>• If the governing body/ local planning authority has already announced the project, it can signal to private investors and developers that they can influence certain aspects of the design and potential benefits by demonstrating their willingness to pay and providing voluntary contributions. This can be done by opening up a consultation process that encourages feedback and comments from potential investors in the area.</li> <li>• While using voluntary capture could mean the investment into sustainable infrastructure is driven by private investors, it does not mean that a scheme cannot be designed to deliver the best possible solutions for the wider community. It is important that the objectives of the beneficiaries for the design of the project do not compromise those of the wider community. Local authorities using voluntary capture to fund their sustainable mobility and transportation agenda need to make sure that all stakeholders are actively involved into the design process and that their voices are heard.</li> </ul>
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#### 4 Conclusion

Many European S-M city local authorities are looking for ways to fund their sustainable mobility agenda in the context of reduced funding from national government and budget cuts. In this light, innovative financing approaches become increasingly important, as they offer new exiting opportunities to finance specific projects and schemes.

The Guidance to Innovating Financing developed as part of the SUITS project was designed to helps European S-M city local authorities to finance and implement sustainable transport and mobility measures and Sustainable Urban Mobility Plans (SUMP) that support mobility transformation. Individual innovative financing mechanism briefs are tools which local authorities in S-M cities can use in their decision-making process of identifying the most appropriate financing approaches to achieve sustainable urban mobility objectives.

This guidance is supported by two other reports prepared for SUITS Work Package 4: Innovative Procurement, which recommends innovative procurement schemes for the procurement of transport and mobility products and services and presents innovative models to draw up the documentations and procedures for public procurements for transport means, public transport services and other mobility related services; and a New Business Models Related to Transport which explains how to design, refine and apply new business models that are related to transport and mobility to optimise the opportunities to get financing.

The three Guidelines will be eventually aggregated into a decision-support framework for local authorities who are currently lacking knowledge and expertise in innovative approaches to finance, procurement and business models. This decision-support framework will be designed to help S-M authorities to improve administrative capability, increase financial sustainability, and optimise opportunities, such as

accessing regional development funds, developing partnerships and applying new financing approaches.

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